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**Roles of Information and Communication Technology and Gender in Job Satisfaction
among University of Nigeria Lecturers**

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This study examined the roles of information communication technology (ICT) and gender in job satisfaction among University of Nigeria (UNN) lecturers. A random sample of 184 UNN lecturers participated in the study. They consisted of 141 men and 43 women drawn from both Nsukka and Enugu campuses of University of Nigeria. Participants' accessibility to ICT facilities was assessed with the ICT Accessibility Questionnaire developed by the researcher. The questionnaire tapped information about lecturers' accessibility to computers and internet services in the performance of their daily duties. In addition, lecturers' job satisfaction was measured with the Minnesota Satisfaction Questionnaire (MSQ) developed by Weis, Dawis, England and Lofquist (1967). A two-way analysis of variance (ANOVA) was used to analyze the data. No significant result was found. The results contradicted existing findings.

Job satisfaction has been defined as a pleasurable or a positive emotional state resulting from appraisal of one's job or job experiences (Locke, 1976). French (1982) and Tziner and Vardi (1984) later defined work satisfaction as an affective response or reaction to a wide range of conditions or aspects of one's work such as pay, supervision, working conditions and/or the work itself. Others defined it as an affective orientation towards anticipated outcome (Wanous & Lawler, 1972) or a statement to describe the feelings of employees about their work (Archea, 1991). This statement expresses the gap between what individuals feel they should receive from work and what they derive from the actual situation. A sense of satisfaction or its absence is thus an individual's subjective, emotional reaction to his or her work (Abu-Baber, 1998).

Many theories have been put forward concerning the causes of job satisfaction. They can be classified in three categories: situational theories, dispositional approaches, and interactive theories (Judge, Thoresen, Bono, & Patton, 2001). However, the present study is anchored on the situational theories. They assume that job satisfaction results from the nature of one's job or other aspects of the environment. Herzberg's (1966) two-factor theory is one example of such theories. According to Herzberg (1966), job satisfaction and dissatisfaction are driven by different factors - motivation and hygiene factors, respectively. Motivating factors are those aspects of the job that make people want to perform, and provide people with satisfaction; for example achievement in work, recognition, promotion and opportunities. These motivating factors are considered to be

intrinsic to the job, or the work carried out (Ironson, Smith, Brannick, Gilbson & Paul, 1989). Hygiene factors, on the other hand, include aspects of the working environment such as pay, company policies, supervisory practices, and other working conditions. Herzberg's (1966) model has been criticized on the grounds that it does not consider individual differences. In other words, it predicts that all employees will react in an identical manner to changes in motivating/hygiene factors. The model was also criticized in that it does not specify how motivating/hygiene factors are to be measured (Hackman & Oldham, 1976). Job satisfaction is important because of its implications for job-related variables. Job satisfaction is positively correlated with motivation, job involvement, life satisfaction, mental health, and job performance; and negatively related to absenteeism, turnover, and perceived stress (Judge et al., 2001; Spector, 1985). Job satisfaction levels within a company do affect organizational performance (Ostroff, 1992).

The persistent impact of information communication technology (ICT) on all aspects of the higher educational sector is well recognized. Since the 1970's various information and communication technology have been appropriated for teaching and learning. These include digital cameras, projection technologies, and the World Wide Web (www). Educational authorities internationally and even locally are promoting the use of ICT. For example, an expected outcome in the United Kingdom is that lecturers become increasingly independent users of ICT tools and information sources (Department of Education and Training, 1999). They have a better understanding of how information communication technology (ICT) can help their job in other subjects and develop their ability to judge when and how to use ICT, and where it has limitations they become more focused, efficient and rigorous in their use of ICT, and carry out a range of increasing complex task (Department of Education and Training, 1999).

The same trend has been observed in Australia, where lecturers are expected to choose between or integrate various technologies for a purpose. They adapt familiar or existing technologies to meet the demands of new task or situations. As confident and capable users of a wide range of technological applications and processes, they critically appreciate the consequences of technological innovation (Curriculum Council, 1998).

Further, a recent report by the British Educational Communications and Technology Agency (BECTA, 2003) identifies that for lecturers to be trained in the technical and teaching method aspect of information communication technology (ICT), they should first recognize the potential benefits of computer-supported sciences, teaching and learning and its specific role in meeting their classroom aspirations (Barton, 1997; Finlayson & Rogers, 2003).

The use of ICT, especially the internet, can open up access to a broader range of up to date toll and information resources and increase the currency and authenticity of school work far beyond that which textbooks and other resource can offer. It also allows students to relate their work more closely to the outside world to obtain live news or real data. Such exploration promotes students' awareness of environmental issues and the earth as a dynamic system. Contact with wider ideas can extend high ability of students and is perceived to increase opportunities for learning beyond that anticipated by the lecturers

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or by the curriculum. Furthermore, Macmillian, Liu, and Timmons (1997) conducted a study that suggest that rapid implantation of technology in working place needs to be accompanied by proper integration, technical support, employer support, discussion and training. Just the purchasing of equipment and the resulting implementation will not by itself improve satisfaction. There is need for a full integration framework and environment for the technology to be successful. Hokanso and Floope (2002) reported that technology use in working place has good results on job satisfaction. Other studies such as Porter and Lawler (1963) suggest that employer reinforcement play a role in the development of achievement motivation, which in turn contributes to job satisfaction. Achievement motivation and job satisfaction are influenced by several aspects of ICT. Higher satisfaction is seen in lecturers whose working place is equipped with computer and ICT gadgets, and allow the lecturer considerate autonomy in job satisfaction (Ginsburg & Bronstein, 1993).

Furthermore, Greenberg and Baron (1993) reported that employed women, in general, seem to be less satisfied with their work than their counterpart men. Quinn and Staines (1979) found that women tend to place greater emphasis than men on interpersonal relationships at work and the "Comfort" factors such as hours and travel time from home to work, which make their work more compatible with household responsibility. McNeely (1984) found a significant difference between employed women's and men's job satisfaction. Women were found to be more intrinsically satisfied than men. McNeely also found a significant difference between female professionals and male professionals, with females being more satisfied. These findings were supported by Tuch and Martin (1991) and Mi'aris (1996) studies in which female employees were significantly more satisfied than male employees. Jayaratne and Chess (1983) also reported a statistically significant difference between male and female social work administrators regarding role ambiguity and work load. Their findings suggested that female administrators have a higher workload than males; and that male administrators have greater role ambiguity than female administrators. The study, however, failed to detect significant differences between the genders with regards to challenge, comfort, financial rewards, promotions, and role conflict. Abu-Baber (2005) and Greenberg, Goldberg, Hamill, O'Neil, and Payne (1989), however, found no significant job satisfaction differences between male and female human service workers. These findings were supported by Reuther and Bissland's (1990) study, which failed to detect differences between male and female public relations workers regarding their overall work satisfactions.

Although much of empirical research has examined the correlates of job satisfaction among industrial, paraprofessional, and professional employees, a limited number of research have focused on the impact of ICT and job satisfaction. Recently, the University of Nigeria (U.N.N.) administration had a pact with Zinox Technologies to make available lap top computers to the staff of U.N.N. on hire purchase: an action that afforded a substantial number of U.N.N. staff, mostly lecturers, the opportunity of owning laptop computers. In addition, the Management Information System (MIS) section of the university extended their internet touch to the different parts of the University. These ICT facilities were expected to facilitate and improve staff performance and probably increase their satisfaction on the job.

Information and communication technology in this study refers to computers, projection technologies and internet services. Thus, accessibility to ICT refers to access to these ICT facilities in the course of performing academic functions.

The purpose of this study was therefore to answer the questions: how does ICT impact on job satisfaction of U.N.N lecturers? In addition, there has been a few explicit attempts to explain the central paradox of why women's job satisfaction is not lower than men's, given that women's jobs are often inferior in terms of pay, autonomy and promotional opportunity (Chiu, 1998). Thus, the aim of the present study also includes an attempt to answer the question, how does the job satisfaction of the female U.N.N. lecturers compare with that of their male counterparts? It was hypothesized that lecturers who have access to ICT facilities will not differ significantly from those who do not have access to ICT in their report of job satisfaction; and that male lecturers will not differ significantly from their female counterparts in their report of job satisfaction.

Method

Participants

One hundred and eighty four (184) lecturers participated in the study. They consisted of 141 men and 43 women randomly drawn from both Nsukka and Enugu campuses of University of Nigeria. Their ages ranged between 30 and 55 years, with a mean age of 45 years. One hundred and four (104) were selected from Nsukka campus (80 men and 24 women) while 80 lecturers were selected from Enugu campus (61 men and 19 women). Eighty-eight (88) lecturers reported access to ICT facilities, while ninety-six (96) reported non-access to ICT facilities. In UNN, participants were randomly drawn from four (4) out of the nine faculties (Faculties of the Social Sciences, Arts, Education, and Biological Sciences). Also in Enugu campus, participants were drawn from three out of five faculties (Faculties of Law, Business Administration, and Environmental Studies). These faculties were selected using simple random sampling.

Instruments

Two instruments were used in this study. The first instrument, K'T Accessibility Questionnaire, was developed by the researcher to tap information on the accessibility of individual lecturers to K'T facilities in the course of performing their daily academic functions. There were originally 15 items measuring accessibility to ICT facilities (e.g. projection technologies, computers and internet services). To validate the instrument, a pilot study was conducted. In the process, the instrument was given to three experts in departments of psychology and computer science (one industrial! organizational psychologist, one clinical psychologists and a computer scientist). A pilot study was conducted involving 60 lecturers selected from faculties of pharmaceutical sciences and

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physical sciences. Their responses were subjected to item analysis and an Alpha coefficient of .87 was obtained. The instrument which originally had 15 items was reduced to eight (8) items. The items dropped did not meet the required total item correlation of .30 established by Aiken (1996). The instrument has two-response pattern (yes and no). Yes was assigned 2 scores while NO was assigned 1 score and the maximum score an individual can score is 16. Thus since the variable exists on a continuum those who scored 8-12 were classified as non-access to ICT facilities while those who scored 13-16 were classified as having access to K'T facilities. Sample items include: I have access to internet services, I use computer to prepare my lectures, and I use computer to prepare my results.

The second instrument that was used in this study was Minnesota Satisfaction Questionnaire (MSQ) developed by Weiss, Davis, England and Lofquist (1967). This instrument consists of 20 items measuring job satisfaction. Weiss and colleagues (1967) reported a one-week interval test-retest reliability coefficient of .89, and a one year interval test-retest of .70. However, Mogaji (1996) revalidated MSQ with Nigerian sample. Mogaji (1996) established a 72-day test-retest reliability coefficient of .71. Each MSQ is scored on a five (5) point Likert scale ranging from very satisfied (5) to very dissatisfied (1). Mogaji's (1996) Nigerian norm formed the basis for interpretation of the scores of the respondents. Scores higher than the norm indicate adequate job satisfaction in the particular components of the measure while scores lower than the norms indicate dissatisfaction. Sample items include, I am satisfied with: (1) The way company policies are put into practice, (2) The working conditions, and (3) My pay and the amount of work I do.

Procedure

On the whole, 340 copies of the questionnaires each were distributed among lecturers in both Nsukka and Enugu campuses of the University. This was done partly on individual basis and partly through the individual lecturer's letter boxes in their various departments. In each department, the departmental secretary was engaged to collect the questionnaires, and where people were not responding the researcher personally visited them in their offices. The administration and collection of the measuring instruments lasted for one month. Out of the 340 copies of the questionnaires distributed, 184 were returned and properly completed. This indicates 65 percent return rate. Responses from the 184 questionnaires were used for data analysis.

Design/ Statistics

The study was a four-group cross-sectional survey, and a two-way analysis of variance (ANOVA), F-statistic, was employed to analyze the data.

Results

Table 1: Mean (M) and standard deviation (SD) of ICT and Gender on Job Satisfaction

Variable	Mean	SD	N
ICT Access	71.85	12.43	88
ICT Non-Access	72.32	11.29	96
Men	73.06	12.46	141
Women	68.93	8.82	43

Table 1 shows slight differences between the mean of those who have no access (M = 72.32) and those who have access to ICT facilities. On the other hand, men scored higher (M= 73.06) than the women (M= 68.93).

Table 2: ANOVA Summary of ICT and Gender on Job Satisfaction

Source	Sum of Squares	df	Mean Square	F
ICT	5.36	1	5.36	1.04 [#]
Gender	475.70	1	475.70	3.45 [#]
ICT * Gender	38.25	1	38.25	0.45 [#]
Error	24995.09	180	138.86	
Total	255988209	183		

[#]: not significant

Table 2 revealed no significant main effects of ICT and gender on job satisfaction. There appears to be no difference in job satisfaction between lecturers who have access to ICT and those who do not have access to ICT. Similarly, there seems to be no difference in job satisfaction between male and female lecturers. There was no interaction effect.

Discussion

The results of this study revealed no significant main effect of ICT on job satisfaction. Specifically, lecturers who reported having access to ICT facilities did not differ from their counterparts who reported non-access to ICT facilities in their job satisfaction. As a result, the first hypothesis which states that there would be no statistically significant differences between lecturers who have access to ICT facilities and those who do not have access to ICT facilities in their job satisfaction was confirmed. This finding is however inconsistent with Ginsburg and Bronstein (1993), who observed that achievement motivation, job satisfaction and performance are influenced by ICT availability. These authors further observed that higher satisfaction is seen in workers whose offices are equipped with computers and other ICT equipment. The present finding failed to corroborate these observations. Thus, the findings suggest that ICT accessibility is not an influential factor in determining workers job satisfaction. Access to computers and internet facilities may not be all that is required to impact on workers' job satisfaction.

Again, ICT accessibility may not imply that the facilities are integrated into the work schedules of lecturers in such a way that they can enhance and facilitate the performance of workers' duties. As Macmillian, Liu and Timmons (1997) noted, rapid implementation of information technology in education needs to be accompanied by proper technical support and training, since efficiency and satisfaction depends so much on them. In other words, the provision of computers (laptops), projective technologies and even internet services by the University of Nigeria authorities may not have sufficiently impacted on workers performance, achievement motivations and more importantly their job satisfaction. If these ICT facilities are not well integrated into lecturers' job duties, they may not have the much needed impacts on their job satisfaction.

The results also revealed no main effect of gender on job satisfaction. Hence, the second hypothesis which states that there would be no statistically significant differences between male and female lecturers was confirmed. In other words, male lecturers did not differ significantly from their female counterparts in job satisfaction. This finding is consistent with Bilgic (1998) who found no significant difference in job satisfaction among Asian men and women. The present study further corroborates the findings of Abu-Baber (2005), Greenberg, Goldberg, Hamil O'Neil and Payne (1989) who found no significant job satisfaction differences between male and female human service workers. These findings supports Reuther and Bissland's (1990) study, which failed to detect differences between male and female public relations workers regarding their overall work satisfaction.

The present findings contradict some previous findings. For instance, Greenberg and Baron (1993) reported that employed women, in general, seem to be less satisfied with their work than their men counterparts. On the other hand, McNeely (1984) found a significant difference in favour of women; women were found to be more intrinsically satisfied than men. According to Quinn and Staines (1979), women tend to place greater emphasis than men on interpersonal relationships at work and the "Comfort" factors, such as hours and travel time from home to work, which make their work more compatible with household responsibility.

The present study however failed to corroborate these findings. It rather suggests that men do not differ in job satisfaction from women. This implies that workers' job satisfaction may be influenced more by other factors than gender related factors. Moreover, lecturing is one of the human services professions that afford equal opportunities and work conditions for both men and women, such that it may seem as much interesting to men as women and compatible with household responsibilities. The present study also provides some implications. First, the study suggests that accessibility to ICT facilities may not ensure overall worker satisfaction. In the contemporary world order, with globalization and privatization at the peak of their revolution, emphasis has been placed on provision of equipment and information communication and technology as indices of greater performance and satisfaction on the job.

The present finding is suggesting that the provision of ICT facilities may not necessarily be all that are needed to ensure increased happiness on the job; rather the facilities should be integrated into the framework of lecturers' work activities. This can be achieved by providing the lecturers with the technical support and training that they need for the technology to successfully impact on their performance and job satisfaction. Similarly, this study demonstrated that males and females did not differ in job satisfaction. In other words, being a man or a woman does not determine how satisfied a worker may be on the job and consequently how successful he/she may be in his/her job. Thus, satisfaction on the job and consequent success on the job may not depend on whether a worker is a man or a woman. As a result, women should be given the same job opportunities with men, especially in the lecturing profession. One limitation of this study is the sample size. Lecturers' reluctance in completing and returning the questionnaires contributed to this limitation. It is thus suggested that further studies should increase the sample size in order to verify the present findings.

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