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Leveraging Information Technology for Effective Performance Appraisal in the Nigerian Public Service

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Abstract

The paper explores the utility of information technology in facilitating effective performance appraisal in the public service sector of Nigeria, Africa's largest economy and most populous nation. Save for recent developments such as TSA (Treasury Single Account), IPPIS (Integrated Personnel and Payroll Information System), and GIFMIS (Government Integrated Financial Management Information System), the Nigerian Public Service remains largely manual in its operations. Poor service delivery in performance appraisal - evaluating employees and checking what they have done, or not done, what they have done poorly or well, and where improvement is needed – is sometimes associated with job dissatisfaction and under-performance. As a possible solution, the paper proposes information technology-based performance appraisal approach within an integrated Systems-Goal-Setting theoretical framework. The study was based on published materials and focal group discussions with selected stakeholders from across the country. It is explained how a robust performance appraisal is a priceless tool for strategy execution and leadership effectiveness. A technology-based employee appraisal model is illustrated in simple cases using a spreadsheet package on a 5-level rating scale. The feasibility and relative simplicity of IT-based performance appraisal approach is elucidated. Some major challenges including phobia for the numeric and general reluctance to embrace technology-change in performance appraisal practice are highlighted. The implications for staff training and development and scope for future research are covered.

Keywords: *Performance Appraisal Information System (PAIS), Performance Contract, Results-Based Management (RBM), Office Productivity Computing, Strategic Performance Management System (SPMS)*

1. Introduction

Performance management is a systematic process by which an institution involves its employees, as individuals and teams, towards accomplishing desired goals and objectives, and this is conventionally viewed as a priceless tool for realizing tangible results, sustainable corporate culture, strategy execution and leadership effectiveness. However, while performance management system has received a great deal of attention in the field, the actual mechanism – performance appraisal - for conducting robust goal-setting and measuring individual employee or team performance has remained a critical challenge to many organizations. This development is viewed with grave concern for human capital productivity and development, particularly in the public service sector of the many developing economies like Nigeria. Performance appraisal is a crucial activity of any manager who oversees people and in any organization, public or private, where people are engaged to achieve set goals or tasks. It is a major aspect of Strategic Performance Management

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System (SPMS) aimed at ensuring a robust employee compensation, promotion, sanction, and disengagement system. Performance appraisal is by no means an easy task because equality of human performance is an abnormality thereby creating inherent tendency for subjectivity, emotionalism and leniency (Grote, 2011). Human talent differs across the whole continuum of humanity and 'all fingers are not equal'. Thus, assessing human effectiveness or usefulness, by definition, implies comparisons and differentiation. However, technology-based appraisal system proposed can be deployed to recognize human capacity differences and help in achieving higher-level objective, meritocratic evaluation of team members. Apart from ensuring supervisors' consistent fairness and transparency of the appraisal process, computer application can also permit clearer indication of where specific skill-gaps need to be bridged to enhance overall organizational performance. As Murthy (2015) explains, if the feedback and rating are based on data and facts, it is easier to explain the rating rationale to the employees. This also facilitates better understanding on where they stand vis-à-vis their counterparts, but if it is not based on factual data, then it is difficult to explain to employees the rationale behind their rating without disruptive prejudice.

While there has been a lot literature on diverse aspects of performance management, there are few academic papers that have critically examined the role, application or prospects of using technology to facilitate the process of appraising the employee. There are postulations that machines have no role to play in evaluating job performance, while there are those who believe that computer software can help to keep subjectivity in performance appraisal to the barest minimum. There is also the debate as to how many goals should be set for the average employee in the first place, the important behavioral attitudes and competencies needed to get the job done, the way the organization wants it, how performance rating should be explained to the skeptical employee, without the risk of demotivating the employee.

The present contribution is designed with the conviction that considering the increasingly networked global environment and the future of the workplace, computer technology can help to ease employee performance appraisal (Dobbs *et al.* 2015; Chopra, 2014; Susskind, 2013), but, certain crucial questions are of immediate interest in the context of developing practical employee appraisal mechanism. In what specific manner can computer spreadsheet package be used to set clear employee goals, targets and responsibilities, so as to help to improve appraisal objectivity ("what do you expect of me")? What is the right performance appraisal rating to determine how well the employee or team member has done in achieving set goals ("how am I doing at meeting your expectation")? What rating scale is most beneficial to drive performance and to make meaningful differences in individual performance? These issues are germane not only to sustainable good corporate governance, but also to sustainable development of human capital across economic sectors. In this paper, an attempt is made to explore the extent to which a computer-based appraisal model can helpin addressing these issues.The import of this contribution is to explore the acceptability and feasibility of a technology-based performance appraisal model when introduced to automate the usage, organization, calculation, analysis, and storage of information relating to performance appraisal process. It is contended that a technology-based appraisal model has the potential for making the process a bit easier or less taxing, particularly in the public service context of Nigeria and other Sub-Saharan economies (Olaopa, 2015; Commonwealth Secretariat, 2010).

1.1 Significance of the Study

The need for the present study can be explained from two perspectives. First, performance appraisal is pivotal to dealing effectively with employee compensation, promotion, sanction, and disengagement, but it has remained a crucial PMS aspect that is regarded as always difficult, controversial, a daunting challenge, downright taxing, or frustrating to managers (Grote, 2011: 6). Additionally, weak appraisal delivery system in many organizations has been linked to job dissatisfaction and higher-level staff turnover. The practical difficulty of quantifying some types of job, goals and achievements are also widely acknowledged (Ajayi, 2009). Thus, this contribution should be seen as part of renewed efforts towards integrating modern

technologies from the private sector into government, to the benefit of all citizens (Senge, 2006; Chopra, 2014; BPSR, 2014; Tooki, 2016).

Second, renewed attempts aimed at restructuring, deepening and strengthening the Nigerian Public Service as means for achieving concrete socio-economic dividends of democracy for the people amidst current inclement economic condition in the country, makes the present study on performance appraisal even more relevant (Olaopa, 2015; Buhari, 2016; Ukpong, 2016). The slow pace in entrenching, deepening and institutionalizing PMS in Nigeria through widespread capacity building so as "to reduce subjectivity in appraisals" has also been acknowledged (Office of the Secretary to the Government of the Federation [OSGF], 2014: 188), hence the need to leverage information technology for improving mechanisms for proper identification, utilization and rewarding of top performers in the public service as it is done in advanced economies and many performance-driven private-sector organizations.

In essence, the significance of the study lies in the potential to refine and improve on current approaches particularly in Nigeria by making the whole performance appraisal process more efficient, thereby streamlining the subjective and time-consuming tasks associated with traditional performance appraisal system. This way, the employees themselves would be empowered to increase efficiency and focus resources on achieving pivotal national policy priorities, while also giving them a sense of ownership and responsibility to effectively deliver dividends of democracy.

The rest of the paper is as follows: This introduction is followed by a review of the relevant literature. Subsequent section highlights the essential aspects of the IT-based performance appraisal model followed by the highlights of the keys results of the analysis. The paper ends with a summary of the findings, implications and some suggestions for future studies.

2. Literature Review

2.1 Performance Appraisal

Common concepts and practices in Strategic Performance Management System (SPMS) are well-documented in the HR literature, but sparse attention has so far been paid to the crucial issue of technology-assisted performance appraisal. Performance appraisal is used to denote a formal record of a supervisor's opinion or summary of the quality of an employee's work, his/her potential for development and overall performance against the set goals (Grote, 2011; Rao, 2012). In essence, performance appraisal assesses employee's current and potential performance levels (Enikanselu & Oyende, 2009). Key aspects of traditional performance appraisal clarity of SMART (Specific, Measurable, Achievable, Realistic and Time Bound) goals, taking cognizance of agreed-upon Key Performance Indicators (KPIs) and Balanced Scorecard (BS), objectivity, effective feedback mechanism, and what relative weights are applicable to results, outputs and outcomes and the competencies needed by the employee in getting those results (Grote, 2011; Ordonez, *et al.* 2009; Locke & Lathan, 2002).

If performance appraisal is to achieve desirable human capital developmental impact, there has to be attitudinal shift by both the employee and his/her appraiser from what performance appraisal is not to what it really is. Performance appraisal is not a negotiation, but a discussion of the supervisor's opinion on the employee's job within a congenial atmosphere of employee-supervisor partnership, mutual expectations, trust and transparency (Grote, 2011). Understanding performance appraisal with this methodological emphasis can help to remove what is perceived to be its legal drawback (such in claims of discrimination) from some employees, who tend to be dissatisfied with the appraisal process (Malos, 1998; Sudarsan, 2009). Thus, where the PMS policy provides for employee's input in the specified form, it should be understood by both parties that it is only a way to gain more information from the employee's perspective so that no vital information is overlooked in ensuring completely evidence-based appraisal system. Thus, both parties (the supervisor and the employee) are to treat the appraisal process in a job-specific, fair, objective and factual manner (Malos, 1998). How technology can be deployed to achieve this result-driven agenda is the major concern of this article.

2.2 Rating Scale

A major challenge in SPMS across jurisdictions is in assigning objective rating to reflect employee

performance (Ajayi, 2009; Grote, 2011; Muchinsky, 2012). Thus, the present contribution proposes a workable and less-taxing approach. Performance appraisal rating scales are diverse in theory and practice (Kruger & Dunning, 1999; Lombardo & Eichinger, 2003; Bhattacharya & Sengupta, 2009; Sudarsan, 2009; Grote, 2011), but Rating Scale is proposed herein because it is widely used across many jurisdictions. Also, the rating idea lends itself to enhancing objectivity and analysis in performance evaluation process. Quantification of performance is particularly crucial in enhancing public service delivery. As Olaopa (2015) asserts, if good governance is wrapped in high-sounding macroeconomic terms that cannot be translated into specific poverty-reduction, live-enhancing indices, then government performance becomes meaningless. Admittedly, there may be some important aspects of job performance that could be found unsuitable for formalized SMART goals-based setting. Even at that, with minimal Performance appraisal information systems training, supervisors can acquire good capability to objectively evaluate the value of the so-called qualitative aspects of certain jobs.

2.3 Balanced Scorecard and Key Performance Indicators (KPIs)

Performance appraisal is seen often seen in leadership context. In this change-driving context, the Balanced Scorecard (BS) contains key performance drivers of a strategy-focused organization (Kaplan & Norton, 2000; Niven 2006). Covering four broad perspectives including Service Delivery, Financial Stewardship, Operational and Internal Processes, Learning and Development, BS has been found useful for enhancing individual and institutional performance (Epstein & Manzoni, 1997; Malina & Selto, 2001). BS provides the Key Result Areas (KRAs), small number of unique responsibility areas that must be executed successfully if the employee's job is to be appraised as having beenproperly done. The KRAs in turn will be broken down into Key Performance Indicators (KPIs) or metrics that will be used to determine how well the individual employee has performed. The KPIs are expressed in more exact terms to facilitate ease of assessment of the quality of job done, the amount of work (quantity) done, whether the job was done efficiently (cost saved or within budget, the degree to which schedules and timeliness were adhered to, percentage increase in satisfied customers or service complaints), contribution to employee training, among other indicators. Embracing IT for robust framing and tracking of these performance indicators is imperative for achieving the desired socio-economic results of diverse government development programmes, initiatives and projects.

2.4 Office Productivity Computing and Performance Appraisal

Information technology is increasingly regarded as a critical success factor for strategic performance management system, particularly in sustainably transforming government and professions (Rao, 2004; Commonwealth Secretariat, 2010; Susskind, 2013; Chopra, 2014); hence, this paper is premised upon the belief that it is good management practice to adopt new technology to innovate employee appraisal service delivery. The dominance of technology is acknowledged in every field and sector today and one of the global forces breaking all the trends, just as performance analytics is getting more important in the age of big data (Dobbs *et al.* 2015). In using the IT for performance appraisal, technology is used as aids; people are treated as people and not as statistics. Notably, Microsoft EXCEL statistical software, around since 1985 and widely used in many corporate offices across the world (Spiegel & Stephens, 2011), provides reliable systematization and computation. Thus, emerging software such as spreadsheet package can be creatively deployed, especially in a developing economy like Nigeria, to simplify the rating process without losing information quality at individual and corporate levels.

2.5 Theoretical Basis for the Study

This contribution is guided by a wide range of theories owing to its interdisciplinary nature. Performance management is generally influenced by Motivational Theory, Systems Theory, Goal-Setting Theory (GST), and Victor H. Room's 1964 Expectancy Theory. Edwin Locke(1968)'s GST was found to be more applicable to the subject-matter of performance appraisal because it stresses result-based management approaches, including Management-By-Objectives, KPIs and BS, setting

clear goals as a way of motivating employee's superior performance, as well as ensuring employee's accountability for the job outputs and outcomes (Enikanselu & Oyende, 2009; Rao, 2012). The idea is that goals will lead to effort, while effort will yield performance, then, the performance is rewarded. In this reasoning, poor- or non-performance should not be rewarded, because de-motivation is likely to follow the practice or act of rewarding poor performance.

Although the GST tries to justify goal-setting for optimal performance management, it does not rationalize goal measurement or performance appraisal as a pivotal issue in any performance management system (Rao, 2012). Thus, in filling the gap in this respect, Taylorism and computer-aided systems theory provide us with the general theoretical basis for this contribution. Thus, the present study is partly rooted in Fredrick Winslow Taylor's scientific management philosophy, which is often seen as a system that has no room for the nuances of human nature in its desire to obtain greater efficiency in the affairs of man (Hindle, 2008). However, it is contended that humanity's dependence on or use of 'machines' does not necessarily mean the elimination of exercise of human judgment, hence, the imperative for application of common sense in using data-based, mathematical model results is widely acknowledged. At the individual level, for instance, the idea of computer application in performance appraisal is to help the manager to be able to use "less muscle", but "more brains" in finding solutions to HR management.

At a wider, institutional level, computer-aided systems theory enables us to acknowledge the diversity of employee performance in the work environment, and encourages some technology-emotional synergy for maximum evaluation impact. This is achieved through several criteria, notably "network effect", and "user knowledge" (Schwaninger & Mandl, 2012). In other words, employee performance may be as diverse and 'difficult' to assess as they are, but there should be a systematic way of harnessing the wide scope for maximum benefit. The underlying thought here is that of a systematic problem-solving effort, combining synergy and integration with efficiency in order to achieve the ultimate goal of impactful quality decision-making on the use of human resources, the most critical input for desirable productivity in any endeavor.

In essence, IT-based performance appraisal system is in sync with result-driven rating method and practicality criterion for effective HR management that encompasses goal-specificity, participative decision making, explicit time-period, and feedback (Enikanselu & Oyende, 2009). Thus, the basis for technology-application to performance appraisal proposed in this paper is not necessarily to solve any mathematical problem, but to facilitate performance appraisal in tangible, quantifiable terms that the modern supervisor needs, particularly in the public-sector context.

2.6 Empirical Evidence

The HR literature repeatedly points to difficulties experienced in conducting performance appraisal, but few academic papers have so far detailed out how the problem might be solved using the computers (Grote, 2011: 6). If some managers succeed in 'writing' the appraisal, they still want to avoid the facial contact with the employee to discuss the appraisal results, yet it is crucial for the employee to perceive strong ties between performance as measured and the resulting rewards in terms of compensation, promotion, or non-monetary recognitions (Rao, 2012). This is where IT can help. In this context, a general insight into the potentialities of IT-based performance appraisal system from a private firm's perspective is provided by Gates (1999). By translating a rating into compensation and by enabling the manager to visually compare such figures as ranking 'by performance' and 'by salary', the electronic appraisal system helps the managers to grade employees consistently according to both performance and policy. The author hints that the application also helped to reduce the time spent by managers on appraisal administration by at least 50 percent.

Interestingly, IT has been used with positive results in relation to electronic monitoring of performance and in facilitating the feedback process through many software packages available online (Fletcher, 2001; Selden *et al,* 2001; Spinks *et al,* 1999). Technology businesses like Capterra.com (2015) provide online information on a wide range of Performance Appraisal Software

(PAS) products that organizations can deploy to obtain better satisfaction with SPMS in terms of using data to gain key insights into how individuals and teams have performed and can improve on performance. The products are either Web-based or installable, but whatever accessibility format is selected, the essence of PAS is to significantly improve the appraisal process, cut-down on its drudgery, and use automation to achieve more objective, accurate, reliable and faster appraisal.

Insightful contributions by Zoltners (2015) and Roberge (2015) stress the need for simplicity in goal-setting. People are not robots; if many variables are included in the spread sheet, the supervisor may become fuzzy about which employee's behavior and performance actually result in corporate performance. Deployment of the spread sheet technology permits tangible results / outcome, not activities, to be rewarded.

Similarly, the seminal work of Kumar *et al.,* (2015) in the context of sales force development underscores the strategic value derivable from quantitative analysis of staff performance. In that work, the researchers use statistical techniques to link employee performance with corporate profitability, the types of training and incentives each sales staff member receives. Citing one Fortune 500 technology firm, the study reports 8 percent increase in profitability across the sales force and a 4 percent increase in corporate revenue.

In the Nigerian context, research has relatively not focused on the feasibility of IT in addressing the nagging challenges of performance appraisal in the public sector. Dogarawa (2011) is a good attempt, but the work seems to be more focused on developing suitable appraisal templates with useful pointers that can engender closer interaction between the supervisor and the employee. It is noteworthy that the work advocates automation and intranet in performance management of the Nigerian Public Service. Happily, GIFMIS – Government Integrated Financial Management Information System – has been designed to make use of modern ICT to help the Government of Nigeria to plan and use its financial resources more efficiently and effectively. GIFMISis an IT-based system for national budget management and accounting in Nigeria aimed at improving public expenditure management processes, as well as enhancing greater accountability and transparency across Ministries and Agencies of government. It is the contention of this paper that the same spirit of GIFMIS can be extended to the equally crucial management of performance appraisal in the Nigerian public service.

2.7 Performance Appraisal in Nigeria and Elsewhere in Africa

Since independence in 1950s/1960s, various African governments, notably, South Africa, Ghana, Liberia, Kenya, Uganda, among others, have been implementing various reform initiatives aimed at improving the quality of life for their people. The missing ingredients in the numerous reform agenda since independence border largely upon the issue of service delivery and the general performance of the public sector. In recent years, attempts have been made to introduce Results-Based Management (RBM), which seeks to redefine public sector 'performance' in terms of emphasis on outputs and outcomes, instead of being overly pre-occupied with inputs and processes. Under the RBM, a number of flagship programs and initiatives including Performance Contracts have been made on a continuous basis, including extensive capacity-building in diverse areas, to support effective implementation of a robust PMS.

A major challenge experienced with the SPMS includes perceptions among employees that they are entitled to performance bonus regardless of their actual level of performance. Also, there have been some concerns about the limited trust among employees in the credibility of the performance appraisal system (Commonwealth Secretariat, 2010). Notably, in 2007, Kenya won the UN Public Service Award in the first category of Transparency, Accountability and Responsiveness in the public service in recognition of its performance contracting system (Commonwealth Secretariat, 2010). Kenya's success factors are linked to involvement of other stakeholders from outside the public service and embracing ICT and e-government strategy as major components in driving the process of implementing performance management system, among other economic development reforms.

The Ghanaian government introduced a performance-based appraisal system in the civil service in 1992, which replaced the annual confidential appraisal system that was deemed unsuitable for modern public administration. In 1997, performance contracting (performance agreement) was introduced to include appraisal of senior public officers who had been left out of the appraisal system. Notably, to compute employee's scores obtained on core targets, Ghana public service PMS adopts 5-point scale was for the rating (Public Service Commission, 2013).

In the Ugandan context, results-based management has been utilized for promoting optimal use of available resources by focusing on the results delivered at both institutional and individual levels as part of Poverty Eradication Action Plan (PEAP) and similar developmental initiatives. Instructively, like Ghana, Uganda also adopts 5-level rating scale with the maximum rating of 5 (five) reserved for employees who proved to be models of excellence in both the results achieved and the means by which they are achieved (Ministry of Public Service, 2007).

In Liberia, a Civil Service Performance Management System Handbook of March 2013 provides a framework for systematically evaluating, maintaining and improving the work performance of public servants throughout the country's government (Civil Service Agency, 2013). Liberia adopts a modified "Graphic Rating Scale" appraisal method which is based on a 5-point rating scale. In appraising employee performance under the Liberia PMS, the supervisor is enjoined to apply appropriate principles to ensure equitable and meaningful ratings.

Akin to what has been happening in several other parts of commonwealth Africa, there is an on-going process towards strengthening the performance management system for the Nigerian Public Service, at both the institutional and individual employee levels. Performance Management System has been a key component of Public Service Reforms since the country returned to democracy in 1999 (OSGF, 2014). In 2010, the National Monitoring and Evaluation Department was established in National Planning Commission (NPC) to work with government Ministries, Departments, and Agencies (MDAs) in developing MDAs' KPIs. The resultant KPIs formed the basis of ministerial performance contracts that was signed by the former President Good luck Jonathan, all his ministers and other strategic senior public officers in August 2012. The signing of the performance contracts signaled the beginning of SPMS implementation in the Nigerian context (OSGF, 2014). The essence of the new Nigerian initiative is to ensure increased productivity and quality service delivery, and also ensuring overall accountability in the Civil Service to the Nigerian people who expect tangible results in terms of good roads, education, jobs, security, and other desirable dividends of good governance. Institutionalization of PMS was also important, and this was expected to be achieved through widespread capacity building so as to reduce subjectivity in appraisals.

Save for recent developments such as TSA (Treasury Single Account), IPPIS (Integrated Personnel and Payroll Information System), and GIFMIS (Government Integrated Financial Management Information System), the Nigerian Public Service is still largely manual in its operations (Bureau of Public Service Reforms, 2014; Tooki, 2016). The former performance appraisal approach, Annual Performance Evaluation Report (APER) was regarded as not robust enough for a number of documented reasons including its unreliability and inadequacy as a service delivery improvement tool, the malady of inflated assessments (giving higher rating than deserved) commonly done to please the employee in order to avoid workplace skirmish, the omission of certain critical PMS components such as Institutional arrangements, framework, clear responsibilities and roles, performance contracting, KPIs, competencies assessment, and leadership development program, among other negative attributes (Dogarawa, 2011; OSGF, 2014; BPSR, 2014). Additionally, Financial Stewardship, seen as a crucial KPI in the Nigerian context, is sought to be tied to budgetary provision and timely release of funds, just as also emphasis is being placed on clarity of monitoring and evaluation across the Public Service spectrum. There are APER-related issues such as treating performance appraisal as a ritual rather than to making it part

of employee development process, and the recurring problem with staff unions who demand that annual increments should be granted automatically and that promotion should be time-bound. Some stakeholders would look at modern tools like the Balanced Scorecard as 'foreign' and 'complex' and would reject their application in the local environment upfront without giving an opportunity to have the fears tested objectively.

2.8 Research Gap

Many of the African countries surveyed in this paper have begun implementing performance management in one form or the other, with increasing emphasis on result-oriented performance management system that ICT can facilitate. It is instructive that a good number of them, Kenya, Uganda, Ghana, and Liberia, adopted the 5-point rating scale which also informed its adoption in the IT-based appraisal model proposal in this paper. There is an apparent dearth of research focused on exploring the feasibility ofnew technologies in addressing some of the 'frustrating' concerns in conducting proper performance appraisal, particularly in the context of public sector organizations in developing countries like Nigeria that are yet to embrace computerized performance appraisal system as some other countries, notably Kenya, have done.

Overall, the particular challenge of assigning reliable and consistent rating-appraisal to reflect actual performance of all categories of public workforce remains to a large extent un-resolved in the Nigerian context. Therefore, the present paper is an attempt in filling this vacuum. The central argument of the paper is that the computer technology presents good capability to automate performance standards and expectations as well as to accurately reflect desirable measures of individual and corporate performance.

It is against this overarching backdrop that this study was designed to explore and demonstrate the utility of computer technology in addressing some of the 'frustrating' concerns in conducting robust performance appraisal, particularly in the Nigerian context. Specifically, the study sought to test the computer spreadsheet package in setting employee goals, targets, or responsibilities and in evaluating typical cases in performance appraisal.

3. Methodology

The methodology adopted for the study is basically exploratory. Thus, guided by the recommendations of Kothari and Garg (2014), the study has been compiled through a mixture of literature survey and interviews with experts in the field. The emphasis is on the public service sector because, in the final analysis, it is the managers and employees of the civil service, who are responsible for ensuring effective implementation of government programs and policies, that cascade down to the citizenry including the private sector (Olaopa, 2015). The research design is justified by the need to obtain relevant evidence with optimum effort, time, and expenditure, having regard to the main purpose of the study which is purely formative. Online and offline sources for academic papers, conference proceedings, and websites and books dealing with various PMS across jurisdictions, particularly Africa, were searched and reviewed. Notably, the content analysis was based on credible secondary data extracted from sources such as the Commonwealth Secretariat (2010), Office of the Secretary to the Government of the Federation (OSGF) (2014), Bureau of Public Service Reforms (BPSR) (2014), among others. Further helpful insights were obtained through the author's participation at the Consultative and Validation Workshop on the institutionalization and strengthening of PMS of the Nigerian Federal Public Service organized by the Office of the Head of the Civil Service of the Federation and the European Commission Support to Federal Governance (SUFEGO) Programme held in Abuja, Nigeria, in March 2015, and attended by a wide cross-section of senior public sector officials and other stakeholders.

The IT proposal presented in this paper is based on the Windows Excel software, which has been around since 1985 and widely used with proven validity of analytical results in management studies; Windows is the most common computer operating system in the world (Spiegel & Stephens, 2011; Parasuraman, 2014; Frisby, 2014).

4. Results and Discussion

Assuming a SMART goal-setting environment on 5-point rating scale (Table 2), Appendices A_1 and B (great performer, having an overall rating of 84.7%) and A_2 and C (underperformer, having an overall rating of 23.2%) have been prepared to illustrate computerized appraisal models designed in such a way that the average supervisor can effectively appraise the performance of the employee to reflect all the applicable dimensions (KRAs) of Balanced Scorecard and their respective weights (Table 1); the number of KPIs and their specifications (depending on the PMS policy as regards Sector, Institution, and the particular status or position of employee being appraised, among other contextual considerations); and the employee's final score which, of course, will be based on actual performance against set targets. The model is expandable to include appraisal of core and non-core competencies, but it should be noted that the total (aggregate) value of the expected 'targets' should always be 1.00 or 100% (maximum score).

It has earlier been acknowledged that determining the final rating of the employee's performance is one of the most challenging aspects of the appraisal process (Grote, 2011; Rao, 2012). In this regard, the simple spread sheet model proposal in this paper resolves the problem for the supervisor by automatically computing the employee's rating after all the necessary inputs by the supervisor. Using the third column in the spread sheet for each of the above-indicated four BS dimensions (second column in Table 1), the supervisor inputs the employee's scores (ranging from 0 to 1 or 0 to 100%) respectively, strictly following the principles of evidence-based performance; the computer does the rest of the appraisal. The spread sheet-based model aggregates the rating in the "SCORE" columns against each key target of BS dimension.

For instance, under the application for 'Outstanding performer', the MS Excel spread sheet computes employee rating for Service Delivery as shown in Appendix A_1, namely, multiplying the employee's score by the BS weights = 41%, compared to 14% achieved by the 'Underperformer' in meeting service delivery targets (see Appendices A_2& C).

At the end of the appraisal year (or quarterly or half-yearly appraisal cycle as may be applicable), the final assessment is automatically detailed in the spread sheet "SUMMARY OF EMPLOYEE'S WEIGHTED SCORE" and "OVERALL PERFORMANCE EVALUATION (%)" as shown in the Appendices. TABLE 2 displays the final rating (85%: rating 5) for the hypothetical 'Outstanding performer' (Appendix B), as against the final rating of 23 percent (rating: 1) for the "under-performer" (Appendix C).

It is pertinent to stress that the supervisor should be guided by the performance weights dictated by the extant PMS policy; the supervisor should however ensure that the applied weights for each of the BS dimensions add-up to 1 or 100 percent, as indicated in the spreadsheet. The weights for the respective KPIs are evenly distributed (Appendix A_1 and Appendix A_2),

Table 1. Hypothetical Balanced Scorecard (BS) weights

BS Dimensions	*Description of Key Result Areas (KRAs) for Employee Performance Appraisal	Weights of the KRAs
I	Service Delivery	0.50
II	Financial Stewardship	0.20
III	Operational and Internal Processes	0.10
IV	Learning and Development	0.20
TOTAL		1.00

*Note: Experience or maturity-on-the-job has been added to KRAs in some jurisdictions

Table 2. Final rating ofthe hypothetical employee

BS Dimensions	Employee's score	*Weights	Rating (=Score × Weight)
Service Delivery	83%	50.0%	41.0%
Financial Stewardship	83%	20.0%	17.0%
Operational and Internal Processes	88%	10.0%	9.0%
Employee Learning and Development	90%	20.0%	18.0%
TOTAL		100.0%	85%

*Note: Performance weights vary as decided by policy, employee level or institution where the employee is domiciled

while the computerized rating is simply the employee's evidence-based score multiplied by the allotted weight (i.e. employee's nominal score × weight). The AVERAGE FUNCTION in the Excel package is activated to automatically provide employee mean scores for each KRA respectively. Weights are attached to reflect the relative importance attached to each goal or competency expectation (Table 1). In the Nigerian public service context, weights are determined by policy (OSGF, 2014). In the two sample cases (Appendices A_1, A_2, B & C), all KPIs carried equal weight but the four broad dimensions were weighted differently, with Service Delivery carrying the highest weight – half (0.50 or 50%) of the entire performance expectation from the employee, while operational processes were weighted least at 10%. As suggested in the literature based on strategic goal-setting principles (Grote, 2011), the model proposal has limited the number of KPIs in each BS dimension to just two to four, namely, S_1, S_2, S_3, S4… as KPIs for service delivery; F_1, F_2, F_3, … as KPIs for financial management; P_1, P_2, … as KPIs for processes; and LD_1, LD_2, … as KPIs for learning and development, all defined and scoped in line with the relevant performance management policy and guidelines.

In this regard, it is perhaps also apposite to stress that requisite computer inputs go beyond mere automation or mathematical calculation because HR implications of performance appraisal as summarized in Table 3. Thus, qualitative inputs by way of meaningful / helpful comments to the percentage scores are also imperative in a development-focused or people-centred appraisal setting. In carrying out the appraisal electronically, the supervisor is thus required to exercise intuition so as avoid common rating errors such as the bell curve effect, halo effect, similar-to-me effect, regency, effect, inherited effect, attractive effect, among others (Grote, 2011; Murthy, 2015). Above all, the supervisors rating sensibility should be fact-and-data-driven, meaning that all the computer entries and submissions must be evidence-based and justifiable.

Great performers, within 4-5 scales, are candidates for reward, while those within 2-3 scales need to improve or change for the better. Grote (2011) suggests that about 50-70 per cent people in an organization will fall into the 'average' class of 3, but that those who find themselves appraised to be in this class should not be put on the spot as mediocre performers. However, employees appraised into a scale 1 performance level have demonstrated completely unsatisfactory and unacceptable performance and should be shortlisted candidates (deadwoods/slackers) for closer employee-supervisor interaction, transfer, layoff, discharge, or early retirement.

Although the illustrations herein are hypothetical cases of a 'Great-performer' and an 'Under-performer', the spread sheet package is efficient enough to accurately reflect several other levels of employee performance. It is also important to bear in mind that the employee is being appraised individually, not in competition or comparison with another employee. In this sense,

Table 3. An Appraisal Model for Effective Performance Management System: 5-point Scale

Rating	Employee's Aggregate Score (Percentage)	Resultant Performance Level	Interpretation of Employee Performance Level
5	80 – 100%	Excellent	Exceptional performance: Employee exceeded the agreed targets and level of competency.
4	61 – 79%	Very Good	Employee fully met the assigned targets and level of competency: achieved all the agreed outputs; met all expectations.
3	50 – 60%	Good	Partially met expectation; achieved most, but not all the agreed outputs.
2	41 – 49%	Fair	Employee must improve: Performance is below expectation; achieved only minimal outputs; did not achieve most of the set targets / level of competency.
1	0 – 40%	Poor	Unacceptable performance:Employee has not achieved any of the agreed targets and without supporting rationale for not achieving them.

Source: Author's compilation (2015)

the supervisor should see himself in the similitude of a doctor whose preoccupation is to reach an outcome that will be beneficial to the patient, not necessarily to outperform another doctor. In this sense, deployment of IT can obviate the subjective and time-consuming tasks associated with the traditional appraisal system,

The major concerns arising from leveraging IT for effective performance appraisal in the Nigerian context include the following, among others:

i. There are some key aspects of job performance such as quality of work done that may be difficult to capture in a formal SMART goals-setting system. Yet, with little training, supervisors can acquire minimum capability to objectively evaluate the value of such so-called 'unquantifiable', qualitative jobs.
ii. The IT approach may not help us to determine how well the supervisor has done the performance appraisal (i.e. a 360^{o} assessment is not captured), but it has earlier been noted, employee assessment is deemed exogenous to intelligent performance appraisal (Kruger & Dunning, 1999; Lombardo & Eichinger, 2003).
iii. Phobia for the numeric and a general reluctance to embrace technology-enabled change in the workplace were noted, but it is argued that this remains a challenge-type that proper and regular staff training and re-orientation could easily address (Bhattacharya & Sengupta, 2009).

In all, this paper has to some extent reinforced the belief that it is good management practice tomake performance appraisal process as simple as possible. To this end, it has been shown that information technology tools such as the spreadsheet can help to simplify employee rating process without losing information quality at individual and corporate levels.

5. Conclusion

The paper reviewed the utility of spread sheet technology in addressing some of the concerns of managers in conducting performance appraisal, namely, clear goal-setting and quantitative evaluation of achievement or progress. Data were sourced from published materials and focal group discussions with selected stakeholders from across the country. It was shown that, already, a good number of countries in Sub-Saharan Africa have been implementing IT-based performance appraisal in one form or the other; instructively, Kenya and Uganda are noteworthy for their IT-compatible, result-oriented performance management system. The utility of a simple computer spreadsheet package in measuring employee performance based on a 5-level rating scale based on a set of four key result areas (Balanced Scorecard), was illustrated. Evidently, computer-aided performance appraisal is an exercise that substantially depends on setting clear goals against which individual and corporate performance can be measured respectively. The results from the present study underscores the tangible benefits of computational technologies in performance appraisal practice and are generally consistent with the expectations in the field (Kaplan & Norton, 2000;Malina & Selto, 2001; Niven, 2006;Dogarawa, 2011; Rao, 2012; BPSR, 2014; Olaopa, 2015; Roberge, 2015; Kumar *et al*. 2015).

Admittedly, performance appraisal process remains inherently a subjective process. Orientating and building executive capacity across the public service towards an objective IT-based performance measurement scales is a tough call in an overwhelming traditional African 'my brother's keeper' environment dominated by subjective evaluation and favoritism, but the challenges should not be allowed to jettison the use of new technologies in the development trajectory towards desirable optimization of human capital productiveness. The essence of this contribution is thus, not to turn performance appraisal over to mathematics or computer science, but to reinforce the need to leverage IT for optimal appraisal system as a key component of modern HRM. In all, the significance of the study lies in the potential to refine and improve on traditional approaches by leveraging the computer technology to make the whole performance evaluation process more efficient, straightforward, and result-oriented. Nevertheless, concerns over the involvement of 'machines' in managing human capital are acknowledged, and in this context, the following recommendations are made in the Nigerian context:

i. Performance appraisal should be more people-focused rather than explicitly linking it to the traditional reward/promotion expectancy.

ii. Technology-based appraisal approach proposed in this paper can be further tested in a pilot usage by a few set of Ministries, Departments, and Agencies (MDAs) of government for effectiveness before generalizing its application.
iii. Government should invest extensively in continuous capacity development especially in the area of Performance Appraisal Information System (PAIS); all supervisors / managers should be trained on how the whole appraisal process can be made less taxing through the application of computer technology.
iv. Notwithstanding the computer capability to analyze almost a limitless number of goals, appraisable goals should be limited to 3 or 4 major items that are challenging enough to impact on the public institution, geopolitical area or nation as a whole. Such goals should be linked to the national or respective MDAs' mandates, policy objectives and targets.

6. Scope for Future Research

First, some questions remain unanswered and therefore open to further enquiries. How truly measurable are employee's outputs and outcomes, and which of these two should attract premium in performance appraisal? What is the 'appropriate' rating scale, 4-scale, 5-scale, 7-scale, or should there be any scale at all? Second, IT-based appraisal in more jurisdictions than are provided in this paper, should be researched to enrich the literature and provide a more global perspective on the subject. Thus, subjecting the current exploratory findings to wider empirical investigations would continue to be an interesting research agenda.

7. Endnotes

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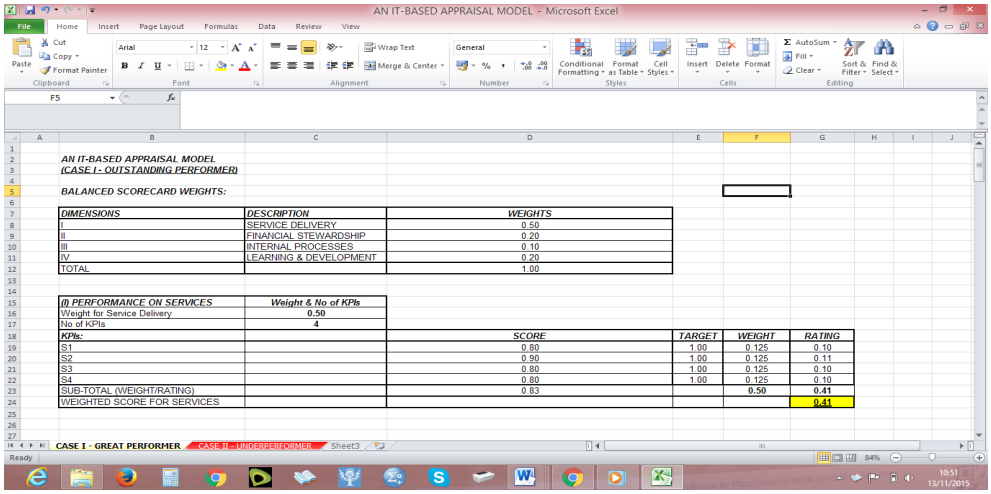
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Appendix A_1

Hypothetical employee rating in Service Delivery – 'Outstanding performer' case



AN IT-BASED APPRAISAL MODEL - Microsoft Excel

AN IT-BASED APPRAISAL MODEL
(CASE I - OUTSTANDING PERFORMER)

BALANCED SCORECARD WEIGHTS:

DIMENSIONS	DESCRIPTION	WEIGHTS
I	SERVICE DELIVERY	0.50
II	FINANCIAL STEWARDSHIP	0.20
III	INTERNAL PROCESSES	0.10
IV	LEARNING & DEVELOPMENT	0.20
TOTAL		1.00

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs
Weight for Service Delivery	0.50
No of KPIs	4

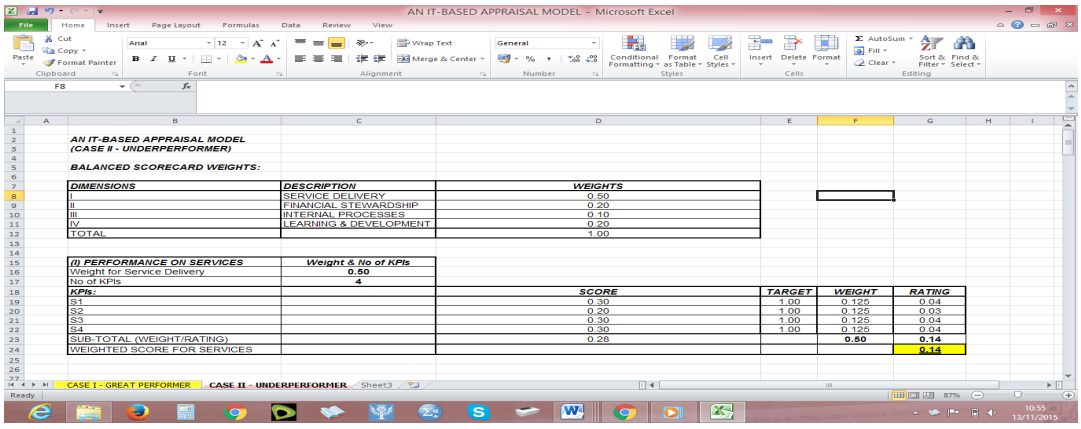
KPIs:	SCORE	TARGET	WEIGHT	RATING
S1	0.80	1.00	0.125	0.10
S2	0.90	1.00	0.125	0.11
S3	0.80	1.00	0.125	0.10
S4	0.80	1.00	0.125	0.10
SUB-TOTAL (WEIGHT/RATING)	0.83		0.50	0.41
WEIGHTED SCORE FOR SERVICES				0.41

CASE I - GREAT PERFORMER | CASE II - UNDERPERFORMER | Sheet3

*Note: Equality of KPIs' weights (0.125) is assumed but in practice, performance weights vary as decided by policy, employee level or institution where the employee is domiciled

Appendix A_2

Hypothetical employee rating in Service Delivery – 'Underperformer' case



AN IT-BASED APPRAISAL MODEL - Microsoft Excel

AN IT-BASED APPRAISAL MODEL
(CASE II - UNDERPERFORMER)

BALANCED SCORECARD WEIGHTS:

DIMENSIONS	DESCRIPTION	WEIGHTS
I	SERVICE DELIVERY	0.50
II	FINANCIAL STEWARDSHIP	0.20
III	INTERNAL PROCESSES	0.10
IV	LEARNING & DEVELOPMENT	0.20
TOTAL		1.00

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs
Weight for Service Delivery	0.50
No of KPIs	4

KPIs:	SCORE	TARGET	WEIGHT	RATING
S1	0.30	1.00	0.125	0.04
S2	0.20	1.00	0.125	0.03
S3	0.30	1.00	0.125	0.04
S4	0.30	1.00	0.125	0.04
SUB-TOTAL (WEIGHT/RATING)	0.28		0.50	0.14
WEIGHTED SCORE FOR SERVICES				0.14

CASE I - GREAT PERFORMER | CASE II - UNDERPERFORMER | Sheet3

*Note: Equality of KPIs' weights (0.125) is assumed but in practice, performance weights vary as decided by policy, employee level or institution where the employee is domiciled

Appendix B

A BALANCED SCORECARD-BASED APPRAISAL MODEL

(CASE I - OUTSTANDING PERFORMER)

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs
Weight for Service Delivery	0.50
No of KPIs	4

KPIs:		**SCORE**	**TARGET**	**WEIGHT**	**RATING**	
S1		0.80	1.00	0.13	0.10	
S2		0.90	1.00	0.13	0.11	
S3		0.80	1.00	0.13	0.10	
S4		0.80	1.00	0.13	0.10	
SUB-TOTAL (WEIGHT/RATING)		0.83		0.50	0.41	
WEIGHTED SCORE FOR SERVICES					0.41	

(II) FINANCIAL MANAGEMENT	**Weight & No of KPIs**
Weight for Financial Management	0.20
No of KPIs	3

KPIs:		SCORE	TARGET	WEIGHT	RATING	
F1		0.80	1.00	0.07	0.05	
F2		0.90	1.00	0.07	0.06	
F3		0.80	1.00	0.07	0.05	
SUB-TOTAL (WEIGHT/RATING)		0.83		0.20	0.17	
WEIGHTED SCORE FOR FINANCIAL					0.17	

(III) PERFORMANCE ON PROCESSES	**Weight & No of KPIs**
Weight for Processes	0.10
No of KPIs	2

KPIs:		SCORE	TARGET	WEIGHT	RATING	
P1		0.90	1.00	0.05	0.05	
P2		0.85	1.00	0.05	0.04	
SUB-TOTAL (WEIGHT/RATING)		0.88		0.10	0.09	
WEIGHTED SCORE FOR PROCESSES					0.09	

(IV) PERFORMANCE ON LEARNING	Weight & No of KPIs				
Weight for Learning	0.20				
No of KPIs	2				
KPIs:		SCORE	TARGET	WEIGHT	RATING
LD1		0.90	1.00	0.10	0.09
LD2		0.90	1.00	0.10	0.09
SUB-TOTAL (WEIGHT/RATING)		0.90		0.20	0.18
WEIGHTED SCORE FOR LEARNING					0.18

SUMMARY OF EMPLOYEE'S WEIGHTED SCORES

DIMENSIONS	DESCRIPTION	WEIGHTED SCORES
I	SERVICE DELIVERY	0.41
II	FINANCIAL STEWARDSHIP	0.17
III	PROCESSES	0.09
IV	LEARNING& DEVELOPMENT	0.18
TOTAL		0.85
OVERALL PERFORMANCE EVALUATION (%)		85.0

Appendix C

A BALANCED SCORECARD-BASED APPRAISAL MODEL

(CASE II -UNDERPERFORMER)

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs				
Weight for Service Delivery	0.50				
No of KPIs	4				
KPIs:		SCORE	TARGET	WEIGHT	RATING
S1		0.30	1.00	0.13	0.04
S2		0.20	1.00	0.13	0.03
S3		0.30	1.00	0.13	0.04
S4		0.30	1.00	0.13	0.04
SUB-TOTAL (WEIGHT/RATING)		0.28		0.50	0.14
WEIGHTED SCORE FOR SERVICES					0.14

(II) FINANCIAL PERFORMANCE	Weight & No of KPIs				
Weight for Financial Management	0.20				
No of KPIs	3				
KPIs:		**SCORE**	**TARGET**	**WEIGHT**	**RATING**
F1		0.25	1.00	0.07	0.02
F2		0.30	1.00	0.07	0.02
F3		0.30	1.00	0.07	0.02
SUB-TOTAL (WEIGHT/RATING)		0.28		0.20	0.06
WEIGHTED SCORE FOR FINANCIAL				0.06	

(III) PERFORMANCE ON PROCESSES	Weight & No of KPIs				
Weight for Processes	0.10				
No of KPIs	2				
KPIs:		**SCORE**	**TARGET**	**WEIGHT**	**RATING**
P1		0.10	1.00	0.05	0.01
P2		0.25	1.00	0.05	0.01
SUB-TOTAL (WEIGHT/RATING)		0.18		0.10	0.02
WEIGHTED SCORE FOR PROCESSES					0.02

(IV) PERFORMANCE ON LEARNING	Weight & No of KPIs				
Weight for Learning	0.20				
No of KPIs	2				
KPIs:		**SCORE**	**TARGET**	**WEIGHT**	**RATING**
LD1		0.00	1.00	0.10	0.00
LD2		0.20	1.00	0.10	0.02
SUB-TOTAL (WEIGHT/RATING)		0.10		0.20	0.02
WEIGHTED SCORE FOR LEARNING					0.02

SUMMARY OF EMPLOYEE'S WEIGHTED SCORES

DIMENSIONS	DESCRIPTION	WEIGHTED SCORES
I	SERVICE DELIVERY	0.14
II	FINANCIAL MANAGEMENT	0.06
III	PROCESSES	0.02
IV	LEARNING& DEVELOPMENT	0.02
TOTAL		0.23
OVERALL PERFORMANCE EVALUATION (%)		23.0

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