Work Environment and Academic Staff Performance in Federal Polytechnics, South-West, Nigeria

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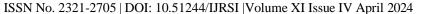
ABSTRACT

No entity operates in isolation but within an environment which can make or mar the performance of individuals in the entity. This study examined work environment and academic staff performance in Federal Polytechnics operating in South West, Nigeria. The study made use of survey designed which made it possible to have assessed thoughts, opinions, and feelings of participants through structured online closed ended questionnaire. 6 Federal Polytechnics with 2,358 academic staff total population was targeted for the study. However, 342 sample size was determined and proportional distributed based on the population. Data collected were analyzed with descriptive and inferential statistics. Findings revealed that there is significant difference in the research outputs of the federal polytechnics. However, there was no significant difference in the teaching effectiveness of academic staff in the federal polytechnics. Another finding reveals academic staff involvement in community service is significantly different. The hypotheses tested revealed that physical work environment contributes to academic staff performance, and non-physical work environment contributes academic staff performance. The study concludes that the physical work environments in the federal polytechnics requires improvements to enhance academic staff performance. The study recommends that academic staff, management, and government affiliated with these federal polytechnics should play their roles adequately to evolve highly competitive polytechnic system.

Key Words: Academic Staff, Performance, Environment, Polytechnic, Work environment,

INTRODUCTION

The Polytechnic is a major arm of Tertiary Educational Institutions (TEIs) saddled with the responsibilities of providing wide range of intermediate and higher-level technology and technologists which have manifested over the years through the provision of high quality of education around the world (National Board for Technical Education NBTE, 2022). However, insignificant progress has been observed in developing countries in which Nigeria is one (Aliyu & Kabiru, 2014). What is expected from the polytechnics in terms of breeding intellectual capacity, technological and economic transformation in Nigeria for instance appear to be far at sight as cutting-edge research and effective teaching are not witnessed (Ebeloku et al., 2014; Ugbomhe & Ogie, 2012). This suggest that stakeholders of the polytechnic have not gotten their priorities right. With reference to the mandate, a stakeholder of the polytechnic is the academic staff who have as their responsibilities to continuously research, teach and engage in community service to drive the mandate have been perceived not to have lived up to expectations, otherwise, the positive impact would have been felt in the nation.

In context, it is perceived that academic staff performance contributes largely to the mandate of the polytechnic. Therefore, research outputs, teaching effectiveness, and community service involvement of the academic staff are used as proxies of the dependent variable. These proxies are captured accordingly: Research outputs is viewed as intellectual publications in articles, chapter in book, book, and patents, among others that are aimed at solving a problem (Galadanci, Muaz & Mukhtar, 2016). Teaching effectiveness is determined by the level of competence displayed by an academic staff in an attempt at imparting knowledge in the students (Martínez-Garrido & Murillo, 2022). This entails the ability of the academic staff to ensure knowledge, skills and right attitude are transmitted to students on a subject while community service involvement as a measure of academic staff performance as well. The polytechnic and the host community are the community in this instance which refers to campus community and immediate local areas of the polytechnic.

Today, there is no polytechnic that is not interested in the three performance indicators of academic staff. With regards to the polytechnics owned by the federal government, the intentions are clear and constitute part of the criteria used to promote academic staff and rate each polytechnic performance. Government and her established board (National Board for Technical Education, NBTE), are not relenting in promoting how these performance indicators would be achieved and have continuously seek ways to address the issue of unimpressive performance of the polytechnic system. In the recent past, the academic staff have been challenged towards reaching their full performance potentials. However, the academic staff tends to be handicapped by some factors among which is the work environment (Oluwunmi & Gbarayeghe, 2022). This work environment represents the total sum of physical, psychological and emotional forces that make up surroundings in a setting (Adeyanju, 2022).

The peculiarity of academic work environment distinguishes it from other forms of work environment in terms of infrastructure, library (physical and electronic), electricity, internet, and serenity, among others (Aggarwal *et al*., 2023; Olanipon *et al.,* 2023). For instance, there are disheartening situations where two to four senior academic staff share one office. Also, incidents of erratic electricity supply, inconsistent internet, lack of efficient medical facility, absence of relaxation centers and staff quarters, among others have been reported (Mbachu & Unachukwu, 2022). With this lack of supportive academic work environment, aside individual efforts; performance of academic staff would not have been at all. It is imperative to change the narrative if the nation's polytechnics desire to compete favorably with their counterparts in developed climes. It is against this backdrop that the study examined work environment and academic staff performance in federal polytechnics operating in south-west, Nigeria.

LITERATURE REVIEW

Academic Staff Performance

Performance determines the level of entity's functionality as regards is actual output against expected output (Agada & Tofi, 2020). In this regard, individual's performance can be described as the extent to which their assigned tasks are accomplished (Manzoor, Wei & Asif, 2021). In educational institution like polytechnic, individuals can be staff with assigned tasks whilst his performance would be the extent to which assigned responsibilities are accomplished. By this, staff performance can be evaluated as excellent, good or bad in relations to assigned tasks accomplishment (Namutebi, 2019). The broad classification of staff in a polytechnic is academic staff and non-teaching staff. The academic staff which this study is interested in represents members of tertiary institutions of learning designated involved in research, teaching, and community service and ranges from lecturer's cadre to instructor's cadre (Aliyu & Kabiru, 2014).

In context, academic staff performance is the extent to which academic staff achieved assigned responsibilities such as cutting-edge research, teaching, and community service (Olanipon et al., 2023). To

determine the level of academic staff performance, these responsibilities have been set as key performance indicators in form of research outputs, teaching effectiveness, and community service involvement.

Academic Work Environment

The academic work environment represents a peculiar work setting with educational sector regulators requirements to make it one (Adeyanju, 2022; Oluwunmi & Gbarayeghe, 2022; Aboagye et al., 2021). This is because it must promote learning, research, teaching, and socialisation among others for all interested parties in the society. Therefore, it represents the totality of the surrounding in an educational facility like a polytechnic (Aboagye et al., 2021). Specifically, for the academic staff, it is an environment that must be conducive with all necessary tools and facilities to support and promote research and teaching (Adeyanju, 2022). Aside this, such environment must offer social, physical, psychological and emotional support to academic staff as well as safety and comfort. If not for any reason, extant studies (Aggarwal et al., 2023; Olanipon et al., 2023; Mgaiwa, 2021) have linked conducive work environment to employees' satisfaction and performance.

Theoretical Review

Three theories (Person-Environment Fit Theory, Workplace Theory and Lewin Field Theory) were explored in this review. The Person-Environment Fit Theory of Schneider (1987) was premised on the interaction between people and their surroundings. Of course, to how it determines the functionality of both which inferred the fitness the theory is about. This fitness in the view of Yu (2013), enhances interpersonal interactions and impact each other. For instance, human activities make or mar environment and in return, the environment create what human requires to survive and perform well. Therefore, a person's behavioral outcome is subject to the environment outlook. The work environment is one of such environment and human activities therein defines the outlook which in turn defines the activities of human being. Performance of staff in the polytechnic is assumed to be subject the environment that has been created. Although, this creation of environment is not in the hands of staff alone and that is why the workplace theory Herzberg identified two-factor (satisfier and dissatisfier) within work environment. According the Workplace theory, the environment plays significant role in driving staff satisfaction in work organizations like a polytechnic. It was established that conducive environment motivates employees to perform better (Thompson & Phua, 2012). Furthermore, Lewin's Field theory of (1951) identified person's conduct and character, environments and interaction of both as creation of situation that can be conducive, or toxic (Cherry, 2014). The theorist evaluated possible situations within environment as what will determine human activities. The environment represents both physical and non-physical factors which affect human disposition (Deutsch, 1954). These factors are forces that can propel individuals in workplace to get close to the achievement of their responsibilities. This study is therefore anchored on the Lewin's Field theory because it adequately explains the context of study. The work environment of a polytechnic can determine what the outcome of academic staff will look like as this will vary from time to time and in context, there are six polytechnics that are involved in this study making variations of work environment possible as well as variations of academic staff performance possible.

Empirical Review

Extant studies have explained some areas between work environment and employee performance in one way or the other (Olanipon et al., 2023; Adeyanju, 2022; Oluwunmi & Gbarayeghe, 2022). The study of Olanipon et al., (2023) which examined environment and employees' performance in Federal Polytechnic Ado-Ekiti considered workload, bodily chance, and cultural elements as determinants of employee performance. It was found that bodily dangers, cultural factors, workload, and the general paintings environment determines employees' overall performance. In a related study, Oluwunmi and Gbarayeghe (2022) looked at workers of Covenant University, Nigeria as regard their workplace layout and

environment. It was found that workplace layout offered was good influence overall performance of workers. Likewise, Premarathne's (2020) study on physical environment and employee performance revealed unfavorable work environment in garment sector and this have not affected employees' performance as performance improves from time to time.

In the study of Firmansyah (2020), work environment was examined against employees' commitment in Iranian agro firms. It was discovered that work environment is positively related to employees' commitment and performance. Furthermore, Hafeezi et al., (2019) examined work surroundings and behavioral environmental factors on employee productivity. The study was by survey method and it was found that work surroundings significantly contribute to employees' performance. The study of Adeyanju (2022) looked at an instance within work environment (relaxation activities) as correlates of academic staff productivity in Southwest Nigerian Universities. The study established that relaxation activities on campus promotes staff productiveness.

Early study of Khan et al., (2011) which investigated impact of workplace environment and infrastructure on employees' performance in Pakistan educational setting found positive impact of adequate infrastructure on employees' performance. Likewise, in the study of Ratti and Caudel (2016) which examined office space and employee's performance revealed positive relationship between adequate office and employee's performance. The study of Renne (2020) on physical environment setting and academician performance in Malaysia find out that physical environment features contributed to employee performance by 41% while the study of Kjelberg and Skoldstrom (2021) which was at the instance of ergonomics (physical work environment feature) and contented employees (performance driver) established impact.

METHODOLOGY

The study adopted a survey research design. The area of study is all the six federal polytechnics in southwest, Nigeria. Records of the establishments of these polytechnics as at December 2022 in sum shows the academic staff strength was 2358 (See Table 1). This served as the study's population.

The study discovered that the features of the population are similar which made sample workable as well as the fact that independent variable (Work environment) have common trend in each of these polytechnics. Therefore, a sample was drawn using Taro Yamane (1973) formula as calculated below:

n =   N / 1+Ne2

Where n = sample (?) size, N = population (2358) and e = desired error or margin (0.05)

$2358 / n = 1 + 2358(0.05)^2$

2358 / n = 1 + 2358(0.0025)

2358 / n = 1 + 5.895

2358/ n = 6.895

n = 342

Therefore, three hundred and forty-two (342) academic staff of these federal polytechnics were targeted in the survey. The 342-sample size was considered adequate to represent the entire population based on this formula. To double check the level of sample size adequacy, Owojori (2002) position was also adopted as he opined that a good sample will represent at least 10% of the total population. In this case, 342 represents

15% of the total population (See Table 1).

To determine the adequacy of the sample size, simple percentage was used

= Number of the sample size / Total number of the population   X 100

 342/ 2358   X 100

=   15%

The study therefore concludes that 342 sample size was adequate for the study. To have proportional distribution of the sample size in line with the target population of the study, the study made use of simple frequency calculation to determine this and this as well as other details were contained in Table 1.

Table 1: List of Federal Polytechnics in South-West, Nigeria selected for the study with Academic Staff Strength and Sample Size

S/N	State	Name of the Polytechnic	Academic Staff Strength	Sample Size Distribution	
1	Lagos	Yaba College of Technology	697	697/2358 X 342 =	**101**
2	Ogun	Federal Polytechnic, Ilaro	500	500/2358 X 342 =	**73**
3	Oyo	Federal Polytechnic, Ayeide	93	93/2358 X 342 =	**13**
4	Osun	Federal Polytechnic, Ede	384	384/2358 X 342 =	**56**
5	Ondo	Federal Polytechnic Ile Oluji	146	146/2358 X 342 =	**21**
6	Ekiti	Federal Polytechnic, Ado-Ekiti,	538	538/2358 X 342 =	**78**
Total			**2358**	**342**	

The survey made use of questionnaire to collect primary data. The research instrument was made of two sections: Section A: Respondents Personal Data while Section B: Work Environment and Academic Staff Performance on a five-item scale of Likert adopted from Herpen, Praag and Cool (2003), Dauda and Mohammed (2012), Mohammed and Abdullahi (2011), and Molefe (2012) with little modifications. The instrument was subjected to validity and reliability test. The reliability tests for research output, teaching effectiveness, community service involvement, physical work environment, and non-physical work environment were 0.78, 0.81, 0.77, 0.86 and 0.70 respectively while the Cronbach reliability alpha was 0.91.

Data collected were analyzed with descriptive and inferential statistics. The descriptive statistics (Chart, mean and standard deviation) were used to present the respondents personal data and other objectives of the study while inferential statistics (Regression, Correlation, ANOVA) were used to test for hypotheses. The IBM SPSS version 29 and Microsoft excel were used for the analysis of the data.

DATA ANALYSIS
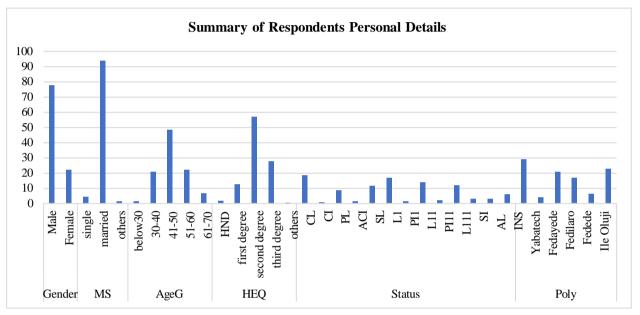
Descriptive Analysis of Respondents Personal Data

As against the projected sample size of 342 envisaged, 327 responses were found analyzable and the summary was presented in Figure 1. For the respondents' gender, 77.7% of the respondents were males while 22.3% of the respondents were females. This suggests that males were more involved in academics job than female at the polytechnic level. This could be because males are involved academics job at tertiary institution. Furthermore, Figure 1 presented the respondents' marital status and 4.6% were single, 93.9% were married while 1.5% were others. Based on this data, majority are married and would desire comfort at work. Also, respondents age group reveals that 1.5% were less than 30 years of age, 20.8% were between

30-40, 48.6% were between 41-50, 22.3% were between 51-60, while 6.7% were 61 year and above. On the highest educational qualification of respondents, 1.8% holds HND, 12.8% possessed first degree, 56.9% had second degree, 27.8 had third degree while 0.6% possessed others. Furthermore, employment status of respondents was captured, and all the positions were represented with the highest from Chief Lecturer (18.7%) and least Chief Instructor (0.9%). Lastly, respondents' polytechnics were captured and Yabatech (29.1%), Fed Ayede (4%), Fed Ilaro (20.8%), Fed Ede (16.8%), Fed Ile Oluji (6.4%), and Fed Ado (22.9%). When this level of participation is compared with the population of the academic staff in the polytechnics, it can be deduced that adequate participation was received and subsequently analysis will be reliable.

Figure 1: Respondents Personal Data

Source: Field Survey (2024)

Significant difference in the research outputs of the academic staff

To determine the level of significant differences in research outputs from the federal polytechnics, five proxies were used. Table 2 summarized the results and specifically, FedPoly Ado-Ekiti recorded the highest mean score on academic staff presence on electronic research platform 4.000(SD=1.390). On publication in high indexed journals, FedPoly Ile-Oluji took the lead with mean value 3.5824(SD=1.3645). For research award won, FedPoly Ayede had highest mean value of 3.231(SD=1.3634). Furthermore, FedPoly Ede recorded the highest mean value of 3.455(SD=1.5131) on collaborative publication with scholars from other polytechnics and lastly, on the presentation on research paper at international conference, FedPoly Ayede recorded the highest mean value 3.923(SD=1.1875). With these results, all the polytechnics were above 3.0 in each of the measures but FedPoly Ayede appears to have recorded higher feat in research outputs than others. With their respective grand mean scores 3.765(SD=1.3256), 2.859(SD=1.5562), 2.303(SD=1.4044), 3.278(SD=1.4920), and 3.523(SD=1.5164), there is no significant differences in research outputs. Therefore, no significant difference in the research outputs of the academic staff in the federal polytechnics.

Table 2: Report on Research Outputs						
NPoly		eRPlat	iIndJour	ResearchAw	PwOP	PintConf
Yabatech	Mean	3.747	2.779	2.421	3.316	3.558
	N	95	95	95	95	95
	Std. Deviation	1.2714	1.5654	1.4260	1.4311	1.5279

FedPoly Ayede	Mean	3.615	2.923	3.231		3.231	3.923
	N	13	13	13		13	13
	Std. Deviation	1.2609	1.4979	1.3634		1.7394	1.1875
FedPoly Ilaro	Mean	3.779	2.603	2.147		3.353	3.603
	N	68	68	68		68	68
	Std. Deviation	1.3587	1.5467	1.3633		1.4117	1.4776
FedPoly Ede	Mean	3.509	3.109	2.091		3.455	3.400
	N	55	55	55		55	55
	Std. Deviation	1.3591	1.5714	1.2805		1.5131	1.4732
FedPoly Ile-Oluji	Mean	3.714	3.524	2.619		3.286	3.810
	N	21	21	21		21	21
	Std. Deviation	1.1464	1.3645	1.5645		1.4541	1.2891
FedPoly Ado-Ekiti	Mean	4.000	2.813	2.200		3.040	3.347
	N	75	75	75		75	75
	Std. Deviation	1.3950	1.5742	1.4142		1.6061	1.6805
Total	Mean	3.765	2.859	2.303		3.278	3.523
	N	327	327	327		327	327
	Std. Deviation	1.3256	1.5562	1.4044		1.4920	1.5164

Source: SPSS Output (2024)

Significant difference in the teaching effectiveness of the academic staff

As regard the level of teaching effectiveness in the federal polytechnics, five proxies were used. Table 3 provided the synopsis of the results and FedPoly Ile-Oluji top with the highest value of 4.714(SD=.4629) on prompt attendance of classes. On satisfactory level of preparation for classes, FedPoly Ede recorded the highest mean value of 4.455(SD=.5025). On whether lecture delivery approach encourages student's active participation in classes, FedPoly Ayede had the highest mean value of 4.615(SD=.5064). Additionally, FedPoly Ilaro recorded the highest mean value of 4.103 (SD=1.1988) as regard lecturers stays in classes till the end of lecture time and lastly, FedPoly Ayede recorded highest mean value 4.231(SD=1.0919). These results suggest that the polytechnics academic staff were effective in their teaching responsibilities. With their respective grand mean scores 4.563(SD=.6972), 4.321(SD=.8089), 4.456(SD=.7696), 4.040(SD=1.2013), and 3.853 (SD=1.2172), there is no significant differences in the academic staff teaching effectiveness. Therefore, no significant difference in the teaching effectiveness of the academic staff in the federal polytechnics.

Table 3: Report on Teaching Effectiveness						
nPoly			Pclasses	ClasPreS	Lecdeli	Alottime	StuPerf_CA_Ex
Yabatech	Mean	4.526	4.263	4.347	4.095	3.737
	N	95	95	95	95	95
	Std. Deviation	.7122	.8898	.8845	1.0923	1.2047

FedPoly Ayede	Mean	4.615	4.385	4.615	3.231	4.231
	N	13	13	13	13	13
	Std. Deviation	.5064	.6504	.5064	1.5892	1.0919
FedPoly Ilaro	Mean	4.397	4.221	4.441	4.103	3.897
	N	68	68	68	68	68
	Std. Deviation	.8833	.9279	.7203	1.1988	1.3060
FedPoly Ede	Mean	4.673	4.455	4.527	4.091	3.891
	N	55	55	55	55	55
	Std. Deviation	.4735	.5025	.6900	1.1591	1.2274
FedPoly Ile-Oluji	Mean	4.714	4.381	4.429	3.952	3.762
	N	21	21	21	21	21
	Std. Deviation	.4629	.7400	.7464	1.3956	1.1360
FedPoly Ado-Ekiti	Mean	4.627	4.360	4.533	4.040	3.893
	N	75	75	75	75	75
	Std. Deviation	.6931	.8161	.7593	1.2241	1.2033
Total	Mean	4.563	4.321	4.456	4.040	3.853
	N	327	327	327	327	327
	Std. Deviation	.6972	.8089	.7696	1.2013	1.2172

Source: SPSS Output (2024)

Significant difference in Community Service Involvement of the academic staff

To determine the level of significant differences in academic staff involvement in community service in the federal polytechnics, five proxies were used. Table 4 summarized the results and academic staff from FedPoly Ile Oluji recorded the highest mean score of 3.333(SD=1.3540) on availability of time and ease of involvement in community service. Friendliness of the community was acknowledged with Yabatech on the lead with mean value 3.874(SD=.9137). On whether the polytechnics management promotes community services, FedPoly Ado Ekiti academic staff rated this with the highest mean value of 3.253(SD=1.3566). Furthermore, FedPoly Ayede recorded the highest mean value of 4.077(SD=.7596) on availability of projects for community service and lastly, on involvement in ongoing community service, FedPoly Ayede recorded the highest mean value 3.615(SD=1.0439). These results suggest that all the polytechnics academic staff were involved in community services. With their respective grand mean scores 2.960(SD=1.3951), 3.728(SD=1.0134), 3.107(SD=1.3399), 3.994(SD=.8722), and 3.119(SD=1.4211), there is no significant differences in community service involvement. Therefore, there is no significant difference in community service involvement of academic staff in the polytechnics.

Table 4: Report on Community Service Involvement						
nPoly			EasyCS	FridCom	PolyMgtCS	AvaiProCS	InvCS
Yabatech	Mean	2.947	3.874	3.147	4.063	2.989
	N	95	95	95	95	95
	Std. Deviation	1.4540	.9137	1.2880	.8355	1.4476
FedPoly Ayede	Mean	3.308	3.308	3.231	4.077	3.615

	N	13	13	13	13	13
	Std. Deviation	1.4936	1.3156	1.4233	.7596	1.0439
FedPoly Ilaro	Mean	2.691	3.618	3.044	3.853	3.088
	N	68	68	68	68	68
	Std. Deviation	1.2726	1.0514	1.3431	.9814	1.4008
FedPoly Ede	Mean	3.073	3.873	2.855	4.036	3.145
	N	55	55	55	55	55
	Std. Deviation	1.4511	.9241	1.4709	.8157	1.5082
FedPoly Ile-Oluji	Mean	3.333	3.524	3.190	4.048	3.143
	N	21	21	21	21	21
	Std. Deviation	1.3540	.9808	1.1233	.6690	1.3887
FedPoly Ado-Ekiti	Mean	2.973	3.667	3.253	3.973	3.200
	N	75	75	75	75	75
	Std. Deviation	1.3752	1.0946	1.3566	.9296	1.4237
Total	Mean	2.960	3.728	3.107	3.994	3.119
	N	327	327	327	327	327
	Std. Deviation	1.3951	1.0134	1.3399	.8722	1.4211

Source: SPSS Output (2024)

Significant difference in Physical Work Environment in the Polytechnics

FedPoly Ile-Oluji academic staff recorded the highest mean score on their inability to stay at work lately to work 3.571(SD=1.5353). On office illumination, FedPoly Ayede had the highest mean value 3.154(SD=1.5191). Considering the state of lecture rooms, FedPoly Ayede had highest mean value of 3.462(SD=1.1266). Furthermore, relaxation center availability and comfortability, FedPoly Ado-Ekiti recorded the highest mean value of 2.640 (SD=1.2152) and lastly, FedPoly Ile-Oluji recorded the highest mean value of 2.619(SD=1.3956) for infrastructures. Based on these results, all the polytechnics had measures of physical environment not impressive with their respective grand mean scores of 3.266(SD=1.4735), 2.688(SD=1.3815), 2.642(SD=1.3049), 2.554(SD=1.2493), and 2.364(SD=1.3126), there is no significant differences in the physical environment. Therefore, there is no significant difference in the physical environment of the polytechnics.

Table 5: Report on Physical Work Environment						
nPoly		Stayback	OficIllu	LectRom	RelaxCent	AdeInfra
Yabatech	Mean	3.253	2.663	2.716	2.632	2.568
	N	95	95	95	95	95
	Std. Deviation	1.3988	1.3015	1.2434	1.2887	1.3018
FedPoly Ayede	Mean	2.846	3.154	3.462	2.615	2.615
	N	13	13	13	13	13
	Std. Deviation	1.6756	1.5191	1.1266	1.3868	1.4456

FedPoly Ilaro	Mean	3.338	2.662	2.500	2.397	2.191
	N	68	68	68	68	68
	Std. Deviation	1.3995	1.4823	1.3876	1.2111	1.2843
FedPoly Ede	Mean	3.218	2.491	2.509	2.582	2.236
	N	55	55	55	55	55
	Std. Deviation	1.4617	1.3727	1.3454	1.3150	1.3328
FedPoly Ile-Oluji	Mean	3.571	2.667	2.143	2.286	2.619
	N	21	21	21	21	21
	Std. Deviation	1.5353	1.3904	1.1952	1.1019	1.3956
FedPoly Ado-Ekiti	Mean	3.240	2.813	2.773	2.640	2.240
	N	75	75	75	75	75
	Std. Deviation	1.6094	1.3823	1.2795	1.2152	1.2823
Total	Mean	3.266	2.688	2.642	2.554	2.364
	N	327	327	327	327	327
	Std. Deviation	1.4735	1.3815	1.3049	1.2493	1.3126

Source: SPSS Output (2024)

Significant difference in Non-Physical Work Environment in the Polytechnics

Table 6 summarized the results of the non-physical work environment and specifically, FedPoly Ayede recorded the highest mean score on cordial relationship among colleagues 4.308(SD=.6304). On superior mentorship of earlier academics, FedPoly Ede had the highest mean value 3.636(SD=.9499). The serenity of the polytechnic environ reveals that Yabatech had highest mean value of 3.347(SD=1.1464). Furthermore, on whether the environment provides psychological support, FedPoly Ayede recorded the highest mean value of 3.231(SD=1.1658) on the ground that is does averagely and lastly, on the existence of web of relationship between and among actors of the polytechnic without disturbing staff emotions, FedPoly Ado Ekiti recorded the highest mean value 3.453(SD=1.1542). With these results, all the polytechnics had less than 4.308 in the measures with their respective grand mean scores 4.159(SD=.7173), 3.379(SD=1.2272), 3.107(SD=1.2326), 2.914(SD=1.3242), and 3.141 (SD=1.2624). Therefore, there is no significant difference in the non-physical work environment of the federal polytechnics.

Table 6: Report on Non-Physical Work Environment						
nPoly		Cordial Rel	Mentor	Serene Env	Env Psy	Web Rel
Yabatech	Mean	4.179	3.568	3.347	2.905	3.179
	N	95	95	95	95	95
	Std. Deviation	.5255	1.1360	1.1464	1.3996	1.2375
FedPoly Ayede	Mean	4.308	3.385	2.615	3.231	2.769
	N	13	13	13	13	13
	Std. Deviation	.6304	1.5566	1.4456	1.1658	1.5359
FedPoly Ilaro	Mean	4.088	3.132	3.132	3.015	3.103
	N	68	68	68	68	68
	Std. Deviation	.7867	1.3483	1.1448	1.2031	1.2111

FedPoly Ede	Mean	4.182	3.636	2.855	2.818	2.873
	N	55	55	55	55	55
	Std. Deviation	.7224	.9499	1.4327	1.3890	1.3341
FedPoly Ile-Oluji	Mean	3.905	2.905	3.095	2.714	2.905
	N	21	21	21	21	21
	Std. Deviation	1.1360	1.5134	1.2209	1.3093	1.4108
FedPoly Ado-Ekiti	Mean	4.227	3.307	3.053	2.907	3.453
	N	75	75	75	75	75
	Std. Deviation	.7273	1.2078	1.1956	1.3373	1.1542
Total	Mean	4.159	3.379	3.107	2.914	3.141
	N	327	327	327	327	327
	Std. Deviation	.7173	1.2272	1.2326	1.3242	1.2624

Source: SPSS Output (2024)

Test of Hypotheses

Null Hypothesis I

There is no significant relationship between Physical Work environment and academic staff performance in Federal Polytechnics, South-West, Nigeria

Table 7: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.060[a]	.004	.001	1.3252	.004	1.193	1	325	.275

a. Predictors: (Constant), Physical workplace environment
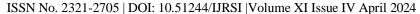
b. Dependent Variable: Academic staff performance

Source: Computed Data (2024)

From Table 7, the result of R value shows effect of physical work environment on academic staff performance. In this case the R square is .004 if expressed by a percentage it will be 4%. This means that the model explains 4% of the variance in the academic staff performance is by physical work environment, hence the remaining 96% accounts for other factors not considered in the model. Thus, null hypothesis is rejected. Therefore, physical workplace environment determines academic staff performance.

Null Hypothesis II

There is no significant relationship between Non-Physical Work environment and academic staff performance in Federal Polytechnics, South-West, Nigeria

Table 8: Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.053[a]	.003	.000	1.4922	2.120

a. Predictors: (Constant), Non-Physical Work Environment
b. Dependent Variable: Academic Staff Performance

Source: Computed Data (2024)

From Table 8, the result of R value shows effect of non-physical work environment on academic staff performance. In this case the R square is .003 if expressed by a percentage it will be 3%. This means that the model explains 3% of the variance in the academic staff performance is by non-physical work environment, hence the remaining 97% accounts for other factors not considered in the model. Thus, null hypothesis is rejected. Therefore, non-physical workplace environment determines academic staff performance.

Table 9: ANOVA[a]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2.047	1	2.047	.919	.338 b
Residual	723.629	325	2.227		
Total	725.676	326			
a. Dependent Variable: Academic Staff Performance					
b. Predictors: (Constant), Non-Physical Work Environment					

Source: Computed Data (2024)

As presented in Table 9, the ANOVA result shows the assessment of the statistical significance (0.338). The F-value for the model was obtained by dividing the regression mean square (2.047) by the residual mean square (2.227). The F-value for the model is equal to .919

Table 10: Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.819	.486		5.797	.000
Non-Physical Environment	.110	.115	.053	.959	.338
a. Dependent Variable: Academic staff Performance					

Source: Computed Data (2024)

Table 10 described the variable that is statistically significant and with exclusive contribution to the model obtainable under the sig column; it reveals the strength of the contributions of the independent variable (non-physical work environment) to the dependent variable (academic staff performance). It made a unique and statistically significant contribution to the model. Hence, the null hypothesis was rejected. Therefore, non-physical work environment has effects on academic staff performance in the federal polytechnics.

DISCUSSION OF FINDINGS

This study has revealed that research outputs of the federal polytechnics differ along the proxies examined. However, there is no significant differences in research outputs which is averagely on the grand mean scores

3.765, 2.859, 2.303, 3.278, and 3.523. Based on this, the academic staff research output needs to improve as respondents revealed that there is significant difference in proxies investigated in the federal polytechnics. This agrees with the study of Renne (2020) which established differences in the performance of academician in Malaysia on the ground of research outputs. Also, the study of Maisano et al., (2023) suggests that research outputs of academic staff differs because it is individual based.
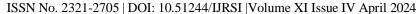
Furthermore, teaching effectiveness of the federal polytechnics differ along the proxies examined. However, there is no significant differences in the teaching effectiveness, which is averagely on the grand mean scores 4.563, 4.321, 4.456, 4.040, and 3.853. Based on this, the academic staff teaching effectiveness is impressive in the federal polytechnics. This result expanded the finding of Olanipon et al., (2023) which was on FedPoly Ado Ekiti only, as it established variation in staff teaching effectiveness. Also, community service involvement of academic staff in the federal polytechnics reveals that there is no significant difference in the community service involvement with an average grand mean scores 2.960, 3.728, 3.107, 3.994, and 3.119. Based on this, the academic staff community service involvement differs in the federal polytechnics.

On the second hand, the physical work environment of the federal polytechnics was examined, and it was revealed that there is significant difference in the physical work environment with grand mean scores of 3.266, 2.688, 2.642, 2.554, and 2.364. Based on this, the federal polytechnics differs in their physical work environment. This corroborates the study of Kjelberg and Skoldstrom (2021) admitted variations in physical work environment features in selected firms. Also, Oluwunmi and Gbarayeghe's (2022) finding agrees workplace layout and environment differs while the non-physical work environment of the federal polytechnics revealed that there is significant difference in the non-physical work environment with an average grand mean of 4.159, 3.379, 3.107, 2.914, and 3.141. Based on this, the federal polytechnics differs in their non-physical work environment. This corroborates the study of Adeyanju (2022) which established that social relationship between colleagues differs in academic settings.

Results from the tow hypotheses conducted shows that physical workplace environment determines academic staff performance. This finding corroborates the finding of Awoke (2019) which studied workers working conditions and performance in Ethiopian working setting which revealed that there is significant relationship between physical working environment and staff performance. Also, the study of Oluwunmi and Gbarayeghe's (2022) finding corroborates this study as it was established that workplace layout had a good influence overall performance of workers. On the contrary, Premarathne's (2020) study suggests that unfavorable work environment have not affected employees' performance while non-physical workplace environment determines academic staff performance. This corroborates the study of Adeyanju (2022) that established a nexus between relaxation activities and academic staff productivity.

CONCLUSION

Performance remains fundamental to any work setting including tertiary educational institutions in which the polytechnic is one. The driver of this performance is employee and academic staff in polytechnic plays vital role in determining the achievement of polytechnic performance yardsticks like research output, teaching effectiveness and community service. This study has revealed variations in the level of these performance measures of academic staff in federal polytechnics operating in south-west, Nigeria through work environment which was viewed from physical and non-physical perspectives. The physical work environment entails physical features of the polytechnic which includes infrastructures, office settings, and lighting, among others while the non-physical features represents colleagues' relationships, mentorship and psychological support, among others. It was concluded that these variables contribute to academic staff performance in the federal polytechnics studied but could be of better contribution if the work environment is more conducive.

RECOMMENDATIONS

- Federal government should invest more in the physical work environment of these polytechnics to promote a more conducive work environment.
- Also, adequate funding for research and publication will enhance research outputs from the polytechnics
- The management of the polytechnics are advised to always manage their respective polytechnics to achieve academic staff performance
- Also, management should promote serene non-physical work environment. This will go a long way to foster cordial relationships on their respective campuses.
- The academic staff should work as a team through collaborative research, co-teaching, mentoring and continuously develop themselves.
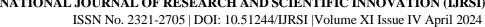
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