



Job Security, Labour-Management Relations and Perceived Workers' Productivity: Impact of Technological Innovation in Industrial Organizations.

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ABSTRACT

This Study Investigated The Influence Of Technological Innovation On Job Security, Labour-Management Relations And Perceived Workers' Productivity In Industrial Organizations In Nigeria. The Descriptive Ex-Post-Facto Research Method Was Adopted For The Study. A Total Of 321 Respondents Were Selected For The Purpose Of The Study Using Proportionate Stratified Sampling Technique. Three Sets Of Questionnaire Were Utilized For Data Collection. The Pearson Product Moment Correlation And T- Test Statistics Were Used To Test Hypotheses Generated For The Study At 0.05 Alpha Levels. Findings Revealed That A Significant Relationship Does Not Exist Between Technological Innovation And Workers' Job Security. The Finding Further Revealed That Technological Innovation Has Not Significantly Influenced Harmonious Labour-Management Relations. It Was Also Found That There Is No Significant Relationship Between Technological Innovation And Perceived Workers' Productivity. It Is Recommended That Participatory Management Style That Could Foster Workers' Participation At The Planning And Implementation Stages Of Technological Innovation Should Be Encouraged Among The Managers In Order To Foster Workers' Participation In Decision Making And Workers' Supportiveness Towards Implementation Of Technological Innovation. Moreover, Skill Reengineering Programmes Should Be Organized For Workers At Regular Interval In Order To Sensitize Them; Foster Skill Acquisition And Utilization Towards Improved Labour-Management Relations And Increased Productivity.

Key Words: Technological Innovation, Job Security, Labour-Management Relations, Productivity, Organizations.

INTRODUCTION

Impact of Technological Innovation in Industrial Organizations

Technological innovation has in recent times revolutionized industrial organizations across the globe. In the real sense of it, world economy is in a state of flux with changes in industrial technology occupying a central position in a dynamic state of global economy (Adegoke, 1997). Badhain (1991) asserts that the relative stability of efficient industrial production is being replaced by a high degree of uncertainty, brought about by factors including advanced technology which is directly related to such other factors as flexibility in the production of goods and services, work organization, workers motivation and increased productivity. Thus, advances in technology are compelling policy makers and management to search for optimal ways of capitalizing on them and minimizing social disruption of workplace (Davies, 2003).

Industrial organizations in Nigeria cannot but be affected by environmental changes. Carnoy (1995) submits that apart from creating new goods and services, technological revolution is altering how and where they are produced, thus influencing international trade and division of labour. Adegoke (1997) reported that the trend in technological innovation was noted in 1993 Federal Government Budget with an appeal to induce significant local ability into the production of enough manufactured goods “for strengthening Nigerian National security and enhancing our competitiveness in the emerging world system”

Shonekan (1992) emphasized the need to foster technological activities in our bid to develop industrially and maintain cordial relationship between the workers and the management. In other words, management concern should have consideration for workers’ welfare and assessment of impact of change on people; stressing that failure to consider labour-management relations in terms of reaction to technological innovation may adversely affect the achievement of beneficial results (productivity).

Abel (2005), observed that the social dimension which involves the whole range of workers’ skills, motivation, organization, industrial relations and production culture, is a primary component of even the computer integrated manufacturing (CIM) system; adding that the systems are both “Computer and Human Integrated (CHI). Kukoyi (2002) also stressed that technological innovation tends to influence harmonious labour-management relations and possession of relevant management skills require for effective management of such innovation by the executives.

Adegoke (1997) and Faniran (2002) reported that the main concern expressed by the workers over introduction of micro-electronic technology had to do with job security, transfer and training, safety and occupational health and working hours. Abor (2005) also identified the attitude of employees towards new technology as suspicion and apprehension; suspicion about the real aim behind the innovation and apprehension about job security, retraining difficulties and future career progression. However, the author reported a negative relationship between technological innovation and job security.

Recent studies in developed countries on technological innovation

have shown that it has significant effects on occupational health and safety, job performance, organizational commitment and employee relations (Kelly, 2004, Citrus, 2003, Allport 2002 and Jossey, 2002). Similarly, Braverman (1992) reported that technological innovations have been used by capitalist for degradation and deskilling of labour and for managerial control.

In the same vein, Akintayo (2004) opined that changes in the technical organization of a firm are intimately related to the social organization of the firm and have profound consequences on organizational effectiveness, and employee relations. Godfrey (2003) emphasized that increased sophistication in industrial technology, such as operating machine, computer and telecommunication gadgets is demanding increased attention to organizational behaviour for their successful implementation; stressing that this calls for teamwork and co-operation between labour and management.

The literature reviewed in the study centred around technological innovation as it affects job security and labour-management relations in isolation. Most of these studies were carried out in developed countries while few of such that were conducted in Nigeria focused on technological innovation as if affects employee relations over a decade ago, which still required further empirical verification. The present study is different from the previous studies because it focuses on relationship among technological innovation on job security, labour-management relations and perceived workers productivity in work organizations in Nigeria. However, technological innovation in this study refers adaptation of computer facilities as means of processing information in work organization. Besides, job security refers to retention of job without any suspicion. Also, labour-management relations refers to interpersonal relationship among all levels of workers (lower, middle and top management cadre), while perceived productivity refers to the perception of the respondents on the level of input-output ratio of workers' in the course of managing technological innovation.

Statement of the problem

This study investigated the influence of technological innovation on job security, labour-management relations and perceived workers productivity in work organizations in Nigeria. This was for the purpose of ascertaining the factors that could facilitate effective management of technological innovation for improved labour-management relations, job security and productivity of workers in work organizations in Nigeria.

Objectives of the Study

Specifically, the objectives of the study are to:

- i. Examine the influence of technological innovation on job security of workers in public and private organizations.
- ii. Determine the relationship between technological innovation and labour-management relations in public and private organization.

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- iii. Ascertain the relationship between technological innovation and perceived productivity of the workers in public and private organizations.
- iv. Determine the difference in job security of workers in public and private organizations in the course of managing technological innovations.
- v. Find out the differences in the pattern of labour-management relations in public and private organizations in the course of managing technological innovation.
- vi. Ascertain the difference in the perceived productivity of workers in public and private organizations in the course of managing technological innovation.
- vii. Investigate the reactions of workers in public and private organizations towards technological innovation.

Hypotheses for the Study

The following hypotheses were generated from the literature reviewed for the study:

- i. There is no significant relationship between technological innovation and workers' job security.
- ii. There is no significant relationship between technological innovation and improved labour-management relations.
- iii. There is no significant relationship between technological innovation and perceived workers' productivity.
- iv. There is no significant difference between job security of workers in public and private organizations in the course of managing technological innovation.
- v. There is no significant difference between pattern of labour-management relations in public and private organizations in the course of managing technological innovation.
- vi. There is no significant difference between the perceived productivity of workers' in public and private organizations in the course of managing technological innovations.
- vii. There is no significant difference between the reaction of respondents in public and private organizations to technological innovation.

METHODOLOGY

Design

The descriptive ex-post-facto research method was adopted for the study in order to investigate the relationship among technological innovation, workers' job security, labour-management relations, and perceived workers' productivity in public and private organizations in Nigeria.

Participants

The respondents for the study were drawn from six organizations in Nigeria. These organizations are Nigerian Breweries Plc, Cadbury Nigerian Ltd, First Bank of Nigeria Plc, Nigerian Telecommunication Plc, Power Holding Nigerian Plc and Nigerian Ports Authority.

A total of 321 respondents were selected for the purpose of the study. Proportionate stratified sampling technique was utilized to ensure that the sample was representative of the population in public and private organizations in Nigeria. Thus, 175 (54.5%) and 145 (45.2%) respondents were selected from public and private organizations respectively. Also, 187 (58.3%) male and 134 (41.7%) female respondents participated in the study. The age range of the respondents is 25-65 years with mean score of 18.62 and standard deviation of 8.21.

Measures

Three sets of questionnaire were utilized for data collection. The questionnaire titled “Technological Innovation and Job Security Scale (TIJSS) was developed by Kelly (2004). The Technological Change and Workers’ Productivity Scale (TCWPS) was developed by Jossey (2002). Also, Technological Innovation and Labour-Management Relations Scale (TILMRS) was developed by Adegoke (1997).

Technological Innovation Scale (TIS)

This scale was developed by Akintayo (2001). This scale contains sections A and B. Section A of the questionnaires contains demographic information such as: Name of organization, ownership of organization (public and private), age, sex, educational qualification, marital status, working experience, etc. Section B contains items relating to technological innovation. For instance: In your organization: computer facilities have replaced manual machine, technological innovation facilitates utilization of facilities such as; mobile phone, computer and internet facilities to replace the use of old means of processing information, etc.

Job Security Scale (JSS)

This scale contains sections A and B. Section A of the questionnaires contains demographic information such as: Name of organization, ownership of organization (public and private), age, sex, educational qualification, marital status, working experience, etc. Section B contains items relating to job security of workers in the course of managing technological innovation. For instance, as a result of technological innovation: Your position in the organization has been threatened; you often feel being relief of your employment, your organization has retrenched some workers; you enjoy

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stability of employment, you desire to retain membership of your organization etc. The author reported reliability co-efficient alpha of 0.78 for the instrument. For the present study, reliability co-efficient alpha of 0.81 was obtained.

Workers' Productivity Scale (WPS)

This scale contains section A and B. Section A of the questionnaires contains demographic information such as: Name of organization, ownership of organization (public and private), age, sex, educational qualification, marital status, working experience, etc. Section B of the scale contains items relating to productivity of workers in the course of managing technological innovation. For instance, in your organization, technological innovation has fostered: Increased productivity, increased level of efficiency on job, increased profit margin of your organization, efficient service delivery, increased ratio of output to input ratio, e.t.c. The author reported reliability co-efficient alpha of 0.86. For the present study, Cronbach alpha of 0.88 was obtained.

Labour-Management Relations Scale (LMRS)

Section A of the questionnaires contains demographic information such as: Name of organization, ownership of organization (public and private), age, sex, educational qualification, marital status, working experience, etc. Section B contains items relating to workers' reaction to innovation and pattern of labour-management relations in the course of managing technological innovation. For instance, technological innovation has fostered: Cordial interpersonal relations on the part of labour and management; teamwork and career progression, improved labour-management relations, reduction in industrial strike, effective conflict management etc. The reaction of workers to technological innovation was full of: Suspicion, fear, apprehension, support, acceptance, resistance, e.t.c. The author reported co-efficient alpha of 0.82. For the present study, Cronbach alpha 0.87 was obtained.

Procedure

The researcher, with the help of three trained research assistants, administered the questionnaire. The personnel managers of the selected organizations were consulted for approval and assistance in administering the questionnaire. The researcher was assisted by the personnel managers in securing the co-operation of the respondents. All aspects of the questionnaire were explained to the respondents and the confidentiality of the information supplied was guaranteed.

Out of 368 copies of the questionnaire being administered, 321 copies that were completely filled were utilized for the purpose of the study.

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It took the researcher three weeks for administration and retrieval of completely filled questionnaire from the respondents. This was due to the geographical location of the work organizations selected for the study.

Data Analysis

The data collected through the questionnaires was collated and analyzed using simple percentage and frequency count for demographic information. The Pearson Product Moment Correlation was used to test hypotheses one, two and three. Also, t- test statistical method was used to test hypotheses four, five, six and seven. All the seven hypotheses were tested at 0.05 alpha levels.

Results

The results of the data analyzed for the study were presented on the basis of hypotheses generated for the study.

Table 1: Summary of Correlation Table of Analysis on Technological Innovation, Job Security, Labour-Management Relations and Perceived Workers' Productivity.

Variable	N	Mean	SD	r	P	Remark
Technological Innovation		18.76	9.64			
Job Security		18.62	9.36	0.36	.011	P > 0.05
Labour Management Relations	321	17.26	8.98	0.76	.221	P > 0.05
Perceived Workers' Productivity		18.08	9.28	0.30	.002	P < 0.05

Hypothesis one states that there is no significant relationship between technological innovation and workers job security. Table 1 above shows that a significant relationship does not exist between technological innovation and job security of the workers' (r= 0.36; P > 0.05). Finding indicates that technological innovation tends to influence downsizing or retrenchment of workers due to deskilling process involve in managing technological innovation. Hypothesis one was therefore confirmed.

Hypothesis two states that there is no significant relationship between technological innovation and improved labour-management relations. Results in table 1 shows that technological innovation has not significantly influenced harmonious labour-management relations, (r= 0.76; P > 0.05). The finding indicates that harmonious labour-management relations have often been bridged in the course of managing technological innovation. Thus, hypothesis two was confirmed.

Hypothesis three states that there is no significant relationship between technological innovation and perceived productivity of the workers. Results in table 1 show that technological innovation has significantly influenced perceived workers' productivity (r= 0.30; P < 0.05). The finding implies that technological innovation has really enhanced increased productivity of workers at workplace as perceived by the respondents. Thus,

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hypothesis three was not confirmed.

Table 2: Summary of t-test Table of Analysis on Differences in Workers' Job Security, Labour-Management Relations and Perceived Workers' Productivity in Public and Private Organizations.

Variable	Organization	N	Mean	SD	df	t	P	Remarks
Workers' Job security	Public	175	26.22	8.32	319	12.68	.000	Significant (P>0.05) P<0.05
	Private	146	27.03	8.62				
Labour-Management Relations	Public	175	21.72	9.48	319	3.12	.261	Not significant P<0.05
	Private	146	20.96	9.11				
Perceived Workers' Productivity	Public	175	23.61	10.61	319	4.06	.002	Significant P<0.05
	Private	146	24.31	9.76				
Workers' Reaction	Public	175	27.01	8.60	319	2.28	.378	Not significant P>0.05
	Private	146	26.98	7.21				

Hypothesis four states that there is no significant difference between workers' job security in public and private organizations in the course of managing technological innovation. The results in table 2 show that technological innovation has significantly influenced job insecurity in terms of loss of job, retrenchment and downsizing in private organizations than in the public organization, $t(319) = 2.68$; $P < 0.05$. Thus, hypothesis four was not confirmed.

Hypothesis five states that there is no significant difference between pattern of labour-management relations in public and private organizations. Results in table 2 show that there was no significant difference between pattern of labour-management relations on the basis of technological innovation in both public and private organizations, $t(319) = 3.12$; $P > 0.05$. The finding indicates that harmonious labour-management relations have been bridged by technological innovation in both public and private organizations. Therefore, hypothesis five was confirmed.

Hypothesis six states that there is no significant difference between perceived workers' productivity in public and private organizations in the course of managing technological innovation. Results in table 2 show that there was a significant difference between perceived workers' productivity in public and private organizations in the course of managing technological innovation? This finding implies that workers' in private organization were perceived to be more productive than workers in public organizations in the course of managing technological innovation, $t(319) = 4.06$; $P < 0.05$. The finding indicates that productivity of workers in private organizations were perceived to be very high while that of workers in public organizations were perceived to be low in the course of managing technological innovation. Therefore, hypothesis six was not confirmed.

Hypothesis seven states that there is no significant difference between workers' reactions to technological innovation in public and private organizations. Results in table 2 indicates that workers in both public and

private organizations equally reacted negatively towards technological innovation, $t(319) = 2.28$; $P > 0.05$. The finding implies that workers in public and private organization resisted technological innovation possibly as a result of its cost, benefits and implications on their statuses, income, job security and conditions of service. Hypothesis seven was therefore confirmed.

DISCUSSION OF FINDINGS

Hypothesis one predicted that there is no significant relationship between technological innovation and workers' job security. The finding revealed that technological innovation has significantly influenced job insecurity among the respondents. The finding implies that utilization of modern technological devices or equipment in work organizations has created room for job enlargement but reduction in the number of work force with corresponding effects on organizational survival and productivity.

The finding disagreed with Adegoke (1997) and Abel (2005), who reported that technological innovation has significantly influenced job security among the workers. The finding of the study implies that since technological innovation requires new skill and methods of operation, there is tendency for job loss, intimidation of workers, retrenchment of workers and labour turnover intention in work organizations.

Hypothesis two states that there is no significant relationship between technological innovation and improved labour-management relations. The finding revealed that technological innovation has significantly bridged harmonious labour-management relations. The finding disagreed with Shonekan (1992) and Kukoyi (2002) who submits that technological innovation tends to influence harmonious labour-management relations and possession of relevant skills require for effective management of innovations in work organization by the executives. The finding implies that technological innovation though tend to foster deskilling process that could positively enhance skill reengineering and utilization but virtually bridged improved labour-management relations at work place in the course of managing technological innovation. This could be as a result of suspicion for job insecurity by the workers which technological innovation could foster.

Hypothesis three predicted that there is no significant relationship between technological innovation and perceived workers' productivity. The finding revealed that technological innovation has significantly influenced perceived workers' increased productivity. The finding corroborates Godfrey (2003), Akintayo (2004), Kelly (2004) and Jossey (2002) who reported that technological innovation are significantly related to social organization of the firm and have profound positive effects on organizational productivity, effectiveness and employee relations. The finding implies that technological innovation, even the computer integrated manufacturing system are both computer and human integrated and could positively influence effective utilization of skills for improved workers' productivity in the course of

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managing such innovation.

The fourth hypothesis predicted that there is no significant difference between job security of workers in public and private organizations in the course of managing technological innovation. The finding revealed that technological innovation has significantly influenced job insecurity among workers in private organizations than in public organizations. The finding showed that technological innovation has influenced retrenchment, downsizing and labour turnover in private organizations than in public organizations. The finding corroborates Okedara (1999) and Omole (2003) who reported higher rate of job insecurity in terms of downsizing and turnover in private organizations than in public organizations as a result of technological innovation. This implies that since technological innovation requires new skill and methods of operation, the possessor of obsolete skills among the workers tend to be jittery and be suspicions and virtually being relief of employment.

Hypothesis five predicted that is no significant difference between the pattern of labour-management relations in public and private organizations in the course of managing technological innovation. The finding revealed that technological innovation has significant influenced recurring conflict between labour and management in both public and private organizations.

The finding implies that management of technological innovation in both private and public organizations was ineffective as it affects the relationship among the actors within the industrial system. The finding corroborates Omole (2000), Okedara (1999) and Akintayo (2003) who reported that environmental changes which include technological, political, economic, socio-cultural and legal, had have a deleterious effects on labour management relations as a result of the speedy nature by which the employer introduced such changes; more so when the over riding effects of such changes has fostered labour turnover, downsizing or retrenchment in work organizations.

Hypothesis six predicted that there is no significant difference between technological innovation and perceived workers' productivity in public and private organizations. The finding revealed that technological innovation has significantly influenced increased productivity in both public and private organizations as perceived by the respondents. The finding revealed that introduction of automated machine, computer integrated manufacturing system and other information technologies had greatly induced effectiveness and efficiency on the part of the workers and virtually fostered increased productivity in the selected work organizations in Nigeria. The finding tallies with Kelly (2004), Braverman (1992), Citrus (2003) and Adegoke (1997) who reported that technological innovation had has a significant impact on labour effectiveness on the job with corresponding effect on organizational productivity. In the same vein, Akintayo (2003) submits that technological innovation, as a result of its substitute to human energy, especially computer system and information technology, such as; wireless and cabled telephone including inter communication system has

facilitated higher productivity through efficient service delivery and maximum production of goods and services in work organizations in Nigeria.

Hypothesis seven predicted that there is no significant difference between reaction to technological innovation in public and private organizations. The finding revealed that workers in both public and private organizations had equally resisted technological innovation as a result of its cost implications on their statuses, income, job security and conditions of services. The finding showed that workers seemed not to have been involved at the planning, implementation and evaluation stages in the course of managing the technological innovation. The finding tallies with Adegoke (1997) and Akintayo (2001) who reported that workers tend to resist changes especially when they are not allowed to participate in managing such changes at the planning and implementation stages. The finding implies that workers level of involvement and participation in the course of managing technological innovation will determine their reactions either negative or positive to such an innovation.

The implication of the findings is that introduction of technological innovation requires dissemination of information to the affected workers at the appropriate time in order to prepare their mind for such an innovation. Also, since implementation of technological innovation will be the responsibility of workers, such workers need to be involved at the planning and implementation of such an innovation in order to afford them share vision with the new trends in technological development as it affects their organization.

More so, technological innovation usually requires reengineering of skills in order to afford the workers supporting such an innovation. There is a need for the employers of labour in both public and private organizations to organize training programmes for workers in order to afford those acquiring skills that are keenly related to technological innovation to be introduced at the initial stage. This will definitely afford the workers adjusting to technological change that tend to impact their organizations and virtually foster workers job security and organizational survival.

CONCLUSION AND RECOMMENDATIONS

The findings of the study established that technological innovation has negatively impacted workers' job security, harmonious labour-management relations and positively fostered increased productivity. Also, technological innovations had influenced downsizing, retrenchment and labour turnover which resulted to job insecurity. However, technological innovation could be effectively managed, when workers are actively involved in the planning and implementation of such an innovation.

Based on the findings of the study, it is recommended that participatory management style that could foster workers participation at the planning and implementation stages of technological innovation should be encouraged

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among the managers. This will encourage workers participation in decision making, boost their morale and virtually induce workers support towards implementation of technological innovation.

Moreover, skill reengineering programmes should be organized for workers at regular interval in order to sensitize them and update their skills in the area of technological innovation. This will also encourage skill acquisition and utilization towards improved labour-management relations and increased productivity in work organization.

The employer of labour in public and private organizations should plan well before implementing technological innovation in such a way that it will ensure job security and commitment of the workers towards successful implementation. This they could do by gradual introduction of technological innovation, training and retraining of workers, avoidance of downsizing and retrenchment of workers.

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