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Potential Effect of Integrated Payroll and Personnel Information System (IPPIS) Implementation on the Staff Payment System: An Insight into the Nigerian Health Sector

[1]Okoroiwu Kemdi Lugard, [2]Nwariaku Ihechiluru Samuel,
[3]Okafor Victor Ikechukwu (Ph.D), [4]Obianuju Charity Anosike

[1,2&4] University of Nigeria, Nsukka
[3]Michael Okpara University of Agriculture, Umudike

Abstract

The study assessed potential effect of integrated payroll and personnel information system (IPPIS) on the staff payment system in the Nigerian health sector. The study used questionnaire to generate its data. The population of the study comprised only three out of six (6) federal hospitals located in the south-East part of Nigeria, namely; University of Nigeria Teaching Hospital (UNTH), Enugu state with 4,500 staff, Federal Medical Centre, Owerri Imo state with 3,000 staff and Federal Medical Centre, Umuahia, Abia state with 3,500 staff, making it total population of 11,000. Two research objectives were employed in this study; (a) to ascertain the extent to which implementation of IPPIS has promoted regular payment of salaries (b)to determine the extent to which implementation of IPPIS has ensured total payroll inclusion of all staff. Two (2) hypotheses were tested in line with the objectives. The sample size was determined at 1,079 (367, 353 and 359) respectively for UNTH, FMC, Owerri and FMC, Umuahia by applying Taro Yamani. The data was analysed through descriptive and inferential statistics and Kruskal-Wallis was used at an alpha level of 0.05.While Duncan post-hoc test was used in cases of difference. The study revealed that IPPIS implementation in the Nigerian health sector has actually promoted regular and prompt payment of salary and ensured inclusion of all staff in the payroll system. The study recommended that the Federal Government of Nigeria should only implement IPPIS in its MDA's where IPPIS can effectively and efficiently work and also by putting into consideration the peculiarities of such MDA.

Introduction

Effective Economic Governance is crucial for attaining poverty reduction and enhancing economic growth in developing nations. The implementation of efficient public expenditure management and sound public financial management is crucial in ensuring the appropriate and fair allocation of limited national resources. According to Banerjee and Chau (2004), a public sector that is functioning effectively and efficiently is the only one capable of promoting growth, development, and accountability in public management. According to the observations made by Curristine, Lont, and Jourmard (2007), the public sector in many developing nations has consistently faced criticism due to its perceived inefficiencies, prevalence of corruption, and lack of transparency.

In recent years, various countries have implemented a range of public sector financial measures, commonly referred to as initiatives such as the Treasury Single Account (TSA), Government Integrated Financial and Management Information System (GIFMIS), and Integrated Payroll and Personnel Information System (IPPIS). These measures have been implemented with the aim of addressing different aspects of the public sector. Several developing countries, including Kenya, Ghana, Ethiopia, and Sierra Leone, have implemented various financial measures in their civil service reforms. Kenya has introduced the Integrated Personnel and Payroll Database (IPPD) in its public sector, Ghana has introduced the integrated financial management information system (IFMIS), Ethiopia and Tanzania have introduced the Expenditure Management and Control (EMC) as part of their civil service reform, and South Africa and Sierra Leone have also introduced the Financial Management Information System (FMIS) and Expenditure Control System (ECS) in their public sectors. The majority of public sector reforms in developing countries have been initiated through programmes that have received support from supranational institutions such as the International Monetary Fund (IMF), World Bank, and the European Union (EU) (World Bank, 2010). Nigeria, as a developing economy, is not the only country addressing the issue of inefficiency, corruption, and lack of accountability and transparency in its public sector. To address these problems, the country has implemented financial management tools such as IPPIS and TSA.

Corruption, waste, indiscipline, and a general absence of responsibility in government were among the most prevalent problems that the Nigerian government had to contend with before implementing these fiscal reforms. A lot of people in Nigeria are pessimistic about the country's ability to solve these issues since they seem so difficult. Some, though, are hopeful that the nation's vices can be eradicated with time, pointing to the country's deft handling of the Ebola virus in 2014 as evidence. This was due to a number of factors, one of which was the seriousness with which the threat was confronted.

Accordingly, the country must implement a comprehensive reform into its government if it wants to reposition its thriving public service sector to better serve its citizens. In view of this, the Bureau of Public Service Reforms (BPSR), overseen by the Office of the Secretary to the Government of the Federation, was a component of the Public Service Reforms programme that was implemented by the administrations of Nigeria from 1999 to 2014. None of the government's MDAs are exempt from the reforms. The current name for the government payroll and personnel information system, IPPIS, was also born out of the reform. A biometric system known as the integrated payroll and personnel information system is required for all government employees in order for them to get their paychecks directly into their bank accounts (Obaro, 2006).

IPPIS is one of the Federal Government of Nigeria's strategy implementations to digitalize the manual and file-based systems hindered by corruption, inefficiency, and inaccuracy in the number of personnel in Nigeria's public service (OAGF, 2013). According to Adedeji (2015), the goal of IPPIS is to reduce waste in payroll administration in the public sector. Mede (2016) further observed that the government's efforts to regenerate the civil service for efficient and effective service delivery, as well as the elimination of payroll fraud, resulted in the development and implementation of IPPIS. IPPIS, an Oracle Human Capital Management (HCM) solution, offers end-to-end management of all staff personnel and payroll management systems. The system conducts all gross-to-net computations, including tax deductions, union dues, and PFA.

The former minister of finance in Nigeria, Mrs. Kemi Adeosun, (2018), claims that the country saved ₦68bn in 2017 alone and ₦288bn in personnel costs between 2007 and 2017 thanks to the Integrated Payroll and Personnel Information System. Using the IPPIS platform, 511 federal ministries, departments, and agencies with 607,843 employees were confirmed by the minister. Government personnel continue to criticise IPPIS, despite the fact that it has led to enormous results. Therefore, by examining the Nigerian health sector, the study sought to ascertain the possible impact of implementing an integrated payroll and personnel information system on the staff payment system.

Statement of problem

Good governance is bolstered by responsible and effective administration of public funds, which is a key component of government accountability (Muhammed, 2014). Inadequacies in public accounting, spending control, auditing, and record keeping are often associated with a lack of financial accountability (Vani &Dorotinsky, 2008). A

system that guarantees efficient and effective financial management is necessary to guarantee financial accountability.

The Federal Government of Nigeria has long expressed worry about the high cost of its personnel, citing the fact that the system in place before to the installation of the Integrated Payroll and Personnel Information System made it difficult to plan, manage, and budget effectively. The former system allowed for non-existent employees, sometimes known as ghost workers in the civil service, as well as multiple payments of emoluments to one employee, which added to the cost of staff as a large recurrent expenditure (Lawanson&Babatunde, 2013).Capital expenditure is frequently denied the funding it requires due to high recurrent expenditure, particularly personnel costs, which account for up to 50% of recurrent expenditure. This has resulted in a problem determining accurate wage data for civil servants in Nigeria, so personnel budgets have always been estimated. In addition, the old system does not ensure security of personal information as employee's file documents could be tampered with. The system was not flexible to adjust staff payroll information as some staff name were usually omitted in the payroll. Furthermore, the system was marred with incomplete or partial payment of salaries as employees do not know when and the exact amount they will receive as monthly salaries. The implementation of IPPIS has reduced the issues of corruption, inefficiency and inadequacies in the Nigerian civil service system since its implementation (OAGF, 2013). Despite these great achievements of IPPIS, some employees have argued that its implementation is not the best financial management control system to eliminate payroll inadequacies in the public service. Their argument were based on irregular payment of salaries since the implementation of IPPIS, the irregular payment is in the sense that some staff in the same grade level and rank do not receive the same salary as it used to be before the IPPIS implementation .Further lamentation was that since the implementation of IPPIS in the health sector, unnecessary deductions without good explanations have become a norm.

Objective of the Study

1. To ascertain the extent to which implementation of IPPIS has promoted regular payment of salaries in the Nigerian health sector,
2. To determine the extent to which implementation of IPPIS has ensured total payroll inclusion of all staff in the Nigerian health sector.

Literature Review

The Federal Government of Nigeria (FGN) launched the Integrated Payroll and Personnel Information System (IPPIS) as an ICT initiative to enhance the efficacy and efficiency of payroll administration for its MDAs (OAGF, 2008). A worker's salary is defined as "the personal emolument paid to an employee of an organisation, usually monthly for services rendered at a predetermined rate of pay" under Part I of the Federal Republic of Nigeria Financial Regulations (2009) (1501). Particularly, as mentioned in part II (1518) of the financial regulation, all offices are required to use the standard payroll system, which, unless otherwise specified in part (1519) of the same regulation, must be designed to ensure that records are made in a single operation. Payroll management is the most important business application, according to Tan, Andrew, and Malcolm (2003). This is because it determines each employee's monthly base pay, bonuses, duties, national insurance, and pension contributions. Improved productivity can be achieved by implementing a payment system that encourages efficiency and discourages the phenomenon of "ghost workers" (Derek, Laura & Stephen, 2005). It is crucial for organisations to align their payment systems with their business objectives.

In a study carried out by Idris, Adaja and Audu (2015), the impacts of ghost workers syndrome were examined, along with how the instrumentality of IPPIS has tackled this threat in the public service. The researchers used basic statistical methods, frequency tables, the mean score, and the spearman rank order correlation methodology to analyse data that they gathered from primary and secondary sources. It is advised that all public service agencies use IPPIS to guarantee a robust economy through increased productivity, as the research found that ghost workers syndrome was very common before but has decreased significantly since its implementation. Additionally, Adongoi and Eyo (2016) examined payroll fraud in several Nigerian ministries, departments, and agencies (MDAS) as part of their investigation of civil service corruption in Bayelsa State. Payroll fraud is still a problem in the civil service of Bayelsa State, Nigeria, even though the government has made steps to prevent it. This is based on the study's findings, which were derived primarily from secondary sources and which used an expost-facto research design. In their 2011 study, Enakirerhi and Temileanalysed the Nigerian Integrated Payroll and Personnel Information System (IPPIS), taking a close look at its implementation difficulties, anticipated advantages, and future prospects. The literature review study found that IPPIS has several advantages, including providing accurate and reliable personnel information, helping to reduce or eliminate sharp practices and corruption, and facilitating modern scientific and accurate budgeting and forecasting.

In addition, Ikechukwu and Chikwe (2015) studied electronic human resource management (EHRM) and the "ghost workers" issue in Nigeria's Imo state's LGAs. Data for the study was gathered from 164 senior human resource management officials in sixteen different LGAs across Imo state who filled out and submitted five-point likert scale questionnaires. The research method was a descriptive survey. Using the Mann Whitney test (U) to analyse the data, we found that reducing personnel costs and implementing electronic human resources management systems like IPPIS can help fix the problems plaguing Nigeria's local government system. This will put LGAs in a better position to provide efficient and effective services to the general public. Additionally, owing to their varied characteristics and dimensions, ghost workers and associated payroll fraud have persisted in the Nigerian public sector, according to Oguzierem and Sofiri (2013). So, they investigated the effects of ghost workers, payroll fraud, and unlicensed employment on wage bills in Nigeria's Bayelsa State. Data for the study came from secondary sources, and the research method was ex post facto. Public officials in Bayelsa State's LGAs and RDAs were discovered to be perpetually working without authorization for a variety of reasons, which led to an inflated salary bill and the diversion of funds meant for LGA and RDA development.

Likewise, the study conducted by Iheduru and Amafule (2014) examined the utilisation of electronic accounting systems, with a specific focus on GIFMIS and IPPIS, as a means to address corruption within the public sector of Nigeria. Data was gathered from both primary and secondary sources in the study. The research findings indicate that the integration and/or implementation of a meticulously crafted electronic accounting information system, such as IPPIS and GIFMIS, inside the structure of the country's public sector activities has demonstrated its efficacy in addressing systemic corruption. The study proposed that the government at all levels adopt and execute a comprehensive e-accounting information system that encompasses various aspects, including budgeting (including formulation, approval, implementation, disbursement, etc.), payrolls (addressed by GIFMIS), pensions (addressed by IPPIS), and other related areas. In their study, Okoye, Okoye, and Amahalu (2015) examined the effects of the IPPIS on the recurrent expenditure of the federal government for Ministries, Departments, and Agencies (MDAs) in Nigeria. The study employed secondary data sources. The data indicates that the implementation of the IPPIS by the Federal Government of Nigeria resulted in a total savings of N38.094 billion off the estimated expenditure of seven (7) pilot Ministries, Departments, and Agencies (MDAs).

Theoretical Reviews

The Fraud Triangle Theory, developed by Sutherland and Cressey in 1978, outlines the three key elements that motivate individuals to commit fraud. Firstly, there is Pressure, which can be financial difficulties, addiction, or feelings of injustice. Secondly, Opportunity arises when there is a chance to commit fraud without being caught, often due to weak internal controls. Lastly, Rationalization involves justifying the unethical behavior in the individual's mind. When these three elements converge, individuals may be compelled to engage in fraudulent activities, highlighting the importance of addressing all aspects to prevent fraud effectively.

Institutional Theory, as formulated by Powell and DiMaggio in 1991, explores the establishment of social structures and norms as authoritative guidelines for behavior and practice. In the context of recent public accounting reforms in Nigeria, such as IPPIS, TSA, GIFMIS, and IPSAS, the theory questions whether these changes are driven by normative or regulatory practices. These reforms aim to enhance organizational efficiency, legitimacy, and standardization, promoting accountability and transparency. By adhering to these practices, organizations align with global standards, fostering homogeneity, efficiency, and accountability within Nigeria's government entities, as well as potentially on a global scale.

Public Finance Management Theory, as developed by Aman Khan and W. Bartley Hildreth in 2004, emphasizes effective management of financial resources in government for the benefit of citizens. This theory encompasses resource mobilization, program prioritization, budget procedures, resource efficiency, and control measures to mitigate risks. The implementation of IPPIS in 2007 aimed to curtail financial wastage in the public sector. Prior to this, inaccurate resource utilization led to higher recurrent expenditures at the expense of capital budgets and employment levels. With IPPIS, the government has made significant strides in minimizing resource wastage, improving financial control, and optimizing budget allocation for sustainable development.

Methodology

Research design

A research design is a blueprint that helps the researcher in gathering and collecting the data required for the study. The study used the survey research design method. The study included three Federal hospitals in South-East Nigeria: University of Nigeria Teaching Hospital Enugu (UNTH) with 4,500 employees, Federal Medical Centre Owerri with 3,000

employees, and Federal Medical Centre Umuahia with 3,500 employees. The total population is 11,000 (4,500 + 3,000 + 3,500).The Taro Yamane formula was used to calculate the sample size of 1,079. This formula was chosen because it is most effective when a population is known and produces a sample size that is proportionate to the population.

A questionnaire was utilised to collect data from hospital employees who had been in service for up to 10 years. The 10-year benchmark was chosen to capture just the staff who worked prior to and after the implementation of IPPIS in the health sector. IPPIS was adopted in the healthcare industry in 2019. The data was curated using Microsoft Excel 2013 (Microsoft Inc.), and descriptive and inferential statistical analysis were performed using the Statistical Package for Social Sciences (SPSS) version 20 software (Armonk, NY. IBM Corp.). The primary data were analysed using descriptive and inferential analysis, and the Kruskal-Wallis Test a significant statistical difference was found at the alpha level of 0.05.

Results

Table 1. Response on effect of IPPIS implementation on regular payment of salaries

Respondent Location	**SA**	**A**	**U**	**D**	**SD**	**Total**
	Freq. (%)	**Freq. (%)**	**Freq. (%)**	**Freq. (%)**	**Freq. (%)**	**Freq.**
UNTH	100(27.9)	250(69.6)	9 (2.5)	0 (0.0)	0 (0.0)	359
FMC Owerri	50 (14.3)	270(77.1)	8 (2.3)	22 (6.3)	0 (0.0)	350
FMC Umuahia	60 (20.0)	230(76.7)	5 (1.7)	5 (1.7)	0 (0.0)	300
Total	**210(20.7)**	**750(74.5)**	**22(2.2)**	**27(2.7)**	**0 (0.0)**	**1009**

Freq.: Frequency; SA: Strongly agree; A: Agree; U: Undecided; SD: Strongly disagree.
Source: Field Survey 2024.

The result showed that 74.5% (n=750) and 20.7% (n=210) of the respondents agreed and strongly agreed, respectively with the statement that IPPIS implementation aided regular payment of salaries. Approximately 2.2% (n=22) were undecided, while 2.7% (n=27) held contrary view.

Table 2: Response on effect of IPPIS implementation on payroll inclusion of all staff

Respondent Location	SA	A	U	D	SD	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq.
UNTH	80 (22.3)	230(64.1)	29 (8.1)	18 (5.0)	2 (0.6)	359
FMC Owerri	20 (5.7)	180(51.4)	10 (2.9)	100 (28.6)	40(11.4)	350
FMC Umuahia	50 (16.7)	200(66.7)	20 (6.7)	17 (5.7)	13 (4.3)	300
Total	**150(14.9)**	**610(60.7)**	**59 (5.9)**	**135(13.1)**	**55 (5.4)**	**1009**

Freq.: Frequency; SA: Strongly agree; A: Agree; U: Undecided; SD: Strongly disagree.
Source: Field Survey 2024

The result of the study showed that 60.7% (n=610) and 14.9% (n=150) of the respondents agreed and strongly agreed on the notion that IPPIS implementation has ensured payroll inclusion of all staff. However, 13.1% (n=135) and 5.4% (n=55) disagreed and strongly disagreed, respectively, while 5.8% (n=59) were undecided on their opinion.

Table 3: Summary of Kruskal-Wallis test on opinion of the respondents on effect of IPPIS implementation on regular payment of salary

Opinion	Mean rank	X^2	P-value	Decision
Strongly agree	11			
Agree	14			
Undecided	7			
Disagree	5			
Strongly disagree	2			
Within group analysis		12.600	0.013	Reject H_0

From the result generated, the calculated p-value (0.013) is less than the alpha value (0.05), hence null hypothesis was rejected and alternate hypothesis was accepted. Therefore, is concluded that the response of the respondents on the effect of IPPIS implementation on the regular payment of salary differ significantly. To examine the difference in the opinion of the improvement of regular salary pay IPPIS implementation, Duncan Multiple Range Post-Hoc test was used and the result presented in the table below:

Table 4: Duncan multiple comparison post hoc test of respondent's opinion on effect of IPPIS implementation on regular payment of salary.

Dependent variable	Opinion/category	Mean
	Strongly agree	350[a]
	Agree	1000[b]
Salary payment	Undecided	22[c]
	Disagree	18[c]
	Strongly disagree	0[c]

Means with the same superscript are not significantly different from each other at 0.05 alpha value. Source: Field Survey 2024.

The result of the Duncan Multiple range test showed a mean difference of those that strongly agreed and agreed is significantly different from the undecided, disagreed and strongly disagreed which were significantly lower. Hence, it is concluded that the higher proportion of "agree" and "strongly agree" observed in this study is statistically significant and not a product of chance.

Table 5: Summary of Kruskal-Wallis test on similarity of opinion of the respondents on effect of IPPIS implementation regarding regular payment of salary across the three health institutions

Location	Mean rank	Mean score	df	X^2	P-value	Decision
UNTH	7.80					
FMC Owerri	8.7					
FMC Umuahia	7.50					
Within group		278.00 ±	2	0.19	0.905	Accept

*=Standard deviation. Source: Field Survey 2024.

The result generated from the statistical analysis, the p-value (0.905) is greater than 0.05 hence, the null hypothesis is accepted. It can be concluded that there is no significant difference in the opinion pattern of the respondents in the three health institutions surveyed regarding the effect of IPPIS implementation on regular payment of salaries. Further post-hoc analysis was not carried out as there was no significant variations in the opinion of the three groups.

Table 6: Summary of Kruskal-Wallis test on opinion of the respondents on effect of IPPIS implementation on payroll inclusion of all staff

Opinion	Mean rank	X^2	P-value	Decision
Strongly agree	10.67			
Agree	14.00			
Undecided	6.00			
Disagree	6.33			
Strongly disagree	3.00			
Within group analysis		11.232	0.024	Reject H_o

Source: Field Survey 2024.

From the result obtained, the calculated p-value (0.024) is less than the alpha value (0.05), hence, the null hypothesis is rejected and the alternate hypothesis is accepted. This implies that there is disparity in the opinion of the respondents on inclusion of all in the payroll by IPPIS implementation. To determine the locus of the disparity on the response noted, Duncan Multiple comparison test was performed and the result presented in the table below:

Table 7: Duncan multiple comparison post hoc test of respondents opinion on effect of IPPIS implementation on payroll inclusion of all staff

Dependent variable	Opinion/category	Mean
	Strongly agree	250^{b}
	Agree	813.3^{c}
Payroll inclusion	Undecided	59^{a}
	Disagree	$90.0^{a,b}$
	Strongly disagree	18.3^{a}

Source: Field Survey 2024.

The Duncan Multiple Comparison result showed that those that "agreed" were significantly higher than the rest of the response followed by "strongly agreed". This implies that the majority of the response which was on the positive side (agreed and strongly agreed) was not a product of chance, but indeed statistically significant.

Table 8: Summary of Kruskal-Wallis test on the similarity of opinion of the respondents on effect of IPPIS implementation on payroll inclusion of all staff across the three health institutions

Location	Mean rank	Mean score	df	X^2	P-value	Decision
UNTH	7.80					
FMC Owerri	8.7					
FMC Umuahia	7.50					
Within group		278.00 ±	2	0.19	0.970	Accept

*=Standard deviation.

Source: Field Survey 2024.

From the result, the calculated p-value (0.970) is greater than the alpha value (0.05), hence, the null hypothesis is accepted. This means that the opinions of the respondents does not vary among the three institutions surveyed regarding effect of IPPIS implementation on payroll inclusion of staff in health sector in Nigeria.

Findings and conclusion

From the results and consequently the analysis of the results of this study, it could be concluded that; IPPIS implementation has immensely promoted regular payment of salaries and inclusion of all staff in the payroll. The study concludes that IPPIS implementation has greatly improved healthcare workers working conditions and should be encouraged, sustained and as well replicate in similar MDAs where it can effectively and efficiently work.

Recommendation

The study suggests that Nigerian government should strategically implement IPPIS in suitable MDAs, considering their unique needs, and promote awareness about its benefits and challenges. It also recommends enhancing ICT infrastructure in MDAs using IPPIS and ensuring the presence of skilled personnel to manage the IPPIS database efficiently.

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Appendix

Appendix A- Sample calculation

UNTH staff

N = 4,500

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{4500}{1 + 4500(0.05)^2}$$

$$n = \frac{4500}{12.25} = 367$$

FMC, Owerri staff

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{3000}{1 + 300(0.05)^2}$$

$$n = \frac{3000}{8.5} = 353$$

FMC, Umuahia staff

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{3500}{1 + 3500(0.05)^2}$$

$$n = \frac{3500}{9.75} = 359$$

Total sample size is 1,079

Appendix B- **Distribution of the respondents in the study**
Presentation of data

Location	**Population**	**No. of Q. shared**	**No. of Q. returned**	**% Response**	**% Attrition**
UNTH	4500	367	359	97.8	2.2
FMC Owerri	3000	353	350	99.2	0.8
FMC Umuahia	3500	359	300	83.6	16.4
Total	**11000**	**1079**	**1009**	**93.5**	**6.5**

Appendix C- **Demographic characteristics of the respondents**

Variable	UNTH	FMC Owerri	FMC Umuahia
	Frequency (%)	Frequency (%)	Frequency (%)
GENDER			
Male	129(35.9)	124 (35.5)	91 (30.3)
Female	230 (64.1)	226 (64.5)	209 (69.7)
AGE (Years			
20-25	28 (7.8)	21 (6.0)	12 (4.0)
26-30	46 (12.8)	68 (19.4)	15 (5.0)
31-35	79 (22.0)	46 (13.1)	69 (23.0)
36-40	95 (26.5)	88 (25.1)	86 (28.7)
≥ 40	111 (30.9)	127 (36.3)	118 (39.3)
EDU. QUALIF.			
WASCE	29 (8.1)	22 (6.3)	27 (9.0)
OND/NCE	68 (18.9)	53 (15.1)	61 (20.3)
BSc/B.A/MB.BS	223 (62.1)	235 (67.1)	178 (59.3)
MSc/Ph.D	22 (6.1)	28 ((8.0)	13 (4.3)
Others	17 (4.7)	12 (3.4)	21 (7.0)
YEARS OF SERVICE			
5-10	22 (6.1)	17 (4.9)	12 (4.0)
10-15	136 (37.9)	146 (41.7)	139 (46.3)
16-20	151 (42.1)	144 (41.1)	111 (37.0)
≥ 21	50 (13.9)	43 (12.3)	38 (12.7)

EDU: Educational; QUALIF: Qualification.