

DETERMINANTS OF WORKPLACE SATISFACTION IN SECRETARIAT BUILDINGS OF SELECTED UNIVERSITIES IN OSUN STATE

*** Ayodeji Olusola Ajayi¹, Aderonke Olufunmi Ajayi², Joy Kikelomo Adelabu³**

¹*Department of Urban and Regional Planning, Osun State University, Osogbo, Nigeria*

²*Department of Architecture, Obafemi Awolowo University, Ile-Ife,*

³*Department of Architecture, University of Ilorin, Nigeria*

***Corresponding Author: email: jyayodeji@gmail.com, 07033871651**

ABSTRACT

Evidence linking workspaces to improved productivity is accumulating. However, it is not clear what attributes of workspaces stimulate satisfaction. The study investigated factors affecting workers' satisfaction in secretariat buildings of selected universities in Osun State.

Primary and secondary data were used. Multi-stage sampling technique was adopted for the study. The study stratified universities in Osun State into federal, state and private universities. Obafemi Awolowo University, Ile-Ife (O.A.U), Osun State University, Osogbo, and Bowen University, Iwo were selected in each category of the stratified universities respectively. Preliminary survey of secretariat buildings in the selected universities revealed a total of 852 workstations. Systematic random sampling was used to select 426 workstations (i.e. 50% of total sampling frame) by sampling workers from every other office on each floor in each secretariat building of the selected universities until all the workstations were examined. Data were analyzed using descriptive and inferential statistics.

Results showed that 41.5% of respondents were female while 58.5% were male. It also established that 89.6% of workers had tertiary education and 80.9% had spent 2-5 years at their workplaces. Results of Principal Component Analysis revealed that workstation design, spatial features and building services, quality of social spaces, psycho-social factors, toilet location and size were the major factors affecting workplace satisfaction. The study concluded that design and organization of the workspaces were poor and inadequate, which induced low levels of workplace satisfaction at both individual and group levels in the secretariat buildings. The study suggested that workplace components in secretariat buildings should be thoughtfully designed around the workstation to improve workplace satisfaction.

Keywords: Office Typology, University Administrative Buildings, Workplace Features, Workplace Satisfaction, Spatial Characteristics.

1.0 INTRODUCTION

Researchers in the built environment have examined comprehensively the concept of workers' satisfaction with their working environment (Danielsson, 2010; Nellie and Nicholson, 2008; Oommen, Knowles and Zhao, 2008; Thompson and Jonas, 2008; Camille and Alle, 2007). This suggests that workplace satisfaction is not a new trend in environment-and-behaviour studies. Nevertheless, this concept is always topical to researchers because of the depth of insight gained and benefits to users that emanate from buildings being studied.

The evaluation of these perceptions indicates workers' satisfaction; evaluation in this sense includes two essential elements: the functional characteristics of the space that lend themselves to measurement and the qualities of the space that cause users to consider it satisfactory or unsatisfactory (Vischer, 2008).

Danielson (2010) opined that workplace satisfaction examines workers' appraisal of all aspects of the building, ranging from the physical arrangement (individual workstations, group workstations, furniture, and office typology), through organisation culture (status, self-identity, privacy, personal control, territoriality, supervision, communication and social spaces), to ambient environmental factors (temperature, air quality, lighting, window, noise and colour).

Workplace satisfaction can also be described as a rational assessment of the perceived performance or quality of the various elements of the work environment, compared to expectations about those attributes and the response to that evaluation. In view of this, workplace satisfaction is a systematic and objective way of appraising building (workplace) performance via the evaluation of occupied facilities (Thompson and Jonas, 2008). A typical secretariat worker needs a workplace that will knit together personal workstation, team space, work lounge, meeting spaces and social spaces for interaction and conveniences. Workstation in this study refers to an area in a workplace (office building) assigned to a worker, usually equipped with basic furniture like chairs, desk, storage cabinets, computer and printer. The workplace, simply defined, is a space allocated to a worker in an office environment. This space is usually physically arranged (or designed) to create an enabling environment for workers to perform defined tasks set by an establishment to achieve a set aim and objectives. Organisations differ in their management and work styles; therefore, different spatial configurations are needed to support these activities (Hammed, 2009).

The implication of this is that workplaces found in organisations should be custom-made for workers. The physical configuration of the workplace, according to Danielsson (2010), sets the condition for the activities performed in the office. Although the architectural design does not, by itself, determine the behaviour and well-being of workers, it has an impact through its aesthetics, functional and social implications on the social arena of the organization and group constellations, that is, on interaction and cooperation among workers (Danielsson, 2010). It is important to point out that researchers accede to the multi-dimensional nature of the workplace, because of its physical, environmental and psycho-social aspects (Thompson and Jonas, 2009; Oommen *et al*, 2008 and Vischer, 2006).

Research on the multi-disciplinary themes and complex nature of workplace satisfaction, shows that relationships exist between workplace satisfaction, attitude to work and productivity (Arnold, 2007; Vischer, 2007). Numerous research studies have shown that workplace design is a major contributing factor to how satisfied and motivated workers are, how well they perform individually and how they perform as a group (Miller, 2007). A considerable number of research works reveal workers' satisfaction with reference to specific workplace features. These include lighting, ventilation, workstation design and other factors like ergonomic furniture. Findings show that workplace-satisfaction have a positive influence on employee's health and, consequently, on productivity (Humphreys, 2005). Office design affects the way in which staff work, and influences workers' satisfaction with their offices. According to the American Society of Interior Designers (ASID, 1999) the physical workplace design is one of the top three factors which affect performance and satisfaction. However, most research work on workspace satisfaction

have been carried out in the United States, Europe and other developed countries. It remains unclear if these findings are easily adaptable to developing economies like Nigeria.

An average Nigerian secretariat worker spends 8 hours at the workplace daily. Given the importance of the work environment, particularly in administrative/secretariat buildings of universities, understanding workers' satisfaction with specific workplace features and attributes, could help in improving workplace comfort and satisfaction. University administrators need to be properly informed and guided on the fact that staff motivation and productivity do not only depend on improved welfare package, but also on the work environment. Moreover, workplace environment of secretariat building typologies in Nigerian universities have not been adequately examined. It is also important to know the types of workplace attributes that stimulate workers' satisfaction. It is against this background that this study investigates workplace satisfaction in secretariat buildings in some selected Nigerian universities in particular.

2.0 LITERATURE REVIEW

Usually, the workplace is physically designed to meet workers' psychological, functional and environmental needs which assist in performing duties or tasks effectively. The proposition that workers' commitment, motivation and effectiveness are related to workplace-satisfaction is well rooted in literature (Vischer, 2008; Schneider, 2007 and Arnold, 2007). Workers satisfaction with their work environment is therefore vital to their health, comfort, performance, interaction and productivity. Humphreys (2005) noted that workplace satisfaction is needed to understand the perception of the users, identify their needs, wants, requests, hopes, and to lower the gap between what the provider thought the users wanted and what the users actually want. In addition, Brill and Weidemann (2001) cited in Andrew, Nellie and Nicholson (2008) examined two important design determinants of workplace satisfaction and productivity: distraction-free workspace, and opportunities for learning-laden informal interaction. Camille and Alle (2007) reported that 54% of office employees surveyed are worried often by noise, especially nearby conversation. Arnold (2004) examined the effects of light, and good air quality; the study concludes that an airy office could create 15% work-boost. The importance of the physical environment in contributing to workplace satisfaction was examined by (Vischer, 2007). The result suggests that hostile workers could emerge from unsatisfactory workspaces.

Owing to the composite nature of the workplace, as expected, scholars in the built environment and environmental psychology fields have studied various aspects of this subject to understand its complexity along with the vast influences on workers' satisfaction, productivity and health.

Andrew *et al* (2008), sum up the state of research and relevant literature on the complex nature of the workplace into five sub-themes; these are: changing patterns of work and workplaces; influence of office space on human performance and productivity; workers' communication; collaboration and interaction; influence of office space on employee health and comfort and role of space in workers' satisfaction.

Office environments have traditionally been defined either by spatial organisation or by work organization. Danielsson (2007) analyzes office environments based on their unique combinations of architectural and functional features. The most dominant architectural

feature is the spatial organisation of an environment. The functional features are based on the actual work taking place in the office. The identified office types in contemporary office design should be construed as prototypes (Danielsson, 2007). They are as follows: the cell-office, the shared-room office, open-plan office and more flexible office design.

Due to the complex nature of the workplace, there are multiple influences on workplace satisfaction. Usually, there is interplay among environmental, psychosocial and physical factors of the workplace; therefore, it is difficult to state a set of variables as determinants of workers' satisfaction. Office type or typology is one of the physical factors that influence workplace satisfaction. Workers, depending on their status, work in different office-types. Researchers identify seven types of offices in literature: cell, combi, flexi, open plan; the small open-plan, medium open-plan, larger open-plan and shared room office (Danielson, 2007; O'neil, 2008; Salama and Courtney, 2008). Generally, office typology can be open- or closed-plan. The closed plan is more preferred by workers because of its peculiar features like privacy, territorial control, low noise level, low distraction and stress levels. Cell offices generally lead to high workplace-satisfaction (Sundstrom *et al* 1994; Bill and Weiderman, 2001; Carsia, 2002). For the individual, one of the most important aspects of the workplace is the workstation. Feeling toward the workplace and the building where people work is highly influenced by the feeling towards the immediate workspace and to what level specific environmental attributes are available to them (Marans and Spreckelmeyer, 1992 in Danielsson, 2010). On the contrary, open plans are more beneficial to managers than workers; increased collaboration and enhanced communication are major benefits to the organisation. However, managers will have to deal with low level of productivity in the open spaces when the personal spaces of workers are not protected. Consequently, the ratio of closed to open plan areas in the workplace should be carefully planned to take advantage of both typologies to increase workers' satisfaction.

Another factor that impact workplace satisfaction is the office environment. Workplace satisfaction stimulates workers' performance, comfort and psychology. The immediate environmental factors have either positive or negative impact on workers. Thermal comfort is the most cited environmental factor for workers' dissatisfaction (Danielson, 2010). Satisfaction levels of workers drop off when the environment is too hot or cold. The variations in temperature in the workplace are dependent on the architectural solution given by the designer of such an office. Thompson and Jonas (2008) conclude that the ideal temperature for a specific office-based activity may not be ideal for another activity; the authors further assert that workers are more resilient than is imagined and can cope adequately with a range of temperatures. Temperature can be controlled by active and passive design solutions to induce workplace-satisfaction.

In addition, air quality has been found to have a direct effect on workplace satisfaction. Arnold (2004) found that an airy office will create 15% work boost. The indoor air quality is determined to a large extent, by the building ventilation system, occupants and equipment. Poor air-quality can reduce concentration and work efficiency, leading to symptoms like headaches, drowsiness or eye, nose or throat irritation. Thompson and Jonas (2008) say approximately one third of all employee sick leaves is due to symptoms caused by poor air quality.

Daylighting and lighting are also significant elements in the office environment. Light significantly influences our perception of the environment and the architectural design. Sim (2002) in Salama and Courtney (2008) finds a direct positive correlation between satisfaction about view and productivity. It is found that people in windowless offices feel more restricted and tense. The influence of the quality of light on workplace satisfaction is immense because many lighting variables are considered to have an impact on productivity: illuminance, glare, reflection, task contrast, size and complexity of visual stimuli (Thompson and Jonas, 2008).

Kwallek (2002) reports on how colour within the work environment affects occupants' well-being, productivity and performance. Findings assert that colour scheme alone may impact mood; surprisingly, mood and productivity are not related to each other, positive mood characteristics do not lead to higher productivity. The results indicate that individual characteristics should be examined more closely to understand the impact of various colours on individuals' experience.

The psychosocial factors in the workplace comprise privacy, territoriality, interaction, personal control and supervision. The interplay among these factors determines workplace-satisfaction and productivity at individual, team and organisational levels.

The definitions of privacy include the idea of control over social contact and access to information seclusion, withdrawal, and avoidance of interaction and one's essence of being on display (O'Neil, 1998 cited in Rashid and Zimring, 2005). However, privacy is better understood as having three main functions: first, it ensures personal autonomy; second, it provides an emotional outlet; and third, it allows self-evaluation, synthesis of information, and decision-making.

Territory is usually understood as a physical and bounded space, but it often extends to the abstract domains of ideas in the case of humans. Though defense is the key element of territoriality, it is possible that some territories are never challenged; and even when the rights to a territory is challenged, the response of a person or group may vary depending on its degree of association with the territory (Rashid and Zimring, 2005). Personal factors, such as sex, personality, intelligence, and competence (physical and mental) may have effects on one's perception of territoriality.

Control is direct or indirect influence by an individual or a group over the resources of other individuals or groups including their space, ideas, pace and content of work. Supervision, on the other hand, is direct control in the form of critical watching and directing. Rashid and Zimring (2005), in the conclusion of their submission state that lack of control over the immediate environment can be an important source of psychological and physiological strain in workplaces.

2.1 Measuring workplace satisfaction

Buildings basically have six phases in their life-cycle; these are: strategic planning, programming, design, construction, occupancy and adaptive reuse or recycling (Preiser and Vischer, 2005). The multi-dimensional attributes of the workplace and their influences on workers can only be evaluated at the occupancy stage of the office. This implies that only

usage of the workplace(s) can determine whether workers will be satisfied or dissatisfied with their working environment.

Most researchers in the built environment use the methodology of Post Occupancy Evaluation (POE) and Building Performance Evaluation (BPE) to evaluate user satisfaction with various aspects of a building (Preiser and Vischer, 2005; Preiser and Schramm, 2002). POE as defined by Preiser and Vischer (2005) is the act of evaluating buildings in a systematic and rigorous manner, after they have been built and occupied for some time. It addresses the needs, goals and activities of the users' and organisation using a facility, including maintenance, building operations and design related questions. Users' needs that arise out of users' interaction with a range of settings in the building environment are redefined as performance levels. Vischer (2005) states the priority levels of the user-needs as follows: health, safety and security performance (technical), functional, efficiency and workflow performance (functional) and psychological, socio-cultural and aesthetic performance (behavioural). Post Occupancy Evaluation gives insights into occupants' satisfaction level, by taking into consideration expected performance of workplace at the inception of the project and comparing it with actual performance of the building. Indicators used in POE and BPE include indices related to organisation and occupant performance, workers' satisfaction and productivity, as well as measures of building performance which may include lighting levels, acoustic levels, adequacy of space, spatial relationships (Preiser and Schramm, 2002). Results generated from POE are used as feedback for professionals and policy-makers in order to improve the quality of the evaluated building and similar projects in the future.

3.0 RESEARCH METHODS

This paper focused on secretariat buildings of some selected universities in Osun State. Multi-stage sampling technique was adopted for the study. The study stratified universities in Osun State into federal, state and private universities. The nature of this research requires data that cut across these identified strata. A preliminary survey method was used to select three universities out of the seven domiciled and fully operational universities in the State. Obafemi Awolowo University, Ile- Ife (O.A.U), was selected based on the fact that it is the oldest and the only Federal government-owned university, Osun State University, Osogbo, was selected because it is the only State-owned university; and Bowen University, Iwo, because it is the oldest privately-owned university. The population for this research was senior and junior administrative staff in secretariat buildings at Obafemi Awolowo University, Ile- Ife (O.A.U), Osun State University, (UniOsun) Osogbo and Bowen University, Iwo. The University Hall Extension, the Central Administrative Building and the Central Administrative Building Complex were selected respectively, from each university. It is important to state that the University Hall Extension at O.A.U was selected instead of the main University Hall, because most of the spaces in the latter are meeting rooms, whereas the Extension houses most of the administrative staff of the university. The sampling frame for this study was based on the total number of workstations in the selected secretariat buildings of these universities. Investigation of the three secretariat buildings in the selected universities revealed a total of 852 workstations, which constituted the sampling frame. From this, systematic random sampling was used to select a sample-size of 426 workstations (i.e. 50% of total sampling frame) by sampling workers from

every other office on each floor in each secretariat building of the selected universities until all the workstations were examined.

Primary data was obtained through observation and administration of a structured questionnaire and semi-structured interviews of the workers. The questionnaire elicited data on the socio-economic characteristics of the staff in the secretariat buildings of the selected universities; spatial characteristics of the selected secretariat buildings; and factors affecting workers' satisfaction. Secondary data sources included architectural floor plans, layout plans, staff profile of selected universities, published materials from journal articles, gazettes and other government publications as well as the internet. The extracted information from Works and Physical Planning Departments and Corporate Affairs Units of the selected universities were used to identify and describe the locations of the selected facilities used in the study. The sampling procedure was also guided by these documents.

3.1 Data analysis

Frequency and percentage tables, cross tabulation, and Principal Component Analysis with (varimax rotation) was used to investigate factors affecting workplace satisfaction in the selected universities in Osun State.

4.0 DISCUSSION OF RESULTS

4.1 Workers' socio-economic characteristics

Workers' socio-economic characteristics are presented in Table I. Results show that 41.5% of the respondents were female while 58.5% were male. The study established that most of the workers had tertiary education (89.6%). The significance of education in a study of this nature cannot be overstated. Results also show that 49.2% of workers in the study area were between 31-40 years, while the minimum duration of occupancy was 1 year. From the analysis, majority of the workers (80.9%) had spent 2-5 years at their workplaces; thus, their level of perception and assessment of their work environments can be considered important and of high reliability.

Table I: Workers' socio-economic characteristics

Gender	OAU Freq(%)	UniOsun Freq(%)	Bowen Freq(%)	Total Freq(%)
Male	126(32.6)	65 (16.8)	35 (9.1)	226(58.5)
Female	95 (24.7)	44 (11.4)	21 (5.4)	160(41.5)
Total	221(57.3)	109(28.2)	56(14.5)	386 (100)
Educational Status				
Primary	1 (.3)	- (0)	- (0)	1 (.3)
Secondary	30 (8.2)	5 (1.3)	2 (0.5)	37 (10.2)
Tertiary	184(50.5)	94 (25.8)	48(13.1)	326(89.6)
Total	215(59.1)	99 (27.2)	50(13.7)	364 (100)
Age				
Below 20	3 (0.8)	2 (0.5)	2 (0.5)	7 (1.8)

21- 30	51 (13.2)	32 (8.2)	14 (3.6)	97 (25.1)
31-40	100(25.9)	60 (15.5)	30 (7.8)	190(49.2)
41- 50	50 (12.9)	14 (3.6)	7 (1.8)	71 (18.4)
Duration of occupancy (yrs.)				
1	33 (8.6)	21 (5.4)	18 (4.7)	72 (18.8)
2-3	85 (22.3)	32 (8.3)	8 (2.0)	125(32.7)
4-5	99 (25.9)	56 (14.6)	29 (7.6)	184(48.2)
5 and above	1 (0.3)	- (0)	0 (0)	1 (0.3)
Total	218(57.1)	109(28.5)	55(14.4)	382 (100)

4.2 Workers' office typology

Previous studies reveal that office typology is the most cited workplace feature influencing satisfaction (Danielson, 2007, O'neil, 2008; Salama and Courtney, 2008). Generally, office typology can be open-or-closed plan, with specific spatial organisations to support workplace activities in either typology.

Table II: Types of office accommodation (office typology)

Office typology	OAU Freq (%)	UniOsun Freq (%)	Bowen Freq (%)	Total Freq (%)
Cell office	9 (2.3)	4 (1.0)	3 (0.7)	16 (4.2)
Shared office	64 (16.6)	49 (12.7)	16 (4.1)	129 (33.5)
Medium open plan	1 (0.3)	0 (-)	1 (0.3)	2 (0.6)
Total	220 (57.1)	110 (28.6)	55 (14.3)	385 (100)

The results as presented in table II above show that most of the workers (61.8%) used the small open-plan office. In addition, 33.5% of workers used shared offices while only 4.2% of the respondents' occupied the cell office, and 0.6% of used medium open plan offices. Studies show that cell offices (1 person per room) were used mostly by directors of units whereas, shared offices (2-3 persons per room) and small open-plan offices (4-6 persons per room) were used by other administrative staff. This result is a manifestation of the typical hierarchical structure in most secretariat buildings. Senior staff members use the cell office while junior officers are usually accommodated in shared-room offices or open-plan offices, depending on the complexities of their jobs or organization structure.

4.3 Factors influencing workplace satisfaction

The appropriateness of factor analysis for this study was tested and presented in Table III. The results show that KMO was 0.920 which is very well above the minimum recommended value of 0.600. Using a significant level of 0.05, the significant test confirmed that Bartlett's test is highly significant ($p = 0.000$). This further clearly confirms that the data used for the analysis were adequate.

Table III: KMO and Bartlett's test for workplace satisfaction of selected secretariat buildings in Osun State

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	4100.745
	Df	496
	Sig.	.000

Principal Component Analysis was used in this study to collapse thirty-two workplace satisfaction features in Osun State to five factors. Presented in Table IV and Table V are the total variance explained and rotated component matrix workers' satisfaction with workplace environment respectively.

Table IV: Total variance explained in the workplace satisfaction

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.111	47.223	47.223	15.111	47.223	47.223	7.700	24.061	24.061
2	2.843	8.886	56.108	2.843	8.886	56.108	4.728	14.776	38.837
3	1.782	5.568	61.676	1.782	5.568	61.676	4.006	12.518	51.355
4	1.225	3.827	65.503	1.225	3.827	65.503	3.208	10.024	61.378
5	1.132	3.537	69.040	1.132	3.537	69.040	2.452	7.661	69.040
6	.957	2.992	72.031						
7	.813	2.541	74.572						
8	.716	2.237	76.809						
9	.684	2.138	78.947						
10	.656	2.049	80.996						
11	.593	1.853	82.849						
12	.554	1.730	84.579						
13	.477	1.491	86.070						
14	.453	1.416	87.486						
15	.425	1.327	88.813						
16	.393	1.227	90.039						
17	.371	1.160	91.199						
18	.337	1.054	92.254						
19	.299	.934	93.188						
20	.267	.835	94.023						
21	.252	.787	94.810						
22	.230	.719	95.530						
23	.207	.647	96.177						
24	.191	.596	96.772						
25	.189	.592	97.364						
26	.166	.518	97.882						
27	.149	.465	98.347						
28	.138	.431	98.778						
29	.124	.387	99.164						
30	.107	.333	99.497						
31	.090	.282	99.779						
32	.071	.221	100.000						

Extraction Method: Principal Component Analysis.

The first factor was related to workstation design, which accounted for 47.2% of the observed variance. Results also showed that fifteen factors loaded on this component. The variables that highly loaded on component one were as follows: height of workstation partition (.765), ease of chair adjustment (.759), existence of partitioning in workstation (.755), possibility adjustment of chair (.745), telephone privacy at workstation (.742), assessment of the overall design of workstation (.735), visual privacy at your workstation (.717), type of chair (.708), height of desk or work area (.663), distance between work-mates (.640), space for storage (.519), location of storage area (.461), distance from equipment making uncomfortable noise (.494), size of workplace (.489) and space available for storage of materials at workstation (.472). Findings reveal that these variables are related to workstation design. This indicates that workstation design plays a prominent role in workers' satisfaction with office or workplace design.

The second component had seven factors which represented 8.8% of the variance observed. This component could be termed spatial features and building services factor. The variables were cleanliness on your floor (.795), fire safety provisions (.779), personal safety (.775), speed and efficiency of technical maintenance (.681). Others were location of hallways (.605), location of stairways (.590) and interior finishes (paint and window blinds) in your office (.510). This result suggests that the spatial features and the building services provisions in the workplace influence workplace satisfaction. The highly loaded items were related to maintenance and efficiency of building services in the secretariat buildings.

The third component was related to social spaces in the work environment. This accounted for 5.5% of the observed variance. The variables that highly loaded on factor three were the space for formal meetings (.813), distance of informal meeting rooms to other offices (.769), space for informal meetings (.763) and the distance of formal meeting rooms to offices (.744). This result strengthens the proposition that social interactions at the workplace has a strong bearing on the perception and satisfaction of workers regarding their workplaces. Architects must ensure that the quality of social areas such as staff lounge, leisure or small informal meetings rooms, opens spaces, and other committee rooms must be adequate in terms of size, easily accessible to both handicapped and able-bodied workers, and well furnished with the right equipment.

The next factor affecting workplace satisfaction in the study area was loaded in component four with five variables. This was related to psycho-social factors in the workplace with 3.8% of the observed variance. The variables that highly loaded on component four were distance between other areas of activity, arrangement of workspace in relation to activities, distance between a worker and immediate supervisor, size of workspace in relation to the activities that is carried out and space available for storage of materials at workstation. This result corroborates O'Neil, (1998) cited in Rashid and Zimring, (2005), which opines that the interplay among privacy, territoriality, interaction, personal control and supervision determines workplace-satisfaction and productivity at individual, team and organizational levels. The fifth component was related to the location of toilets (.757) and size of toilets in the selected buildings (.749).

Table V: Rotated component matrix workers' satisfaction with workplace environment

	Component				
	1	2	3	4	5
Height of partition at workstation	.765				
Ease of making adjustments	.759				
Existence of partitioning in workstation	.755				
Possibility of adjustment of chair	.745				
Telephone privacy at workstation	.742				
Your assessment of the overall design of workstation.	.735				
Visual privacy at workstation	.717				
Type of chair	.708				
Heightdesk or work area	.663				
Distance between work-mates	.640				
Space for storage, files,	.519				
Location of storage area	.461				
Location of printing area on floor					
Cleanliness of floor		.795			
Fire safety provisions		.779			
Personal safety		.775			
Speed and efficiency of technical maintenance		.681			
Location of hallways		.605			
Location of stairways		.590			
Distance between you and equipment making uncomfortable noise	.494	.525			
interior finishes (paint and window blinds) in office		.510			
Space for formal meetings			.813		
Distance of informal meeting rooms to office			.769		
Space for informal meetings			.763		
Distance of formal meeting rooms to office			.744		
Distance between other areas of activity				.734	
Arrangement of workplace in relation to the activities				.712	
Distance between you and your immediate supervisor				.619	
Size of workplace in relation to the activities	.489			.616	
Space available for storage of materials at workstation	.472			.486	
Location of toilets					.757
Size of toilets					.749

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 7 iterations.

5.0 SUMMARY OF FINDINGS

The results show that the most common office typology in universities secretariat buildings was small open-plan offices. It was also revealed that workstation design, spatial features and building services, quality of social spaces, psycho-social factors, toilet location and size were the factors influencing workplace satisfaction in secretariat buildings of the selected universities in Osun state.

6.0 CONCLUSION

The study concluded that the workplace has a complex system which comprises demographic characteristics of workers, physical, social, psychological and environmental factors. It was deduced that workplace satisfaction was very specific to the individual as it was relatively psychologically-based. Consequently, workplace satisfaction in secretariat buildings depends on a myriad of factors, acting simultaneously on the workers. Based on this, the study recommends that adequate attention be given to the ergonomic factors in the workplace. Secretariat buildings should be custom-built for secretariat work-styles and job descriptions. This is because the adequacy of workstation design is central to workplace satisfaction, as other social, psychological, physical and functional factors stem from it. The study also recommends that, to improve workplace satisfaction in secretariat buildings, it is necessary to provide distraction-free workstation design, territoriality and control, noise-control, interior finishes and decoration, dedicated collaboration areas (team workspace), improved indoor air quality, social spaces, access for the physically disabled and emergency exit routes.

REFERENCES

- American Society of Interior Designers (1999). Recruiting and retaining qualified employees by design.
- American Society of Interior Designers (2005). Sound Solutions: Increasing Office Productivity through Integrated Acoustic Planning and Noise Reduction Strategies. Washington, D.C.: American Society of Interior Designers.
- Andrew, J. S., Nellie, C.N., & Nicholson. M. (2008). Office Space, Changing Workplaces and Human Performance. *Literature Review and Annotated Bibliography. National Executive Forum on Public Property. Queen's University, Kingston, ON K7L 3N6.*
- Arnold, D. (2004). Airy Offices Create 15% Work Boost. *Building Design*, 1634 (5).
- Brill, M., & Weidemann, S. (2001). Disproving Widespread Myths about Workplace Design. Buffalo, NY: BOSTI Associates.
- Camille, V., & Allee, V. (2007). Mobile Workers: Practices, Relationships and Components for Effective Workplaces. *CoreNet Global's The Leader*, 6(5), 18-22.
- Carsia, T. (2002). Designing Workspaces for Higher Productivity. *Occupational Health and Safety*, 71(9), 192-194.
- Danielsson, B.C. (2005). *Office Environment, Health and Job Satisfaction. An Explorative Study of Office Design's Influence*, KTH (Royal Institute of Technology), Stockholm.

- Danielsson, B. C. (2007). Office Experiences. In H. Schifferstein and P. Hekkert (Eds.), *Product Experience*. San Diego, CA: Elsevier Scientific Publications, Netherlands.
- Danielsson, B. C. (2008). 'Differences in Perception of Noise and Privacy in Different Office Types'. *Paper presented at the 20th International Congress of Acoustics '08 Published in conference proceeding, Paris, France 29 June - 4 July, 2008.*
- Danielsson, B. C. (2010). *The Office—an Explorative Study Architectural Design' Impact on Health, Job Satisfaction and Well-being*, KTH (Royal Institute of Technology), Stockholm.
- Hammed, A. (2009). Impact of Office Design on Employees' Productivity: A Case study of Banking Organizations of Abbott bad, Pakistan. *Journal of public affairs, administration and management*, 3(1).
- Humphreys, M. A. (2005). Quantifying Occupant Comfort: Are Combined Indices of the Indoor Environment Practicable? *Building Research and Information*, 33(4), 317–325.
- Kwallek, N. (2002). Colour in Office Environments; *a Newsletter by Inform Design*, 5(1).
- Marans, R. W., & Spreckelmeyer, K. F. (1992). Evaluating Open and Conventional Office Design. *Environment and Behaviour*, 14(3), 333-351.
- Miller, H. (2007). Workplace Performance Study, It's all about me: the benefits of personal control at work, research summary.
- Oomen, V. G., Knowles, M., & Zhao, I. (2008). Should Health Service Managers Embrace Open Plan Work Environments? A Review. *Asian Pacific Journal of Health Management*, 3(2).
- O'Neil, M. J. (1994). Work Space Adjustability, Storage, and Enclosure as Predictors of Employee Reactions and Performance. *Environment and Behaviour*, 26 (4) 504-526.
- O'Neil, M.J. (1998). Open Plan and Enclosed Private Offices; Research Review and Recommendations. Knoll workplace research © Knoll, Inc, 2008.
- O'Riley, M. K (2004). Make Space for Work. *Director*, 58 (2), 46-46.
- Ornstein, S.W. (1999). A Post-Occupancy Evaluation of Workplaces in Sao Paolo, Brazil. *Environment and Behaviour*, 31(4), 435-462.
- Preiser, W.F.E., Rabinowitz, H.Z., &White, E.T. (1988). Post-Occupancy Evaluation. Van Nostrand Reinhold.
- Preiser, W.F.E., & Schramm, U. (2002). Intelligent Office Building Performance Evaluation. *Facilities*, 20 (7), 279–287.
- Preiser, W., & J, Vischer. (2005). *Assessing Building Performance*. Oxford, MA: Elsevier.
- Rashid, M., & Zimring, C. (2005). On Psychosocial Constructs in Office Settings: A Review of the Empirical Literature. *EDRA 36 / 2005*, 107-122.
- Salama, A., & Courtney, L. (2008). The Impact of the Spatial Qualities of the Workplace on Architects' Job Satisfaction. *GBER*, 8(2), 88 – 102.
- Schneider, J. W. (2007). Focus on workplace design. *Building Design & Construction*, 48(3), 33-37.
- Sims, L. (2002). Enhance User Satisfaction Performance with Daylighting. *Research*

and Development, 10, 109-110.

- Sundstrom, E. (1986). *Work Places: The Psychology of the Physical Environment in Offices and Factories*. New York: Cambridge University Press.
- Sundstrom, E., Town, J.P., Rice, R.W., Osborn, D.P. & Brill, M. (1994). Office Noise, Satisfaction, and Performance. *Environment and Behavior, 26*(2), 195-222.
- Thompson, B., & Jonas, D. (2008). *Workplace Design and Productivity: Are They Inextricably Linked? Property in the Economy: A Digest and Review of Key Data and Statistics*. RICS (Royal Institution of Chartered Surveyors).
- Vischer, J.C. (2005a). *Space Meets Status: Designing Workplace Performance*. Oxford, England: Taylor and Francis/Routledge.
- (2005b). User Evaluation of the Work Environment: A Diagnostic Approach. *Le Travail Humain (Human Work), 68*(1), 73.
- Vischer, J.C. (2006). The Concept of Workplace Performance and Its Value to Managers. *California Management Review, 49*(2), 62-79.
- Vischer, J.C. (2007). The Effects of the Physical Environmental On Work Performance: Towards A Model of Workspace Stress. *Stress and Health, 23*(3), 175-184.
- Vischer, J. C. (2008). Towards an Environmental Psychology of Workspace: How People are affected by Environments for Work. *Architectural Science Review, 51*(2), 97-108.