Data Article

Datasheet showing the impact of work environment on productivity in higher education institutions

Ifetayo Oluwafemi a, * Jesusetemi Oluwafemi b, Timothy O. Laseinde c, Bosede O. Awoyemi d, Afolabi Babatunde d

* Corresponding author.
E-mail address: ijloluwafemi@uj.ac.za (I. Oluwafemi).

A R T I C L E   I N F O

Article history:
Received 4 March 2019
Received in revised form 11 May 2019
Accepted 27 May 2019
Available online 5 June 2019

Keywords:
Productivity
Work environment
Nigerian universities
Government
Management

A B S T R A C T

This research paper provides datasheet on the summary of the investigation conducted to determine the effect of both internal and external environment on staff and students’ productivity in some selected Higher Education Institutions (HEIs) in Nigeria. It is generally acknowledged that the productivity of Nigerian HEIs is rather low, this survey examines the effect of the external environment on staff and student productivity in Nigerian HEIs, evaluates the effect of the internal environment on staff and student productivity in Nigerian HEIs, and determines the effect of psychosocial environment on staff and student productivity in Nigerian HEIs. Data were gathered based on conclusive research design. Stratified and convenience sampling techniques were adopted. The research instrument was confirmed to have all the necessary psychometric values considered appropriate for the research. Some descriptive statistical analyses were carried out to further clarify the data and provide the necessary platform for further analyses.

© 2019 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).
1. Data

The data presented below was obtained using a structured questionnaire. The distribution of the demographical characteristics of the respondents are presented in the bar charts below Figs. 1–6. The respondents involved in the survey were 192 male (55.33%) and 155 females (44.67%) as shown in Fig. 1. This reflects the gender distribution of the Nigerian labor force and students acquiring higher education, in which the males are larger in proportion. Fig. 2 shows 167 (48.13%) respondents were of the age 15–25, 80 (23.05%) were of age 26–36, while 95 (27.38%) fell within the range 37–59 and only 5 (1.44%) were of the range 60–65. Age 15–25 were mostly students, while some were interns working as staff, youth corps or newly employed staff. Ages 26–36 and 37–59 comprised mostly of staff with few students. Fig. 3 shows the frequency of single, married and divorced respondents, which were 211 (60.81%), 134 (38.62%) and 2 (0.58%) respectively. Fig. 4 shows the academical qualification of the respondents, 29 (8.36%) had NCE/OND, 152 (43.8%) were Undergraduates, 76 (21.9%) had their B.Sc./HND, 49 (14.12%) had their M.Sc., and 41 (11.82%) had their Ph.D. Fig. 5 shows the ranks of the respondents, Fig. 6 shows the working experience of the respondents involved in the survey, 137 (39.48%) had no working experience in the educational sector; 25 (7.2%) had less than 6 months of working experience; 43 (12.39%) had worked 6 months to a year; 91 (26.22%) had worked 2–10 years; 31 (8.93%) had 11–20 years of experience; and 20 (5.76%) had 21–30 years of working experience in the sector. The theoretical model for this research is shown in Fig. 7.

2. Research design

The research adopted a descriptive survey design in appraising the impact of work environment on the productivity of staff and students in Nigerian universities. The descriptive survey design approach was useful in surveying how work environment affects productivity of staff and students in the
Fig. 1. Gender distribution from selected universities, Source: Field work 2018.

Fig. 2. Representation of Distribution by age, Source: Field work 2018.

Fig. 3. Distribution by marital status from selected universities, Source: Field work 2018.

Fig. 4. Distribution by educational qualification from selected universities, Source: Field work 2018.
sampling area. Descriptive survey design method is an efficient approach of collecting data regarding characteristic of sample of a population, current practices, conditions or needs [2].

2.1. Target population

Target Population refers to the entire group of people, events, or things of interest that the researcher wishes to investigate. The research targeted staff and students of the six (6) selected universities in Nigeria as One hundred and thirteen thousand, three hundred and fifty-five (113,355), as shown in Table 1. To determine the State or Federal universities to be used for analysis, 3 schools were drawn at random from a box containing a list of the top one hundred (100) NUC approved universities in Nigeria, while for private universities, this paper examined different top-ranked faith-based universities (Christian, Islam and secular) by the NUC (see Tables 2–4).

2.2. Sampling and sampling technique

Random sampling technique was used to carefully observe the population and ensure that everyone was well represented. Taro Yamane (1967) statistical formula was applied in extracting the sample size from the population of One hundred and thirteen thousand, three hundred and fifty-five (113,355) respondents.

3. Data collection instruments and procedure

The researcher adopted the use of questionnaires in collecting data for this survey. The researcher used a drop and pick later system in the administering the questionnaire. A pilot survey was conducted
to ensure the questionnaire yield consistent results. This involves a pretesting survey of staff and students of Federal Polytechnic Ado-Ekiti, Ekiti, Nigeria, which is not included in the research sample in order to ensure enough precision. This ensured that the measure actually measures what is claimed. Also, the respondent was provided with consent form to sign before completing the questionnaire, which assured them that their responses will be held in the strictest confidence. Signing and submission of the consent form constitutes implied consent to take part in the survey and to use the data provided.

3.1. Data analysis technique

Information that was collected through the questionnaires was thoroughly examined and streamlined because of some omission errors in answering some of the questions. Data analysis entails

Table 1
Population of the survey.

| S/N | Schools                                      | Type                | No. Of Staff and Students |
|-----|----------------------------------------------|---------------------|---------------------------|
| 1   | Afe Babalola University, Ado-Ekiti, Ekiti    | Private university  | 8255                      |
| 2   | College of Education, Ikere Ekiti, Ekiti State | State University    | 9345                      |
| 3   | Al-Hikmah University, Ilorin                 | Private university  | 7499                      |
| 4   | Covenant University, Ota, Ogun State         | Private university  | 16,022                    |
| 5   | Ekiti State University, Ado-Ekiti            | State University    | 45,999                    |
| 6   | University of Ilorin, Ilorin, Nigeria        | Federal University  | 26,235                    |
|     | **TOTAL**                                    |                     | **113,355**               |

Source: Schools Website, 2018.
using categorization, tabulation, examination; these tools help in representing data information that will be gathered.

The procedures adopted for the analysis of the hypothesis used in this work are simple percentages and chi-square ($\chi^2$). The simple percentages were used in determining the number of respondents who either strongly agreed, agreed, strongly disagreed, disagreed or were undecided for each question, and this was presented in a tabular form. It was also used to determine the number of respondents that fell into each category (i.e., gender, marital status, age, education, rank and work experience), of which was presented using histogram. Chi-Square ($\chi^2$) analysis was carried out with the aid of statistical package for social sciences (SPSS) to analyze the data collected from questionnaires while Microsoft Excel was used to analyze the demography.

### 3.2. Research questions

**To What Extent Has the External Environment of Nigerian Universities Fostered Staff and Student Productivity?**

**What Degree of Influence the Internal Environment has on Staff and Student Productivity?**

### 3.3. Validity and reliability test

To ensure that the questionnaire captures what it is assumed to measure, the content validity method was used, and this method enables the questionnaire to be reviewed by professionals before its distribution it to the respondents. After certifying the correctness of the instrument, the reliability test was conducted using Cronbach’s alpha. This test was conducted in order to ensure the internal reliability of the measurement. As presented in Table 5, all the variables are reliable since their Cronbach’s alpha is greater than 0.60 as recommended by Al-alak and Tarabieh [3] (see Tables 6–14).

### Table 2
Sample size for each university.

| S/N | Schools                                      | Type          | Total population | Sample size |
|-----|----------------------------------------------|---------------|------------------|-------------|
| 1   | Afe Babalola University, Ado-Ekiti, Ekiti    | Private       | $N_i = 8255$     | $n_i = 29$  |
| 2   | College of Education, Ikere Ekiti, Ekiti     | State         | $N_i = 9345$     | $n_i = 32$  |
| 3   | University of Ilorin, Ilorin, Kwara State    | Private       | $N_i = 7499$     | $n_i = 26$  |
| 4   | Covenant University, Ota, Ogun State         | Private       | $N_i = 16,022$   | $n_i = 56$  |
| 5   | Ekiti State University, Ado-Ekiti            | State         | $N_i = 45,999$   | $n_i = 160$ |
| 6   | University of Ilorin, Ilorin, Nigeria        | Federal       | $N_i = 26,235$   | $n_i = 92$  |

**TOTAL**

$N_i = 113,355$ $n_i = 398$

Source: Field Survey, 2018.

### Table 3
Rated opinion (%) for Hypotheses One.

| S/N | Statements                                                                 | SA (%) | A (%) | SD (%) | D (%) | U (%) |
|-----|-----------------------------------------------------------------------------|--------|-------|--------|-------|-------|
| 1   | My institution is committed to ensuring health and physical well-being of members | 79 (22.8) | 193 (55.6) | 30 (8.6) | 33 (9.5) | 12 (3.5) |
| 2   | My institution has set structures to discourage a dirty, noisy and crowded environment | 74 (21.3) | 174 (50.1) | 37 (10.7) | 53 (15.3) | 9 (2.6) |
| 3   | There are adequate equipment and facilities that encourage learning and education | 65 (18.7) | 157 (45.2) | 39 (11.2) | 79 (22.8) | 7 (2.0) |
| 4   | The system provides adequate motivation to achieving set goals               | 69 (19.9) | 180 (51.9) | 34 (9.8) | 51 (14.7) | 13 (3.7) |
| 5   | Inadequate funding has had some negative effect on the quality of teaching and learning | 164 (47.3) | 122 (35.2) | 27 (7.8) | 29 (8.4) | 5 (1.4) |
| 6   | Government funding has been grossly inadequate                              | 142 (40.9) | 130 (37.5) | 20 (5.8) | 25 (7.2) | 30 (8.6) |

Source: Fieldwork, 2018.
Table 4
Rated opinion (%) for Hypotheses Two.

| S/N | Statements                                                                 | SA (%)  | A (%)  | SD (%) | D (%)  | U (%)  |
|-----|----------------------------------------------------------------------------|---------|--------|--------|--------|--------|
| 1   | Plagiarism in academic is described as a serious offence                   | 185 (53.3) | 119 (34.3) | 21 (6.1) | 7 (2.0) | 15 (4.3) |
| 2   | My institution has provisions to support staff and student development which is known to all members | 57 (16.4) | 147 (42.4) | 69 (19.9) | 47 (13.5) | 27 (7.8) |
| 3   | The facilities are functional and accessible to all                        | 41 (11.8) | 135 (38.9) | 72 (20.7) | 73 (21.0) | 26 (7.5) |
| 4   | There is adequate training on the use of these facilities                 | 28 (8.1) | 124 (35.7) | 80 (23.1) | 90 (25.9) | 25 (7.2) |
| 5   | Workload in the system is adequately distributed                          | 38 (11.0) | 145 (41.8) | 58 (16.7) | 74 (21.3) | 32 (9.2) |
| 6   | Clear path for career development is made known to everyone                | 38 (11.0) | 158 (45.5) | 61 (17.6) | 67 (19.3) | 23 (6.6) |

Source: Fieldwork, 2018.

Table 5
Validity and reliability test.

| S/N | Variables                                                                 | Cronbach’s Alpha | No of Item |
|-----|----------------------------------------------------------------------------|------------------|------------|
| 1   | To what extent has the external environment of Nigerian universities fostered staff and student productivity? | 0.853            | 6          |
| 2   | What degree of influence the internal environment has on staff and student productivity? | 0.922            | 6          |
| 3   | External work environment on staff and students’ productivity in Nigerian universities | 0.781            | 6          |
| 4   | Effect of internal work environment on staff and students’ productivity in Nigerian universities | 0.935            | 6          |
| 5   | Effect of psychosocial work environment on staff and students’ productivity in Nigerian universities | 0.845            | 6          |

Source: Fieldwork, 2018.

Table 6
Observed frequency table.

| Objectives                                                                 | SA | A | SD | D | U | Row total |
|---------------------------------------------------------------------------|----|---|----|---|---|-----------|
| My institution is committed to ensuring health and physical well-being of members | 79 | 193 | 30 | 33 | 12 | 347       |
| My institution has set structures to discourage a dirty, noisy and crowded environment | 74 | 174 | 37 | 53 | 9  | 347       |
| There are adequate equipment and facilities that encourage learning and education | 65 | 157 | 39 | 79 | 7  | 347       |
| The system provides adequate motivation to achieving set goals             | 69 | 180 | 34 | 51 | 13 | 347       |
| Inadequate funding has had some negative effect on the quality of teaching and learning | 164 | 122 | 27 | 29 | 5  | 347       |
| Government funding has been grossly inadequate                            | 142 | 130 | 20 | 25 | 30 | 347       |

Source: Fieldwork, 2018.

Table 7
Expected Count table.

| Objectives                                                                 | SA  | A   | SD  | D   | U   |       |
|---------------------------------------------------------------------------|-----|-----|-----|-----|-----|-------|
| 1                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |
| 2                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |
| 3                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |
| 4                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |
| 5                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |
| 6                                                                         | 101.1| 144.9| 39.3| 47.6| 14.1|       |

Source: Fieldwork, 2018.

4. Hypotheses testing

The hypotheses formulated for the research was tested using Chi-Square test ($\chi^2$) statistics.
### Table 8

| Tested items                        | No of observations | $\chi^2$-calculated | Degree of freedom $(r-1)$ $(c-1)$ | Critical value | Asymptotic significance (2-sided) | $\chi^2$-Tabulated | Remark       |
|-------------------------------------|--------------------|----------------------|----------------------------------|----------------|-----------------------------------|--------------------|--------------|
| **External environment and productivity** |                    |                      |                                  |                |                                   |                    |              |
|                                     | 4164               | 8.807E2^a            | 44                               | 0.05           | 0.000                             | 1.960              | Reject $H_{01}$ |

Source: Fieldwork, 2018.

### Table 9

Observed frequency table. Source: Fieldwork, 2018.

| Objectives                                                                 | SA  | A   | SD  | D   | U   | Row total |
|-----------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----------|
| Plagiarism in academic is described as a serious offence                     | 15  | 119 | 21  | 7   | 15  | 347       |
| My institution has provisions to support staff and student development which is known to all members | 57  | 147 | 69  | 47  | 27  | 347       |
| The facilities are functional and accessible to all                         | 41  | 135 | 72  | 73  | 26  | 347       |
| There is adequate training on the use of these facilities                   | 28  | 124 | 80  | 90  | 25  | 347       |
| Workload in the system is adequately distributed                            | 38  | 145 | 58  | 74  | 32  | 347       |
| Clear path for career development is made known to everyone                 | 38  | 158 | 61  | 67  | 23  | 347       |

### Table 10

Expected Count table.

| Objectives                                                                 | SA  | A   | SD  | D   | U   |
|-----------------------------------------------------------------------------|-----|-----|-----|-----|-----|
| 1                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|
| 2                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|
| 3                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|
| 4                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|
| 5                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|
| 6                                                                          | 55.2| 151.6| 55.0| 52.1| 33.1|

Source: Fieldwork, 2018.

### Table 11

$\chi^2$ calculated for Internal environment and staff and students’ productivity in Nigerian Universities.

| Tested items                        | No of observations | $\chi^2$-calculated | Degree of freedom $(r-1)$ $(c-1)$ | Critical value | Asymptotic significance (2-sided) | $\chi^2$-Tabulated | Remark       |
|-------------------------------------|--------------------|----------------------|----------------------------------|----------------|-----------------------------------|--------------------|--------------|
| **Internal environment and productivity** |                    |                      |                                  |                |                                   |                    |              |
|                                     | 4164               | 5.962E2^a            | 44                               | 0.05           | 0.000                             | 1.960              | Reject $H_{02}$ |

Source: Fieldwork, 2018.

### Table 12

Observed frequency table.

| Objectives                                                                 | SA  | A   | SD  | D   | U   | Row total |
|-----------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----------|
| Good relationship among colleagues’ aids performance                         | 190 | 133 | 13  | 5   | 6   | 347       |
| There must be controlled relationship between staff and students             | 128 | 188 | 18  | 2   | 11  | 347       |
| Controlled interpersonal relationship amongst staff and students improve learning and education | 129 | 174 | 24  | 5   | 15  | 347       |
| Social interaction between male and female members should be controlled      | 79  | 162 | 53  | 32  | 21  | 347       |
| Establishment of quality assurance team improves staff and student’s performance | 108 | 182 | 27  | 12  | 18  | 347       |
| Cash rewards motivate productivity                                           | 127 | 144 | 40  | 14  | 22  | 347       |

Source: Fieldwork, 2018.
4.1. Hypotheses one

**H0**: There is no significant relationship between the external environment and productivity in the Nigerian universities.

**H1**: There is a significant relationship between the external environment and productivity in the Nigerian universities.

Cross Tabulation for Testing the Effect of External Work Environment on Staff and Students' Productivity in Nigerian Universities.

2.6. Hypotheses two

**H0**: There is no significant relationship between the internal environment and productivity in the Nigerian universities.

**H1**: There is a significant relationship between the internal environment and productivity in the Nigerian universities.

Cross Tabulation for Testing the Effect of Internal Work Environment on Staff and Students’ Productivity in Nigerian Universities.

2.7. Hypotheses three

**H0**: There is no significant relationship between the psychosocial environment and productivity in the Nigerian universities.

**H1**: There is a significant relationship between the psychosocial environment and productivity in the Nigerian universities.

**Cross Tabulation for Testing the Effect of Psychosocial Work Environment on Staff and Students’ Productivity in Nigerian Universities.**

**Acknowledgments**

Special appreciation goes to the Head of Department of Management Science, Afe Babalola University Ado Ekiti, Ekiti State, Nigeria for his intellectual input on this research work and also, we would love to appreciate NRF with grant number TTK170513230840.
Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dib.2019.104090.

References

[1] O.O. Ogunnaike, B. Ayeni, B. Olorunyomi, M. Olokundun, O. Ayoade, T. Borishade, Data set on interactive service quality in higher education marketing, Data in brief 19 (2018) 1403–1409.
[2] Emil Chandran, Research Methods: A Quantitative Approach with Illustrations from Christian Ministries, Daystar University, 2004.
[3] B.A. Al-alak, S.A. Tarabieh, Gaining competitive advantage and organizational performance through customer orientation, innovation differentiation, and market differentiation, Int. J. Econ. Manag. Sci. 1 (5) (2011) 80–91.