Original Research Article

BIOMETRICS AND BANK VERIFICATION NUMBER (BVN) TECHNOLOGY AND GHOST WORKERS IDENTIFICATION IN RIVERS STATE LOCAL GOVERNMENT AREAS.

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Abstract: - This study examined how the use of biometrics and BVN technology can be used to check menace of ghost worker syndrome and payroll fraud in the local government system in Rivers State. Primary data were collected via questionnaires. Chi-Squares and Kruskal Wallis statistical tools were employed to test hypotheses. Descriptive statistics were also used to show the diagrammatically the reactions of the respondents. It was concluded that the use of biometrics and BVN can help greatly in the eradication of payroll fraud and ghost workers in the local government payroll system. The study recommended the introduction of integrated personnel payroll and information system, prompt payment of staff, sanctioning of culprits, the use of BVN, compulsory payment of salaries through the banks, regular conduct of personnel audit and strong collaboration between the Accountant General's office and that of the Auditor General; in a bid in checking the menace.

Introduction: Globally, ghost worker fraud has been a serious problem facing many governments, Nigeria inclusive. For most of these countries, billions of tax payer dollars are pumped out annually from the government treasury through salary payments to non-existing employees who have fraudulently been listed in the payroll system. Some of these employees may include retired civil servants, the deceased or pure fictitious names. One major reason behind the rise in unqualified, non-eligible individuals is the absence of accountability which allows corrupted civil servants to manipulate government expenditures through the placement of ghost workers on the payroll. As more governments around the world try to figure out a solution to the ghost worker issue, many are adopting biometrics for identification of employees — a perfect tool for establishing accountability.

A ghost employee is someone who is recorded on the payroll system but who does not work for the organization. The ghost can be a real person

who knowingly or not is placed on the payroll, or a fictitious person invented by the fraudster. Ghost worker fraud is government theft.

"Biometric in a layman's perception could be defined as a measure of identity based on a physiological (fingerprint, face, eye, iris/retina) or behavioral (speech or signature) characteristics. It is an effective personal identification mechanism as it is unique to and embodied in each person and cannot be forgotten, lost, or stolen like other conventional identification methods. Biometric Identification mechanism requires devices such as camera, or scanner to capture and store the image or measurement of an individual's characteristics with the aid of computer hardware and software. Features extracted during biometric enrolment and acquisition stages are often transformed through a non-reversible process into templates in an effort to facilitate the storage and matching processes". (Nana 2016).

THE Bank Verification Number, BVN, is an initiative of the Central Bank of Nigeria, CBN, is using to strengthen the security of banking transactions and to ensure that fraudulent transactions are minimized, if not eliminated. BVN uses biometric technology to register customers in the financial system. It records these physical features which are unique to individuals – fingerprints and the face. The record would be used to identify the person afterwards. Once a person's biometrics have been recorded, and BVN issued the account would be accessed through BVN. The major objective of the initiative was to protect bank customers, reduce fraud and strengthen the Nigerian banking system.

The campaign against corruption and maladministration launched by the Nigerian Government recently has resulted in the removal of numerous ghosts from public service payrolls. Of the 312,000 public servants that were audited, 23,306 were found to have received their salary unlawfully or did not even exist. Some of them even received payments from several sources at the same time. 7% of the audited government personnel were not existing or were double-paid. These cases of fraud were identified with the help of the automatic biometric identification system (ABIS). Besides these achievements, the BVN system has now helped to find and eliminate the 23,306 non-existing public servants. This permits the country to achieve monthly savings of 10.5 million euros and is making a sustainable contribution to the positive development of the Nigerian state.

This study aimed at addressing the menace of ghost worker syndrome and payroll fraud in the Nigerian Local Government system via the use of Biometrics and BVN technology in Nigeria. The main thrust of this study was to critically examine the effect of ghost worker syndrome or payroll fraud in the Nigerian local government system. Specifically, the researchers examined the following: (i) the effect of ghost workers and payroll fraud on the performances of governments in Nigeria. (ii) The extent to which Biometrics and BVN technology can reduce or eliminate ghost workers and payroll fraud in the local government system and finally, recommendations were made on ways of tackling the menace in Nigeria

Literature Review

Conceptual Framework: The problem of ghost workers is that they are often the main source of corruption in many countries. It's not easy to eradicate ghost workers without establishing accountability and a sense of punctuality among employees. Biometric technology has proved to be the perfect tool to establish this and provide a cure to the chronic disease of "ghost worker fraud."

As governments across the world are increasingly adopting biometric technology, more and more success stories are unfolding that demonstrate its effectiveness, the effectiveness of the BVN policy in detecting fraudulent practices is indeed revolutionary in Nigeria.

Mohammad S. (2016) argued that studies showed that Kenyan government adopted biometric registration of employees and it

uncovered 12,500 'ghost workers' that failed to show up for a headcount. Only 160,012 employees out of the expected 172,522 showed up with their supporting papers. Liberia's successful switch to biometric identification for paying civil service employees saved the government $4 million annually. Malawi is saving $2 million a month after abandoning cash salary payments. India: Within a week of introducing the system, employee attendance has zoomed up to 96 per cent from the earlier 60-70 per cent in some states. In Nigeria, the government used fingerprint based biometric identification to eliminate an astonishing 43,000 ghost workers from the public payroll, for a savings of more than $75 million dollars. Of the 312,000 public servants that were audited, 23,306 were found to have received their salary unlawfully or did not even exist. Some of them even received payments from several sources at the same time. 7% of the audited government personnel were not existing or were double-paid. These cases of fraud were identified with the help of the automatic biometric identification system (ABIS). Besides these achievements, the BVN system has now helped to find and eliminate the 23,306 non-existing public servants. This permits the country to achieve monthly savings of 10.5 million euros and is making a sustainable contribution to the positive development of the Nigerian state. These successes prove the importance of implementing biometric technology to establish accountability and punctuality.

According to The Bureau of Public Service Reforms' "the quality of government payroll administration has vastly improved and an increasing number of MDAs are moving away from manual payroll administration. The MDAs have the necessary information for planning their personnel costs. IPPIS has reduced corruption by virtually eliminating ghost-worker syndrome where applied, thereby reducing the cost of governance. The Scheme has, from its launch in 2007 to December 2014, saved the government ₦185 billion (about US$1 billion), representing the difference between the money that government would have released to MDAs based on their estimated nominal roll submissions and the amount paid through the IPPIS platform. A breakdown of this shows that ₦416 million was saved in its first month of operation and ₦12 billion at the end of its three-year pilot phase. The scheme now covers 359 MDAs and has successfully enrolled 237,917 members of staff and weeded out 60,450 'ghost workers'. Furthermore, it reduced the red tape involved in manual payroll administration". The Bureau on their website identified other key achievements of IPPIS include:

1. Automated payroll system driven completely from a human resource information system;
2. Clean payroll data devoid of ghost workers, based on biometric capture of personnel;
3. Secure database for manpower planning and analysis;
4. Prompt payment of salaries to public servants;
5. Harmonization of nominal roles with payroll;
6. Establishment of the IPPIS Service-Wide Department in OHCSF to coordinate the implementation of the HR component of IPPIS and attend to various HR issues being forwarded by MDAs;
7. Review of the "Accounting system and HR Business Processes
8. Complete HR module has been finalized and implementation will be staggered by the MDAs.

THE Bank Verification Number, BVN, is an important step used to strengthen the security of banking transactions and to ensure that fraudulent transactions are minimized, if not eliminated. BVN uses biometric technology to register customers in the financial system. The major objectives of the initiative was to protect bank customers, reduce fraud and strengthen the Nigerian banking system. BVN has helped the banking system reduce situations where loan defaulters, for instance, move from one bank to the other and the banks extend new credits to

them, without knowing their history. Banks have been able to track transactions across all banks in Nigeria with more ease. Indeed, the BVN has been a great initiative that have reduced illegal banking transactions and improve national financial intelligence gathering no doubt. It also offers vast opportunities to protect customers, banks, and the entire financial system.

Empirical Evidence: According to the Association of Certified Fraud Examiners, in the U.S. it's the number one source of accounting fraud and employee theft. In Cameroon "ghost workers" are believed to cost the country $12 million every month. In Kenya, a 2014 audit found that at least $1m (£600,000) a month was lost in payments to "ghost workers". In Ghana 10 percent of the total amount spent on the salaries of both civil and public servants are lost every month through the insertion of ghost names on workers' payrolls and recent biometric auditing in the federal ministries of Nigeria, departments, and agencies (MDAs) revealed 43,000 non-existent workers on the government payroll.

How can biometric technology help eliminate ghost workers?

According to Mohammad Shabnewa (2016), the main advantages of using a biometric system is that it identifies a person by who the person is rather than what the person has, unlike most traditional authorization systems such as personal identification numbers (PINs), passwords, or ID cards. Unlike these solutions that rely on "what you have," biometric credentials such as a fingerprint, finger vein, and palm vein or iris image cannot be lost, forgotten, guessed, or easily cloned. He further opined that by utilizing a biometric identification system to eliminate ghost workers, governments and business organization employees can be uniquely identified, virtually eliminating duplicate registration in any form and eradicating ghost worker payroll fraud plus help establish accountability and punctuality among employees. He argued that some of the benefits of using biometric technology include: biometric identification eliminates fake employee registration into the payroll system; if biometric attendance is implemented, the chance of fake time sheets or buddy punching will reduce to nearly 0%; during salary and benefit distribution, biometric identification ensures accurate disbursement to the right employee; biometric identification creates concrete audit trails for employee punctuality which in turn improves service quality; with ghost workers eliminated, governments and organizations will start generating higher return on investments (ROI).

Methodology: The population of the study focused on accountants, internal auditors, administrative staff and treasury staff or employees of Rivers State local government authorities in Nigeria. The survey research design was employed. The researchers carried out their study in the Ogoni speaking local government areas of Rivers State including Khana, Gokana, Tai and Eleme. Primary data and secondary data were employed. While primary data were collected through questionnaires, the secondary data were mainly gotten from other research works, journals, books, newspapers and the internet. Judgmental sampling technique was employed. A total sample of 50 questionnaires were distributed out of which a total of 40 were returned. Descriptive analysis were carried while Kruskal-Wallis statistical test were used to test the hypotheses.

Data analysis and Result

H01: Biometrics and Bank Verification Numbers (BVN) will not significantly affect the performance of local governments in Rivers State.

H02: Biometrics and Bank Verification Numbers (BVN) will not significantly reduce ghost workers and payroll fraud in Local GovernmentsAreas in Rivers State.

Kruskal-Wallis Test on Biometrics and Bank Verification Numbers (BVN) will not affect the performance of local governments in Nigeria.

Decision Rule: Accept H0 if p-value>significant level, Reject H0 if p-value< significant level

<table>
<tr><td colspan="4">Table 1 Ranks</td></tr>
</table>

	Option	N	Mean Rank
	A	6	24.25
	SA	6	20.92
Responses	UD	6	12.92
	SD	6	8.00
	DA	6	11.42
	Total	30	

DA=Disagree

Table 2: Test of statistics

	Response
Chi-square	14.985
Df.	4
Asymp Sig.	0.005
a. Kruskal Wallis	
b. Grouping Variable: Option	

4.1.2 Chi-Square Test on Biometrics and Bank Verification Numbers (BVN) will not reduce ghost workers and payroll fraud in Local Government Areas in Rivers State.

Question items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
1.Reduce development	31	8	1	0	0	**40**
	11.33	17.00	4.83	3.00	3.00	
2.Increased cost of governance	5	22	4	6	3	**40**
	11.33	17.00	4.83	3.00	3.00	
3.Irregular payment	23	16	0	0	1	**40**
	11.33	17.00	4.83	3.00	3.00	
4.Encourages corruption	3	10	8	3	16	**40**
	11.33	17.00	4.83	3.00	3.00	
5.Reduces workers morale	2	21	7	7	3	**40**
	11.33	17.00	4.83	3.00	3.00	
6.BVN will reduced ghosts	4	25	9	2	0	**40**
	11.33	17.00	4.83	3.00	3.00	
Total	**68**	**102**	**29**	**18**	**23**	**240**

Table 3. Chi-Square Test Result.

Chi-sq=4.765+34.127+3.040+3.833+3.000+1.471+3.539+0.144+0.181+3.000+0.059+12.010+4.833+2.094+3.000+2.882+6.127+2.075+38.616+0.000+0.941+7.686+0.971+0.181+5.333+3.765+4.745+3.592+3.833+0.333=160.179

DF=20, P-VALUE=0.000

Figure 1: percentage distribution showing the effect or impact of ghost workers syndrome on the performance of local government authorities
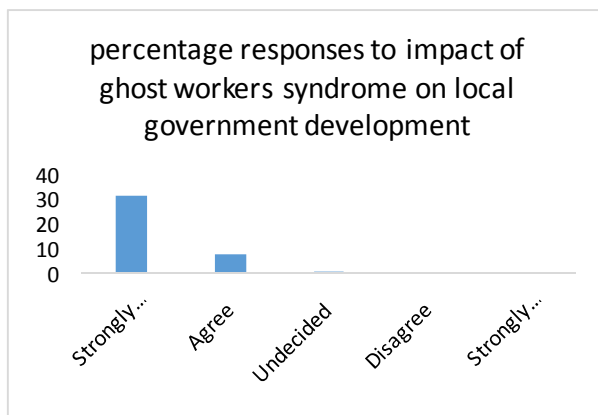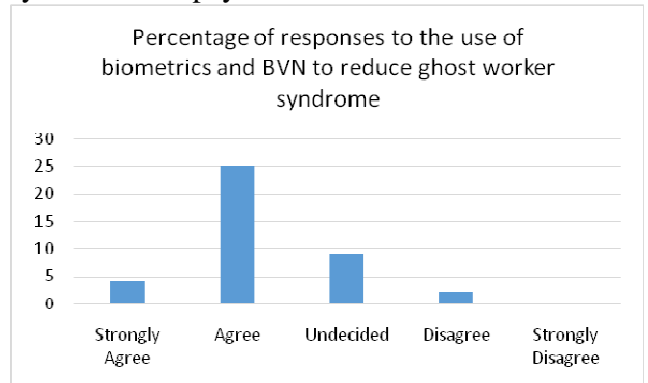
Figure 2: Percentage distribution showing responses that the use of biometrics and BVN technology can reduce the ghost workers syndrome and payroll fraud.

percentage responses to impact of ghost workers syndrome on local government development

Percentage of responses to the use of biometrics and BVN to reduce ghost worker syndrome

Discussion of findings: The result in Table 1 showed that most of the respondents agreed that ghost workers and payroll fraud will affect the financial performance of the local government system and by extension the development of the areas of jurisdiction. The Chi-square measure obtained is 160.18 and a p-value of 0.00 which falls on the rejection region of the hypothesis. That means that the null hypothesis was rejected since the p-value $=0.00<\alpha=.005$, assuming a 95% confidence level. Also, as displayed in Table 1, it was observed that most respondents agreed that payroll fraud will hinder development since the highest mean rank of 24.25 was obtained for agree.

From Table 3, most respondents agreed that the presence of ghost workers in on the payroll system of the local governments will hamper their development profile. This agrees with the bar chart in Figure 1.

Table 2 expressed that the biometrics and BVN technology can reduce payroll fraud and ghost worker syndrome since the Chi-square measure obtained was 14.99 and the corresponding p-value of 0.01 which falls on the rejection region of the hypothesis. Hence the null hypothesis was rejected since p-value$=0.01< \alpha=0.05$, assuming a 95% confidence interval. Figure 2 showed that majority of the respondents concurred to the fact that the use of biometrics and BVN technology will greatly reduce payroll fraud in the local government system in Nigeria if properly implemented.

Conclusions and Recommendations: The study examined the problem of payroll fraud and ghost workers in the Rivers State local government system. It x-rayed how the use of biometrics and Bank Verification Number technology (BVN) can reduce and even totally remove the ugly trend from the system. From the findings and result of the study, the researchers are of the opinion that the use of proper biometric and BVN technology will greatly reduce the ugly phenomenon.

Consequently, the following recommendations towards the eradication of ghost worker syndrome in Nigerian local government in Rivers State and Nigeria by extension:

1. Biometric Technology is a veritable tool for weeding payroll systems of ghost workers. It should therefore be incorporated in the automation processes of the local government system.
2. The use of BVN will help to fasten the process and should be adopted.
3. The government, especially the Local Government Service Commission in conjunction with the relevant offices such the Accountant General, Ministries of Finance, The office of the Auditor General, should be proactive in the fight against corruption at all levels and government offices.
4. Government should ensure that all persons found to be perpetrators of this evil should be made to face the law(no matter how highly placed) to serve as a deterrent to others.
5. There should be regular audit of payrolls and intermittent staff verification exercises, at least once a year.
6. Integrated personnel payroll and information system should be introduced to address the ghost worker syndrome.
7. Local government councils should be made fully autonomous. The idea of joint allocation with the states should be discouraged.
8. Workers of the local government should be promptly. This will make them to be well motivated and will also discourage fraud tendencies.

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