

The Development and Validation of a Scale to Measure Bankers' Self Efficacy in Nigeria

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Abstract

The study developed a scale to measure Bankers' Self Efficacy (BSS). Study population comprised bankers in the Lagos (Nigeria) offices of the top 13 commercial banks in the industry. A 37-item Likert scale was administered on 650 bankers. Of these, 456 were properly completed and returned. Data collected were subjected factor and reliability analyses. The BSS had 9 initial factors (sub-scales). Principal Component Analysis reduced the factors to 7 which accounted for 54.68% of the total scale variance while Scree plot produced 4 factors. The factors were Customer Service, Electronic Banking, Lending and Credit Administration and Internal Controls. The standardised Cronbach's Alpha coefficients of the sub-scale were 0.88, 0.72, 0.67 and 0.65 respectively confirming that a banker's self efficacy could be demonstrated along these factors. The 37-item BSS had Cronbach's Alpha coefficient of 0.84 and Split-half coefficient of 0.69 but the coefficient of the final 30-item BSS showed a major improvement with both coefficients improving to 0.89 and 0.86 respectively. It was concluded that the Bankers' self efficacy scale developed in this study has adequate psychometric properties and can effectively measure the construct in Nigeria.

Keywords: *Self-efficacy; Scaling; Scale Validation, Bankers Self-Efficacy*

1. Introduction

Performance measurement has become more important than before in service organizations. The realities of today's market (reduced profitability, increasing cost of doing business, global recession, customers' increasing demand for service, new technologies e.t.c) have made organizations to take a second look at the correlation between their organisations' performance and the quality of their employees. Prior to this new thinking, performance was being measured at the global level using quantitative means. Attempts to utilize other methods that will probe into the root cause of the dwindling fortunes of service organizations have not yielded much result. It seems one of the reasons for this is the lack of valid and reliable measurement scales that will facilitate appropriate utilization of the most important factor of production - human resources.

The development and validation of measurement scales, the nucleus of Tests and Measurement, has consequently become pivotal in identifying employees who are not just theoretically skilled to do the job but also have other personal attributes critical to their success on the job. Skills and competencies are not sufficient to guaranty a successful career in the financial services industry. A significant level of personal efficacy is required to enable employees face the increasing challenges posed by the operating environment. This research is therefore being embarked upon to develop and validate a scale to measure self efficacy of Nigerian bankers.

A key success factor in the financial services industry (service organizations) all over the world is the quality of human resources deployed to render the much desired service demanded by the customers. Banking business, just as school administration, is a service-oriented business which requires highly motivated employees. There is no room for laziness or failure in the discharge of banking duties.

The banker is responsible for assessing the financial state or standing of an individual client and offering useful suggestions as may be necessary to ensure the financial wellbeing of the client. Not only this, the banker is also expected to review the finances of a client and introduce appropriate financial programs. The banker is also expected to be responsible for the smooth daily operation of the financial institution, ensuring that all the rules guarding the operation of the institution are carefully obeyed and also that government's rules and regulations are not violated.

According to cognitive-relational stress theory (Lazarus and Folkman, 1984), as quoted by Bandura (1994)

...people's psychological adaptation to new circumstances may be either facilitated or impeded depending on contextual factors. These factors include personal resources or vulnerability on the one hand, and environmental resources or constraints on the other. In encounters with stressors, resources, vulnerabilities and constraints influence stress appraisal, coping strategies, and subjective well-being (p.178).

When a person finds himself/herself in stressful life situation that arises from job demand, one major means of surmounting the pressure of such stress is that person's sense of efficacy. People with high sense of efficacy tend to trust their own capabilities to master different types of environmental demands. According to Jerusalem (1990), persons with high sense of efficacy take demands and problems as challenges that are surmountable rather than threats or uncontrollable events. It is believed that high efficacy enables individuals to face stressful demands with confidence and this confidence comes from physiological arousal that is internally driven. Since there appears to be agreement among researchers of the importance of efficacy as a resource factor that helps to serve as buffer against unpleasant experiences, the concept of banking efficacy could be potent in positively impacting the productivity of bankers.

Self efficacy as a construct is concerned not only with the control that a person exercises on his/her actions but also with the self regulation of thought processes, motivation and affective and physiological states (Bandura, 1997). It contributes significantly to human well-being as well as his/her accomplishments. There seems to be agreement among researchers that efficacy is "a generative capability in which the cognitive, social, emotional, and behavioural sub-skills must be organized and effectively orchestrated to serve innumerable purposes" (Bandura, p.37). Self efficacy is not a measure of the skills that a person has in performing a given task. Rather, it is the belief about what one can do under different sets of conditions with whatever skills one possesses. Skills can be easily overruled by "self-doubts" (Bandura, 1997) to the extent that a gifted or talented individual would make poor use of the gifts or talents he/she has in a situation that undermines personal self belief. Therefore, effective functioning in a given situation requires both skills and the efficacy to use them.

Thus, banking self efficacy would be regarded as a banker's belief in his /her capability to organize and execute the courses of action required to achieve specified goals in the banking sector. This study seeks to investigate the kind of belief which a banker has of his/her ability to effect a course of action in banking activities. This trait could be captured by the bankers' self efficacy scale, which when developed would, indicate the various dimensions of the scale as well as enable the determination of the factors that are positively associated with it.

The concept of Self Efficacy is applicable to almost all areas of human life. No wonder Bandura (1997) submitted that self Efficacy

'...is not a contextless global disposition. Rather, it is a multifaceted phenomenon'. A high sense of efficacy in one activity domain is not necessarily accompanied by high self efficacy in other realms

(DiClemente, 1986; Hofstetter, Sallis, & Hovell, 1990). Therefore, to achieve explanatory and predictive power, measures of personal efficacy must be tailored to domains of functioning and must represent gradations of task demands within those domains. This requires clear definition of the activity domain of interest and a good conceptual analysis of its different facets, the types of capabilities it calls upon, and the range of situations in which these capabilities might be applied' (p. 42).

Therefore, the construction of self efficacy scale on an activity should draw from theoretical/conceptual analysis and expert knowledge of what it takes to succeed in that activity. Not only this, the items to be presented in the scale should be worded in terms of 'can do' and not 'will do'. According to Bandura, 'can' is a statement of capability while 'will' is a statement of intention. Perceived self efficacy is a determinant of intention, although not intention per se. Again, people that will have to respond to the scale should have the chance to express their intention by selecting from a list of options (Faleye, 2008).

Two scales are worthy of being introduced here, they are Rotter's Internal and External Locus of Control Scale (LCS) and the Tennessee Self Concept Scale. The Rotter's Scale developed by Rotter (1966) is a standardised inventory. The validity and reliability of the scale were established by the author. He reported test-retest reliability over one month period for two quite different samples had correlations of 0.72 and 0.78 respectively. It was also found to be valid with correlations ranging from 0.55 to 0.60.

The Tennessee Self Concept Scale (TSCS) The TSCS is a widely used instrument developed as a multidimensional approach to the measurement of self-concept. Fitts developed the Tennessee Self Concept Scale (TSCS) as a part of the research being done by the Tennessee Department of Mental Health in 1955 (Fitts, 1965). The TSCS consists of 100 self-descriptive items by means of which an individual portrays what he or she is, does, likes, and feels. The scale is intended to summarize an individual's feeling of self-worth, the degree to which the self-image is realistic, and whether or not that self-image is a deviant one. The scale also provides an overall assessment of self-esteem. Reliability on each segment of the Tennessee Self Concept Scale (TSCS) was based on test-retest with 60 college students over a two-week period of time. Reliability coefficients fell mostly in the 0.80 to 0.90 range (Fitts, 1996).

Development and Validation of Measurement Scales

Validation of instrument involves the use of analytical techniques to ensure that only items that satisfy certain pre-conditions are included in the final version of an instrument. Swenson (Undated) as quoted by Adewolu (2006) described the procedure for the development of summed rating scale. Seven steps, which he identified as important and should be followed by any researcher, are as follows:

Step 1: Define the construct to be measured.

Step 2: Design the Scale

Step 3: Generate an item pool

Step 4: Page Layout

Step 5: Administer the scale.

Step 6: Check the data

Step 7a: Compute Coefficient alpha.

Step 7b: Do Factor Analyses

Many researches have been conducted on self efficacy especially teacher efficacy including its measurement in the school system. Till date, the self efficacy of bankers' has not been determined and this study intends to fill this gap.

The major objective of this study therefore was to develop a valid instrument for the measurement of Bankers' Self Efficacy in Nigeria. Specifically, the study was conducted to

1. develop appropriate items on Bankers' self efficacy;
2. determine the internal consistency reliability of the scale;
3. estimate the construct validity of the scale; and
4. examine the factor structure of the scale

In order to realise the objectives stated above, the following questions were raised:

1. What items would be adjudged to measure bankers' self efficacy?
2. What is the internal consistency reliability of the scale?
3. What is construct validity of the scale?
4. What is the factor structure of the scale?

2. Methodology

The design employed for the study is the descriptive survey design. The study population are bankers in commercial bankers in Nigeria. Sample consisted of both experienced bankers, with over five years experience and bankers with less than 5 years banking experience including those undergoing entry level training at the training schools of commercial banks operating in Lagos. The choice of five years as a basis of classifying bankers as either experienced or not was based on the fact that an average employee should be a Banking Officer by the time he/she has spent 5 years in the industry. At the Banking Officer level, the employee is already taking decisions and is getting ready for middle level management role.

A further analysis of the sample revealed that 309 (68%) were males while 146 (32%) were females. 273 (60%) are first degree holders, 177 (39%) hold master degree while the remaining 3 (1%) are Ph.D holders. On length of working experience, 90 (20%) had up to 2 years experience, 146 (32%) had up to five years experience, 54 (12%) had between six to eight years experience while the balance of 166 had over 8 years experience in commercial banking.

Development and Validation of the Research Instrument

The first inventory (i.e. Bankers Self Efficacy Scale [BSS]) designed for the study had 57 items. The scale consisted of items that probe into nine key areas of bankers' activities. These areas are: (i) Deposit Mobilisation (ii) Lending and Credit Administration (iii) Electronic Banking (iv) Operations (International and Domestic) (v) Customer Service (vi) Internal Controls (vii) Risk Consciousness and Management (viii) Financial Controls and Reporting (ix) Social Responsibility. The table below presents the key areas of bankers' activities and the efficacy items in the initial scale. Appendix 1 contains the detail items on the scale.

Table 1 (Bankers Self Efficacy Sub-Scale Factors and Items) here

The response format for the scale is the Likert (1932) type with five options of SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree. The items on the BSS consisted of both positive and negative statements. This was done to ensure that respondents read and understand the items before responding to them and prevent response set. The positive item had score of 5,4,3,2 and 1, for SA, A, U, D and SD respectively and vice versa for the negative items. A mean score of 5 and 4 indicates strong or high level of self efficacy, mean score of 3 represents moderate self efficacy level while mean score 1 and 2 clearly indicate low level of self efficacy.

A pilot study was conducted in Osun State, Nigeria. Prior to the administration of the BSS for the pilot study, the first draft of the scale was subjected to review by three experts, two of whom were in Tests and Measurement, while the third reviewer was a banker with over 32 years experience in various areas of banking. They appraised the items on the basis of ambiguity, relevance and sentence structure. In the process, 20 items were dropped and 37 retained. Appendix 2 presents the draft inventory to be used for the study. The items in the draft inventory were rearranged as Appendix 3 to guide against response set by the bankers.

The administration of the initial BSS inventory on 35 bankers yielded a mean efficacy value of 4.32, with minimum and maximum scores of 2.49 and maximum of 4.77 respectively and a variance of 0.20. The result of the Cronbach's (1951) Alpha coefficient reliability test, Spearman Brown Split-half test and Guttman's Split-half reliability conducted on the BSS were 0.87, 0.77 and 0.87 respectively which were significant at $p < .05$

The subscales were subjected to reliability analysis which was used in determining retention or rejection of items on the scale. For each item on the scale, the "Corrected Item-total Statistics" (CIS) as well as "Cronbach's Alpha if Item Deleted" (CAID), were used to facilitate decision on item retention.

In respect of construct validity of the scale, construct explication process was utilised. The BSS and the Tennessee Self Concept Scale (TSCS) were correlated to determine the convergent validity of the BSS, and also between it and the Rotter Internal and External Locus of Control Scale (LCS) for further corroboration. The LCS measures an unrelated construct and was thus used as an indicator of divergent validity. The Factorial validity of the scale was determined using Principal Component Analysis with Varimax Rotation.

The Bankers' Self Efficacy Scale (BSS), Locus of Control Scale (LCS) and The Tennessee Self Concept Scale (TSCS) were administered simultaneously on the sample during the pilot study. In respect of the main research, the BSS was administered directly by the researcher. Approval to administer the instruments was sought from the Human resource and security departments of each of the banks sampled. These gave us access to the departments in the banks where customers would ordinarily not have been allowed to access. Clarifications were immediately provided by the researcher to each respondent. This elongated the process as the researcher had to personally speak to the 650 bankers sampled. While most were unable to complete the instruments immediately, a few particularly the senior ones were able immediately complete and return the instruments. On completion by the respondents, the instruments were collected for analysis. Only the instruments that were properly completed were used in data analysis.

3. Results and Discussion

Data collected were subjected to reliability analysis. This revealed the strength of the instrument in terms of internal consistency and stability. The convergence and divergent validity of the instrument was investigated by comparing the scores with those of the Self-concept Scale and Locus of Control Scale respectively. Parenthetically, Pajares and Kranzler, (1995) has established that self-concept is closely related Self-efficacy.

Research Question One: What items would be adjudged to measure bankers' self efficacy?

After the initial item moderation, editing and expert judgement, the number of items on the initial 57-item scale (hereafter referred to as the first version) was reduced to 37. The 37 items (hereafter referred to as the second version) were then subjected to psychometric analyses. The items corresponding to the nine sub-scales are as presented in Table 2.

Table 2: (Subscales and Corresponding Items in the Second Version of BSS) Here

The Cronbach's Alpha for the 37-item version was 0.84 while Split-half coefficient was 0.69.

The following criteria (as used by Govaerts and Grégoire, 2008) were used for item reduction from the second version of the BSS:

- i. Before running the first Exploratory Factor Analysis (EFA), the items were screened. First, items with Low Item Mean (LIM) of 3.95 or less were deleted.
- ii. Items with Low Item Total Correlation (LITC) of 0.29 and below were also deleted from the BSS.

- iii. Items having a High Cronbach's Alpha if Item Deleted (HCAID) of 0.839 or more were deleted

When EFA and reliability analyses were performed on the second (i.e. 37-item) version of BSS, a 9-factor solution emerged from the final EFA with 37 items. The Eigen values were 5.952, 2.088, 1.791, 1.551, 1.293, 1.227, 1.142, 1.094 and 1.023. This 9-factor solution accounted for 57.21% of total scale variance and presented a good Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.82). The application of the three conditions listed above led to the removal of 7 items from the 37-item version (i.e. second version) of the BSS. When the three conditions listed above were applied, the items affected by two of the three conditions (i.e. LIM, LITC and HCAID) were expunged from the BSS. The breakdown of the items which fall into each of the conditions and their corresponding coefficients are presented in Table 3.

Table 3: (Items Affected by Item Reduction Rules) Here

The decision to expunge items from the 37-item version of the BSS was predicated on the removal of any item that appeared on any two of the three conditions set for item deletion. Thus, there were seven items that appeared on at least two of the three columns of item deletion conditions (of Low Item Mean [LIM], Low Item Total Correlation [LITC] and High Cronbach's Alpha if Item Deleted [HCAID]). These seven items were items with numbers 1, 4, 8, 10, 12, 20 and 30.

After the removal of the seven items from the BSS, the remaining items as grouped into factors (subscales) are as presented in Table 4

Table 4: (Bankers Self Efficacy Sub-Scale Factors and Items) Here

From the nature of the subscales, only two items were left on each of 'Operations (International and Domestic)' and 'Social Responsibility' after the item reduction on the second version of the BSS. Finally, 30 items were retained on the BSS. From the foregoing, the 30 items on table 5 were considered suitable and adequate to measure bankers' self efficacy.

The items as asked for in Research Question One are presented in Table 5.

Table 5: Bankers Self Efficacy Scale (Third and Final Version) Here

Research Question Two: What is the internal consistency reliability of the scale?

The internal consistency reliability of the BSS were obtained from reliability analyses conducted on the third (i.e. final) version using SPSS (version 16). The results are presented in Table 6.

Table 6: (Internal Consistency Reliability Coefficients of the of BSS) Here

The Cronbach Alpha coefficient of the BSS was 0.86 while the Split-half reliability coefficients of the scale were 0.89 for Spearman-Brown and 0.88 for Guttman. These results are psychometrically satisfactory. (See De Veilis (1991) as cited by Adewolu (2006)) Thus the BSS can be considered reliable.

Table 7: (Standardised Item Loadings of BSS - Final Version)

Research Question Three: What is the construct validity of the scale?

Construct validity may be explicated in many ways, three of which were used in this study. They are convergent validity, divergent validity and factor analysis. In respect of convergent validity, scores from the BSS were correlated with those of the Tennessee Self Concept Scale (TSCS), a related construct. The value obtained was $r = 0.81$, $p < .05$. On the other hand, scores on BSS were correlated with those of the Locus of Control Scale (LCS), an unrelated construct. A coefficient of 0.47 was obtained for divergent

validity. These results suggest that the items on the BSS are measuring a construct not different from banker's self efficacy.

To corroborate this fact, the scores on the BSS were subjected to factor analyses. The construct validity of the BSS was investigated through Factor Analysis conducted (on the final version of the BSS) in the SPSS. The data on the third version of the BSS was initially subjected to KMO test of sampling adequacy in order to be sure that the data was suitable for Confirmatory Factor analysis (CFA). The KMO test result obtained (0.82) showed that the data were suitable for factor analysis. An Unweighted Least Square (ULS) procedure was used (to investigate construct validity) because several items showed a skewed score distribution and a ULS procedure was the most suited for non-normal data (Nunnally & Bernstein, 1994). It was followed by an oblique rotation since the BSS subscales were hypothesized to be correlated (Pekrun, Goetz, Titz & Perry, 2002). The standardized factor loadings from the ULS procedure are presented in Table 7.

The coefficients of standardized factor loadings for the four extracted factors are displayed in Table 7. The standardized factor loadings for the 30 items presented in Table 7 were statistically significant ($p < 0.05$). Thus, apart from the convergent validity of the BSS which was earlier reported to be valid in the preceding section of this work, the standardized item loadings of the BSS items showed that the instrument is valid. From the result in Table 7, 17 of the 30 items of BSS loaded on Factor 1. It could be concluded that this factor is the most important of all the nine factors on the BSS. Six items loaded on Factor 3, which makes it next most crucial to the first factor on the BSS. Five items loaded on Factor four. Only two items loaded on Factor 2 in the analyses.

Research Question Four: What is the Factor Structure of the BSS

The factor structure was investigated using Principal Component Analysis. The Eigenvalues of the BSS items as well as the scale variance they accounted for are presented in Table 8.

Table 8: (Eigenvalues and Total Scale Variance Accounted for by the Factors on the BSS) Here

From the result in Table 8, seven factors accounting for 54.68% of total scale variance were on BSS. The seven factor solution contradicted the initial assumption of the researcher (which was nine). Thus, the Scree plot was employed to further confirm the number of factors on which the BSS items would load. The plot is presented in Figure 1 below.

Figure 1: (Scree Plot showing four Factors on BSS) Here

The Scree plot in Figure 1 shows four factors on the BSS. Whereas the second version of the BSS suggested seven factors, further examination showed that only four factors appeared on the steep parts of the curves on the scree plot, and this confirms the number of factors on Table 7 (Standardised Item Loading). Thus, there are four factors on the BSS.

The Alpha coefficients of the factors on the BSS reflect a positive (and significant) relationship between the factors. This is presented in Table 9

Table 9: (Correlations of the Four BSS Factors yielded by EFA) Here

It could be observed that the coefficients of correlation among the factors were only fairly high but positive. This showed that each of the factors was measuring different dimensions of banker's efficacy. The standardized Crombach's alpha coefficients for each of the factors were 0.88 (Customer Service), 0.72 (Electronic Banking), 0.67 (Internal Control), and 0.65 (Lending and Credit Administration). The coefficients of inter-item correlation among the items on the BSS (final version) were generally low but

positive. This shows that the items measured different dimensions of Bankers Self Efficacy. The coefficients are generally significant at 0.05 level.

4. Conclusion

The result of this study is very important to operators and researchers in the banking industry. It will contribute in no small measure to the knowledge of senior bank executives on other qualitative factors that affect employee performance and the overall performance of the organisation. The study has also shown that self efficacy level of employees must be considered in appropriately placing employee to prevent placing a square peg in a round hole. The level of difficulty and efforts required to effectively function in banks' departments varies. This research has shown that employees with a higher level of self efficacy should be placed in departments with higher level of difficulty and vice versa.

In view of the findings arising from the analysis conducted in this study, it can be confidently concluded that the 30-item BSS is reliable and valid for the measurement of bankers' self efficacy. The scale is not gender biased, not academic qualification biased, not location biased, not previous work experienced. These are fundamental characteristics of a valid and reliable scale. It can be used to effectively and efficiently quantify bankers' efficacy in Nigeria.

Customer service remains the most important factor in the BSS. Banks and other service oriented organisations should consequently devote more of their trainings to customer service and human relationship skills development.

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