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RESEARCH ARTICLE

Effect of Technological Change Adoption on Employee Performance of Food, Beverage and Tobacco Manufacturing Firms in Enugu State, Nigeria

[1]Nwogu, Onyebuchi Nicholas and [2]Okechukwu, Elizabeth Uzoamaka PhD
[1,2]Enugu State University of Science and Technology, Enugu, Nigeria

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ABSTRACT

The study examined the effect of technological change adoption on employee performance of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria. The specific objectives were to; examine the effect of invention on increasing productivity; ascertain the effect of innovation on product quality; and investigate the extent effect of imitation on service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria. A survey design was adopted for the study. The population of the study was 2,530; while the sample size was 345. The instrument used for data collection was a questionnaire. The findings revealed that Invention has a significant effect on increased productivity of food, beverage, and tobacco manufacturing firms in Enugu State with (F=238.378, p-value = 0.000a); it was also found that Innovation has a significant effect on product quality of food, beverage, and tobacco manufacturing firms in Enugu State with (F=178.438, p-value = 0.000a). Imitation has a significant effect on service quality of food, beverage, and tobacco manufacturing firms in Enugu State (F=66.268, p value = 0.000a). The study concluded that invention, innovation and imitation had a significant effect on increased productivity, product quality and service quality. It was recommended that managers of manufacturing firms should engage in employee material invention, employee innovativeness and employee imitating what others have done to perfect their own organization as well as encourage employees to always fight towards maximizing high level of productivity.

Keywords: *Technological Change Adoption; Employee Performance; Manufacturing Firms; Enugu*

Introduction

Since the early years of the 20th century, the world has been experiencing a revolution known as technology change adaptation. Some consider it to be the most fascinating development since the industrial revolution around the mid-18th Century (Tom, 2019). This revolution is changing our daily lives at home and at work, in shops and banks, in schools, colleges and universities. It is changing the way people think, communicate and behave. Today, the world has become a global village with the internet, mobile phones and satellite networks shrinking time and space, bringing together computers and communications; resulting in new ways of communication, processing, storing and distributing enormous amounts of information (UNDP, 2001).

In the era of globalization, the ever-changing technological attributes, with more stringent competition and increasing consumer demand particularly over the last few years, have shifted the issues related to employee performance significantly. The key to a company's success is the presence of employees who are competent and flexible in facing technological changes (Brzezinski & Bak, 2015). According to Kumar, Chengappa, and Pandya, (2013), an organization needs to be able to successfully adapt to technological changes due to high-level new competitors in the business environment. This successful adaptation depends on how ready employees are to face changes.

Technology change adaptation is needed to cope with task changes that are sometimes unpredictable and may be seen as unusual as a result of unexpected changes (Omar & Noordin, 2016). Employees are required to develop new skills, beyond the basic skills which tend to be static, because the company has to face the business environment, knowledge, and skills changes. Tien, Wang, Chu, and Huang (2012) opine that the ability to adapt to technological change is an individual's ability to change without great difficulty and be able to fit into new conditions. Adaptation means continuous change in response to new situations. At this time of the ubiquitous use of computers, the internet, and rapid development of artificial intelligence, the business environment is an ever-changing one in which information technology plays a vital role in strengthening a company's competitiveness (Lee, Choi, Lee, Min & Lee, 2016). Indeed, noted that although it has evolved over a considerable period of time, technological equipment has emerged as an important tool in management of organizational operations and employee performance. Based on this assertion, this study examines the effect of technological change adoption on employee performance in food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.

Statement of the Problem

In this era of rapid technological advances, people spend considerable amounts of money on technology to increase productivity in almost all organizational structures across the world. However, whether this investment really results in efficient output is a big concern for not only policy makers but also investors. Several paradigms have been developed and used to explain the acceptance of technology changes by users. Meanwhile, employee performance helps in ensuring that organization attained its objectives, goals and mission, setting employee expectations motivating them to work hard. By improving the performance of an employee, the overall performance of an organization is automatically improved. Despite all these, most manufacturing firms in the South East have been experiencing difficulties in assessing new technological changes due to poor financing, inadequate manpower, poor training and development of workers, inadequate research and development etc. which resulted by change in government, reformation of manufacturing firms' policies, climate change, wrong staff/customers behavioural attitude and change in boundaries tariff between two states or the other. However, at the same time most previous research has concentrated on user acceptance in business settings but few research studies have been conducted in non-business settings, such as law enforcement environments thus this study aim to examine the effect of technological change adoption on employee performance of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.

Objectives of the Study

The main objective of the study was to examine the effect of technological change adoption on employee performance of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria. Specific objectives were included to:

I. Examine extent effect of invention on increase productivity quality of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.
II. Ascertain the effect of innovation on product quality of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.
III. Investigate extent effect of imitation on service quality of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.

Statement of Hypotheses

The following research hypotheses were formulated to guide the study;

I. Invention has no significant effect on increase productivity of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.
II. Innovation has no significant effect on product quality of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.
III. Imitation has no significant effect on service quality of food, beverage and tobacco manufacturing firms in Enugu State, Nigeria.

Review of Related Literature
Conceptual Review
Technology

Technology is defined as the application of scientific knowledge for practical purposes, especially in industry. Technological change the organizational policies and strategies (Hampel and Martinsons, 2019). Most of the industry involve employee in management, working for technological advancement implementation. Technology can be defined as new and better way of achieving economic end that contribute to economic development (Stewart and Nihei, 2017). Defining technology is paramount because it helps to identify phenomena related to technology transfer. According to Khalil (2019), technology can be defined as all the knowledge, tools, processes, products, methods, and systems employed in producing product and services. In simple terms, technology is the ways we do thing. It is means by which we accomplish objectives.

Technological Change Adoption

Technological change is labour saving biased or capital saving biased, the latter could lead to reduction in total cost of production and the latter and the former enhance labour productivity Khalil (2019). In the second instance, same output can be produced with fewer men; the third is the reaction of demand to any consequent change in relative price which increases production and efficiency. This expands output and promote employment prospect. Despite these, the rate of the transition from older technologies is accelerating and is creating what Joseph Schumpeter regarded as “creative destruction” whereby innovation would destroy existing technologies and method of production Dauda, (2018). Technological change has created newer and more efficient machines, which workers will replace them?

Invention

Invention is the process of devising and producing by independent investigation, experimentation, and mental activity something which is useful and which was not previously known or existing. An invention involves such high order of mental activity that the inventor is usually acclaimed even if the invention is not a commercial success (Dauda, 2018).

Innovation

The word innovation finds its origin from the Latin word 'Innovare' that means 'to create a new thing' (Tidd *et al.,* 2001). The concept of innovation can be traced in the literature from perspective of multiple researchers such as Damanpour (2019), Dibrell*et al* (2018) and Ahmad (2019). These researchers agreed on definition of innovation as the process that aims at creation, development, and generation of new ideas to develop new products, services or any other new activities. Innovation encompasses creation and implementation of novel ideas for bringing new solutions to existing problems in the organization. McKeown (2018) defined innovation as the process that creates new and useful things; such as introduction of new techniques, practices and process or producing new products and service. Hence, it is agreed that innovation can take place in any form such as product or service development, structure, administrative system or organizational processes.

Imitation

Imitation is an effective tool for firms to enhance their performance in the short run. Firms can gain knowledge and know-how via imitation, which prevent them from being left behind their competitors (Song, 2015). Imitation is a behavior whereby an individual observes and replicates another's behavior. Imitation is also a form of social learning that leads to the "development of traditions, and ultimately our culture. Imitation can take many forms including counterfeits, clones, design copies, and creative adaptation (Schnaars, 2017). Elements of imitation include counterfeits, clones, design copies, and creative adaptations, among others. While imitation may not be the strategy of choice for many credible firms, externalities and other environmental constraints may limit the firm's options leading to imitation as their most effective strategy.

Employee Performance

Performance comes from the word job performance or actual performance which means work performance or actual achievement achieved by someone. The definition of performance (work performance) is the work quality and quantity achieved by an employee in carrying out his function in accordance with the responsibilities given to him. According to (Al Mehrzi and Singh, 2016) Performance is the result or level of success of a person as a whole during a certain period in carrying out tasks compared to various possibilities, such as work standards, targets or targets, or predetermined criteria that have been mutually agreed upon. Furthermore, (Yang *et al.,* 2016) state that performance is basically what employees do or do not do. Performance management is the entire activity carried out to improve the performance of a company or organization, including the performance of each individual and workgroup in the company. Shmailan (2016), employee performance is an action that employees do in carrying out the work done by the company. Performance in carrying out its functions is not independent, but always relates to employee job satisfaction and the level of reward given, and is influenced by individual skills, abilities, and traits.

Service Quality

Service quality can be defined as the difference between the customer's expectations about the service performance prior to the service provider and the customer's perceptions of the service provided (Asubonteng, *et al.,* 2016). Parasuraman, Zeithaml & Berry (2015) described service quality as the comparison of expected service and perceived service performance and they developed the SERVQUAL measurement technique to measure the service quality as such. While service quality is defined by Edwardson (2018) as the degree of being able to meet the customers' expectations and to determine their needs and wants, Kandampully (2018) gave a similar definition of satisfying the customer's expectations with the service provided. On the other hand, Teas (2013) defined service quality as the comparison of performance with ideal standards.

Increase Productivity

Productivity is a commonly used but often poorly defined term that regularly appears in both academic and practical discussions. Definitions of productivity seem to be dependent on the reviewer's point of view and the context in which it is used. Studies on technology, engineering, and economics, three broad industry categories, all examine productivity from slightly different viewpoints (Ghoabadian and Husband, 2019). In general, verbal definitions of

productivity aim to explain what the term means while mathematical definitions are used as a basis of measurement; in the latter case, the major objective is not to explain, but rather to improve productivity (Tangen, 2015).

Productivity is defined as the overall output of goods or services produced divided by the inputs needed to generate that output. Organizations strive to be productive. They want the most goods and services produced using the least number of inputs. Output is measured by the sales revenue an organization receives when those goods and services are sold (selling price x number sold). Input is measured by the costs of acquiring and transforming organizational resources into outputs (Angshuman, 2021).

Product Quality

One of the important elements in the business world is providing value to customers which does not only include objects that are tangible but also objects that are intangible, that is including packaging, service characteristics, brand name as well as performance quality. Customer satisfaction and value are thus linked to a product's quality which has a significant impact on service performance or the product (Kotler & Armstrong, 2012). Moreover, the extent to which products are able to attain the needs and desires of customers is reported to refer to as product quality (Smith and Wright, 2004; Suchánek, Richter &Králová, 2015) and that improvement in product quality automatically led to the satisfaction of customers thereby positively influencing repurchase intentions and higher sales (Flynn, Schroeder & Sakakibara, 1994; Lynch, 1999; Porter and Vander Linde, 1995; Nadia, 2001). As the result of the impact of globalization and the developments associated with technological advancement, the influx of new entrants into the business environments resulting in new products emergence, rivalry incremental challenges, market shares declinations as well as lower repurchase intentions leading to a reduction in organizations' sales volume in line with the challenges of keeping up with the growing customers' desires and expectations makes today firms to take the issue of product quality, customer satisfaction and repurchase intentions which will eventually lead to customer loyalty very essential and crucial to the overall survival of the organization (Nuridin, 2018; Atiyahi, 2016). In fact, all organizational production components should be coordinated towards meeting consumer's expectations and desires, and as such, organizations should leave the old pattern of production because if the customers' desires and expectations are not addressed by critical improvement on all production's component of the organization, they may switch to that of the company rivals (Razak, 2016).

Conceptual Framework

A conceptual framework for this study is presented in figure 2.1 below. The framework was designed by the researcher based on theoretical underpinnings and findings from empirical studies and models related to the study.

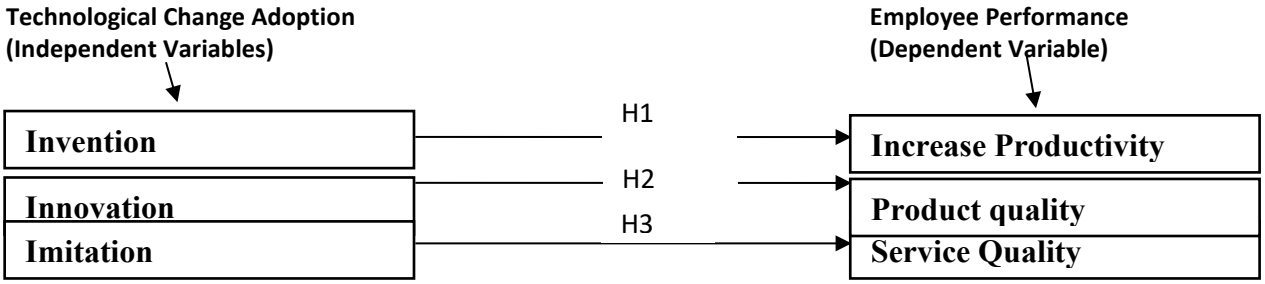

Figure 2.1: Model of Technological Change Adoption on Employee Performance
Source: Adapted from (Davis et al 1989).

Theoretical Framework

The study was anchored significantly on the Technology Acceptance Theory of technology change adoption.

Technology Acceptance Theory

Technology acceptance theory was propounded by Davis *et al* (1989). The technology acceptance theory explains and predicts the technology acceptance of an information system by its end users. TAT is an adaptation of Fishbein and Ajzen's (1975) theory of reasoned action (Ajzen & Fishbein, 1980), which had "proven successful in predicting and explaining behavior across a wide variety of domains" (Davis *et al.,* 1989).

TAT proposes six constructs (Davis *et al.,* 1989) Actual system use, behavioral intention to use, attitude toward using, perceived usefulness, perceived ease of use, and external characteristics. The relationship between attitude toward using, behavioral intention to use, and actual system use were derived from the theory of reasoned action (Davis *et al.,* 1989). The other technology acceptance model constructs and their relationships were new ones proposed by Davis *et al* (1989) for explaining the beliefs that affect the attitude towards using technology and how external characteristics affect these beliefs Two constructs, namely external characteristics, and actual system use were introduced to encapsulate observable components of technology adoption. External characteristics refer to all the external features of a system ranging from menus, and icons to output produced by the system (Davis *et al.,* 1989). Actual system use refers to the potential adopter's system usage behavior.

The two behavioral beliefs introduced by TAM consisting of perceived ease of use and perceived usefulness were a new contribution to research in technology acceptance. Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). The complexity of the external characteristics of the system has a direct effect on perceived ease of use. Perceived ease of use is considered to have a positive direct effect on attitude; for example, if an individual views that using a system is fairly free of effort, their effect with regards to using the system will increase positively. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989).

A potential adopter's perceived usefulness is directly affected by the degree to which they perceived that the external characteristics of a system aided them in performing a task or a set of tasks. Equivalently, the ease of use of a system can also contribute to increased performance; thus, ease of use has a direct effect on perceived usefulness. Perceived usefulness is also considered to have a positive direct effect on behavioral intention; for example, if potential adopters believe that the system delivers useful outcomes; their intention to use is increased. Perceived usefulness is considered to have a positive direct effect on attitude towards using a system. When potential adopters observe that the system delivers positive outcomes this will positively increase their effectiveness with regards to using the system.

Empirical Review

Sascha (2019) examined the radicalness of technological inventions and young venture performance; the role of technological competition and product diversity Arne Schmidt Technology and Innovation Management Senvion in the UK. The study adopted a survey research design. This study investigates how the radicalness of technological inventions is tied to performance (sales growth) in young technology-based ventures. Using a combination of survey and patent data from 85 spin-offs from public research institutions in Germany, the study identified the degree of technological competition and product diversification as important moderators in the relationship between technological radicalness and venture performance. Radicalness is found to have a positive impact on sales growth when competition in a particular technological field is high and when the venture's product portfolio is not diversified.

Nitin, Dietmar, and Hutmacher (2019) studied invention and business performance in the tissue-engineering industry technical report in Ghana. The aim of the study was to explain the variation in inventive output across the different firms in the sector. A survey design was used, our major premise is that firms that forge alliances will be able to tap into the expertise of their partners and thus improve their chances of inventive output. They revealed that to achieve

commercial success, firms need to manage time to market (through alliances or otherwise), have a global outlook, nurture their financial resources, and attain critical mass through mergers.

Okpala (2016) conducted a study on innovation and change as a tool for organizations' survival in Nigeria. This survey is done to assess innovation and change, as a tool for organizations' survival. The main objective of the study was to identify various factors that impinge on innovation and change in an organization and to assess how innovation and change are associated with an organization's survival. The study adopted a survey research design. 28 respondents were selected by random sampling techniques; the tool used was self-administered copies of the questionnaire. Data and information were collected through primary and secondary sources and a test was conducted on the hypotheses, using the coefficient of correlation as the tool for analysis. Effective monitoring of results involved the monitoring of all goals, actions, and teams involved that carried out the innovation and change process.

Woo-Hyoung, Chen, and Jin-Soo (2021) examined Imitation, Technology, and Firm Performance: The Korean Firms Case in China. The main purpose of this study was thus to investigate the contingent effect of imitation strategies on firm performance in transition economies such as China, focusing on pure and creative imitation. The study used a survey targeting department heads of each company who have more than 10 years of work experience. A total of 200 highly reliable samples were obtained, which could effectively explain the nine variables set in the study. Relevant hypotheses were tested using a hierarchical linear model (HLM). The findings suggest that SMEs' technology level also had a positive impact on performance. Firms with better technology had a positive impact on performance, irrespective of pure or creative imitation.

Fitri and Dwiatmadja (2020) conducted a study on the mediating roles of pro-commitment to learning and adaptability to technological change: professional experience portfolio toward employee performance in Indonesia. The aim of the study was to analyze the pro-commitment to learning and adaptability to change and whether it is able to mediate the influence of the professional experience portfolio on employee performance. A survey research design was used. The sample of this research consists of the managers and supervisors at PT POS Region VI in Indonesia. Using stratified random sampling, this research sample involves 223 participants. Research data were analyzed using Equation Model (SEM). The results show that there are positive and significant influences of all of the variables studied, except for the direct effect of the professional experience portfolio on employee performance.

Neeraj (2019) investigated the impact of technological change on employee performance in India. The use of technology has grown at a phenomenal rate within organizations. Consequently; organizations continue to experience changes driven by technology. This trend is interesting given that research fails to reliably link technology adoption to improved organizational performance. Therefore, this research aims to study the relationship between technological change and employee performance. This research is descriptive in nature. Primary data was collected from 100 employees of MTN and Reliance Communication through the designed questionnaire and secondary data is collected through annual reports and online resources. It was found that the Alternate hypothesis under this study is finally accepted which says that there is a positive relationship between Technological change and employee performance. It means with the development of new technology organizations have a tremendous impact on employee performance.

Methodology

This research adopted a descriptive survey design. Descriptive surveys are used to describe a behavior of a given subject. The effect of technological change adoption on employee performance was a survey study as it sought to describe data and characteristics of the population or phenomenon being studied and it used a quantitative research approach. The research was conducted in Enugu State. Primary data were used for the study and this was sourced from the questionnaire issued to employees of the manufacturing firms. The questions were constructed on a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1). The population of the study comprised all the staff of manufacturing firms that were selected for the study. According to the manufacturing firm's internal records of the head office used for the study, the total number of staff was 2,530. The reliability of the instrument was checked using the Cronbach Alpha test. The Cronbatch alpha value obtained was 0.81. Based on this, the instrument was highly reliable according to Nunnally and Bernstein's (1994) benchmark of 0.70 for ascertaining the

reliability of an instrument. Data collected for this study were analyzed using descriptive statistics such as frequencies and percentages while the regression model was used to test hypotheses.

Since the population of staff was adjudged finite, Taro Yamani's formula was used in determining the sample size as follows;

$$n = \frac{N}{1+ N (e)2}$$

Where;
n = The required sample size.
N = Population of the study = 2,530
e = 5% limit of tolerable error
1 = constant

Substitution the values in the formula, we have;

$$N = \frac{2,530}{1+ 2,530(0.5)2}$$
$$= \frac{2,530}{1+2,530(0.0025)}$$
$$= \frac{2,530}{1+6.325}$$
$$= \frac{2,530}{7.325}$$

n = Sample Size of customers = 345.

Data Presentation and Analysis
Data Presentation

Table 1: Copies of the Questionnaire Distributed and Returned

Respondents	Copies of the Questionnaire Distributed	Copies Returned	Percentage Returned	Copies not Returned	Percentage not Returned
Staff	345	330	96%	15	4%
Total	345	330	96%	15	4%

Source: Field Survey, 2022

Table 1 above, shows that 330 copies of the questionnaire were duly completed and returned representing 96 percent, while 15 copies of the questionnaire were not duly completed and returned from the respondents representing 4 percent. Therefore, a total of 330 copies were brought back and gathered or arranged for the analysis representing 96%.

Analysis of Bio-data of Respondents

Table 2: Bio-Data of Respondents

Staff		
Option	**Frequency**	**Percentage%**
Gender	230	70%
Male	100	30%
Female	**330**	**100**
Total		
Age		
18-30	150	45%
31-43	100	30%
44-56	50	15%
57-69	25	8%
70 and above	5	2
Total	**330**	**100**
Marital Status		
Single	30	9%
Married	300	91%
Total	**330**	**100**
Highest Ed Qualification		
Ph.D	20	7%
Masters	50	15%
First Degree	40	12%
OND/NCE	100	30%
SSCE	85	26%
FSLC	35	10%
Total	**330**	**100**

Source: Field Survey, 2022

From the table above, it was found for staff that 70 percent of the respondents were male, 30 percent were female, 45 percent of respondents were between the age bracket 18-30years, 30 percent of the respondents were between the age bracket 31-43 years, 15percents of the respondents were between the age bracket 44-56years, 8 percent of the respondents were between the age bracket 57-69years and 2 percent of the respondents were between the age bracket 70 years and above. 9 percent of the respondents were single while 91 percent were married. 7, 15, 12, 30, 26, and 10 percent of Ph.D., First degree, OND/NCE, SSCE, and FSLC of respondents.

Analysis of Research Questions and Test of Hypotheses

Analysis of Research Question 1 and Test of Hypothesis 1

Table 3: Effect of Invention on increased Productivity of Food, Beverage, and Tobacco Manufacturing Firms in Enugu State, Nigeria

Options (N =330)	SA (Freq %)	A (Freq %)	UD (Freq %)	D (Freq %)	SD (Freq %)
My firm engages in staff personnel initiatives.	205 (62%)	70 (21%)	10 (3%)	34 (10%)	11 (4%)

My firm has initiated many technological types of equipment.	150 (45%)	100 (30%)	20 (7%)	34 (10%)	26 (8%)
The provision of the invention increases workers' job scope.	180 (54%)	94 (28%)	5 (2%)	31 (9%)	20 (7%)

Source: Field Survey, 2022

Descriptive statistics were used to examine the respondents' level of agreement/disagreement with the three (3) items used to measure the effects. 205(62%) respondents strongly agreed, 70 (21%) respondents agreed, 10(3%) respondents were undecided, 34 (10%) respondents disagreed and 11 (4%) of respondents strongly agreed. 150 (45%) of respondents strongly agreed, 100 (30%) of respondents agreed, 20 (7%) of respondents were undecided, 34 (10%) of respondents disagreed and 26(8%) of respondents strongly disagreed. 180 (54%) of respondents strongly agreed, 94 (28%) of respondents agreed, 5(2%) of respondents were undecided, 31 (9%) of respondents disagreed and 20 (7%) of respondents strongly disagreed. So, therefore, analytical evidence between strongly agree and agree confirms that invention affects the productivity of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Tests for Hypothesis One

H_{01}: Invention has no significant effect on the increased productivity of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.
H_{a1}: Invention has a significant effect on the productivity of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig
1 Regression	75.378	1	75.378	238.378	.000[b]
Residual	141.663	330	.316		
Total	217.041	329			

a. Dependent Variable: productivity b. Predictors: (Constant), invention.

The result of the Analysis of Variance (ANOVA) for the regression coefficient revealed (F=238.378, p-value = 0.000a). The results indicated that the significance of the P value is 0.00 which is less than 0.05, this, therefore, implies that the regression model statistically and significantly predicts the outcome variable and is, therefore, a good fit for the data. This is an indication that there was a significant effect of invention on the productivity of food, beverage, and tobacco manufacturing in Enugu State Nigeria**.**

Analysis of Research Question 2 and Test of Hypothesis 2

Table 5: Effect of Innovation on Employee satisfaction of food, beverage and tobacco manufacturing Firms in Enugu State, Nigeria

Options (N =330)	SA (Freq %)	A (Freq %)	UD (Freq %)	D (Freq %)	SD (Freq %)
Employees are free to share ideas.	200 (61%)	75 (22%)	10 (3%)	30 (9%)	15 (5%)
Initiatives encourage hard work in my firm.	170 (52%)	80 (24%)	16 (5%)	50 (15%)	14 (4%)
Employees participate in the decision-making of my firm.	80 (24%)	10 (3%)	36 (11%)	100 (30%)	104 (32%)

Source: Field Survey, 2022

Descriptive statistics were used to examine the respondents' level of agreement/disagreement with the three (3) items used to measure the effects. 200 (61%) respondents strongly agreed, 75 (22%) respondents agreed, 10 (3%)

respondents were undecided, 30 (9%) respondents disagreed and 15 (5%) respondents strongly agreed. 170(52%) of respondents strongly agreed, 80 (24%) of respondents agreed, 16(5%) of respondents were undecided, 50(15%) of respondents disagreed and 14(4%) of respondents strongly disagreed. 80(24%) of respondents strongly agreed, 10(3%) of respondents agreed, 36(11%) of respondents were undecided, 100(30%) of respondents disagreed and 104(32%) of respondents strongly disagreed. So, therefore, analytical evidence between strongly disagree and disagree confirms that innovation affects employee satisfaction in food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Tests for Hypothesis Two

H_{01}: Innovation has no significant effect on employee satisfaction of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.
H_{a1}: Innovation has a significant effect on employee satisfaction in food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Table 6: ANOVA

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig
1 Regression	61.823	1	61.823	178.438	.000[b]
Residual	155.218	330	.346		
Total	217.041	329			

a. Dependent Variable: employee satisfaction b. Predictors: (Constant), innovation

The result of the Analysis of Variance (ANOVA) for the regression coefficient revealed (F=178.438, p-value = 0.000a). The results indicated that the significance of the P value of 0.00 which is less than 0.05, this, therefore, implies that the regression model statistically and significantly predicts the outcome variable and is, therefore, a good fit model for the data analysis. This is an indication that there was a significant effect of innovation on employee satisfaction of food, beverage, and tobacco manufacturing firms in Enugu State**.**

Analysis of Research Question 3 and Test of Hypothesis 3

Table 7: Effect of Imitation on Service Quality on of Food, Beverage, and Tobacco Manufacturing Firms in Enugu State, Nigeria

Options (N =330)	SA (Freq %)	A (Freq %)	UD (Freq %)	D (Freq %)	SD (Freq %)
Staff salaries are relatively okay in my firms to avoid imitation.	200 (60%)	75 (23%)	10 (3%)	51 (15%)	4 (1%)
My firm play vital role to ensure quality performance.	170 (52)	80 (24%)	16 (5%)	50 (15%)	14 (4%)
My firm does not owe staff or any title of a worker.	120 (36%)	100 (30%)	36 (11%)	10 (3%)	64 (19%)

Source: Field Survey, 2022

Descriptive statistics were used to examine the respondents' level of agreement/disagreement with the three (3) items used to measure the effect. 200(60%) respondents strongly agreed, 75 (23%) respondents agreed, 10(3%) respondents were undecided, 51 (15%) of respondents disagreed and 4 (1%) of respondents strongly agreed, 170 (52%) respondents strongly agreed, 80 (24%) of respondents agreed, 16 (5%) of respondents were undecided, 50 (15%) of respondents disagreed and 14 (4%) of respondents strongly disagreed. 120 (36%) respondents strongly agreed, 100(30%) respondents agreed, 36(11%) respondents were undecided, 10(3%) respondents disagreed and 64(19%) respondents strongly disagreed. So, therefore, analytical evidence between strongly agree and agree

confirms that imitation affects the service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Tests for Hypothesis Three

H_{01}: Imitation has no significant effect on the service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.
H_{a1}: Imitation has a significant effect on the service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Table 8: ANOVA

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig
1 Regression	27.968	1	27.968	66.268	.000[b]
Residual	189.073	330	.422		
Total	217.041	329			

a. Dependent Variable: service quality b. Predictors: (Constant), imitation.

The result of the Analysis of Variance (ANOVA) for the regression coefficient revealed (F=66.268, p-value = 0.000a). The results indicated that the p-value is 0.00 which is less than 0.05, this, therefore, implies that the regression model statistically and significantly predicts the outcome variable and is, therefore, a good fit for the data. This is an indication that there was a significant effect of imitation on the service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria.

Discussion of Findings

Objective One: Examine the extent effect of invention on the productivity of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria. This study is in agreement with the present result. Nitin, Dietmar, and Hutmacher (2019) studied invention and business performance in the tissue-engineering industry technical report in Ghana. They revealed that to achieve commercial success, firms need to manage time to market (through alliances or otherwise), have a global outlook, nurture their financial resources, and attain critical mass through mergers. Meanwhile, this study shows an element of disagreement with the present findings Sascha (2019) examined the radicalness of technological inventions and young venture performance. Radicalness is found to have a positive impact on sales growth when competition in a particular technology field is high and when the venture's product portfolio is not diversified.

Objective Two: Ascertain the degree effect of innovation on employee satisfaction of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria. This is in agreement with the study of Okpala (2016) conducted a study on innovation and change as a tool for organizations' survival in Nigeria. Effective monitoring of results which involves the monitoring of all goals, actions, and teams involved should be carried out in the innovation and change process.

Objective Three: Investigate the extent effect of imitation on service quality of food, beverage, and tobacco manufacturing firms in Enugu State, Nigeria. This is in agreement with the present result. Woo-Hyoung, Chen, and Jin-Soo (2021) examined Imitation, Technology, and Firm Performance: The Korean Firms Case in China. The findings suggest that SMEs' technology level also had a positive impact on performance. Firms with better technology had a positive impact on performance, irrespective of pure or creative imitation.

Summary of Findings

I. Invention has a significant effect on the productivity of food, beverage, and tobacco manufacturing firms in Enugu State with (F=238.378, p-value = 0.000a).
II. Innovation has a significant effect on employee satisfaction of food, beverage, and tobacco manufacturing firms in Enugu State with (F=178.438, p-value = 0.000a).

III. Imitation has a significant effect on the service quality of food, beverage, and tobacco manufacturing firms in Enugu State (F=66.268, p-value = 0.000a).

Conclusion

Based on the findings of this study, we conclude that technological change adoption has a significant effect on employee performance of food, beverage, and tobacco manufacturing firms in Enugu State. It was concluded that invention, innovation, and imitation have a significant effect on productivity, employee satisfaction, and service quality of food, beverage, and tobacco manufacturing firms in Enugu State.

Recommendation

Based on the findings of the study the researcher recommended that:

I. Manufacturing industry should intensify its innovation activities so as to create a competitive advantage environment that will further improve their turnover and profitability.
II. Having a clear understanding of the exact nature of innovations will help firms to prioritize their market, production, and technology strategies, to be followed by appropriate subsequent action plans.
III. The firms are encouraged to spend more on research that relates to the improvement of their products as well as improve the level of the production process to enhance their productivity.

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