

## **Technology Utilization and Organizational Productivity: A Study of Selected Bakery Firms in Abakaliki, Ebonyi State, Nigeria**

Ama Aka Udu, & Patience Ndidi Offor

*Corresponding Author: Ama Aka Udu*

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**ABSTRACT:** This study “Technology Utilization and Organizational Productivity” was an attempt to examine the nature of relationship between technology utilization and productivity of bakery firms in Abakaliki, Ebonyi State. The specific objective includes: to determine the extent of relationship between Spiral Mixer technology and production time of bread processing of the bakery firms in Abakaliki, to ascertain the extent of relationship between Rotary Rack Oven technology and number of employees involved in bread processing firms in Abakaliki and to identify the extent of relationship between Blend Molding machine and the quality of output of the bakery firms in Abakaliki. The study was a survey-type of research that employed correlational design in establishing the degree of relationship between the studied variables. Structured questionnaire drawn in 5-point likert scale was administered on the sample of 164 respondents, out of which 160 copies of the questionnaire were returned and subsequently used for the analysis. The reliability test was carried out on few respondents so as to ascertain the internal validity using Cronbach’s alpha on the Statistical Package for Social Sciences (SPSS) version 20.0. Pearson Correlation Coefficient was used to analyze the data. The study found that there a significant negative relationship between utilization of spiral mixer technology and production time of bread processing of the bakery firms in Abakaliki ( $r = -0.80$ ;  $p < 0.01$ ;  $n = 160$ ), there is a significant negative relationship between utilization of rotary rack oven technology and number of employees involved in bread processing firms in Abakaliki ( $r = -0.60$ ;  $p < 0.01$ ;  $n = 160$ ) and there is a significant positive relationship between utilization of blend molding machine and the quality of output of the bakery firms in Abakaliki ( $r = 0.72$ ;  $p < 0.01$ ;  $n = 160$ ). The implication of the result is that technology utilization promotes efficiency in operations that result to enhanced competitive advantage in the market. From the findings, the study recommends that bakery firms that have not yet utilized modern technology in their production processes should do so while bakery firms that have utilized modern technology should ensure they constantly up-grade their level of utilization in meeting the demands of the environment.

**Keywords:** Technology Utilization, Organizational Productivity, Spiral Mixer technology, bread processing, Rotary Rack Oven technology, Blend Molding machine

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### **I. INTRODUCTION**

The emerging trend in today’s changing business environment is orchestrated by the interplay of the various elements of the environment. The resulting flux in the business environment and considerable upsurge in technological advancement has stirred most organizations especially Crunches, Josel Agro Industries, Vegas Restaurant and Bakery in Abakaliki to align its operations by automating their production processes for improved organizational productivity. The type of technology organization utilizes is relatively vast, ranging from simple, for instance, personal computer with a word processor, to state-of-the art-computer aided manufacturing machinery (George, 2012). Technology utilization by organization came to the fore when Steam Engine was invented by James Watt in 1774. This invention, however, was used to generate power to operate machines in enhancing organizational productive capacity (George, 2012).

Subsequently, Univac computer was also invented by John Eckert and John Mauchly in 1951, and was used by organizations to perform some calculations, manipulate large amounts of information stored in databases and so on, (Hack, 2000). These inventions changed the face of operations, as it supplanted the manual way of operations to automation of processes, control, and production of goods and services in organization (Hack, 2000).

Technology is a state of the art (Abara, 2014). This definition considers the condition of things that aid production, distribution and consumption in an economic system, especially when all the production, distribution and consumption inputs are aggregated for over a period of time. Technology, given the state of the

art, is the application of human knowledge towards the evolution of a process with a view to enhancing expected results. Therefore, technology refers to the best method or new invention to aid businesses and organizations. Technology utilization according to Kenniy (2013) is the relative skills or proficiency in the application of technological resources in an attempt to improve organizational productivity. The reality and relevance of technology utilization among other considerations is apparently, a guided effort to buoy up new methods of operations for enhanced organizational productivity. Hence, crave for efficiency and operational excellence necessitated organizations like Crunches, Josel Agro Industries, Vegas Restaurant and Bakery predisposed desire for technology utilization, given the dynamism inherent in business environment. These firms (Crunches, Josel and Vegas bakery firms) have never used manual technologies as the study observed. Since their inception, they have been processing their products (breads) with modern technologies to aid their business operations.

Krugman (2012) defines productivity as a ratio between the output volume and volume of input. It measures how efficiently production input such as labour and capital are being used in an economy to produce a given level of output. Hence, productivity is the efficient use of available resources to produce a desired output. It generally emphasis input and output relationship. An organization is said to be productive when it optimizes its available resources and production capacity is enhanced to meet the demands of the environment.

Crunches is one of Nigeria's fast food restaurants. It was established in April, 1990. The firm currently has 25 locations in Nigeria. The firm specialty is the bread, meat pie, scotch eggs, a sugared donut, shawama, chicken and a soft drink. Western food such as hamburgers is also served with Nigerian foods such as jollof rice, moi moi, birthday cakes, and bread. The firm also produces different variety of loaves of bread via technology utilization. Abakaliki branch was opened on September, 2007, and the branch is located at 32, Afikpo Road, Abakaliki, Ebonyi State. Abakaliki branch has staff strength of 45. Vegas Restaurants and Bakery started on the 14<sup>th</sup> February, 2016. The firm is located at 41 Ogoja Road, Abakaliki, Ebonyi State. The firm produces meat pie, scotch eggs, donuts, and hamburger, bread, cakes, and so on. Vegas also prepares various kinds of dishes, such as: Continental dishes, African dishes and Chinese dishes, respectively. The firm has various sections which include bakery units, shawama section, store section, barbeque section, kitchen section, pestering, account units, and utility section. Each of these sections works interdependently in achieving the predetermined goal of the organization, hence enhancing productivity. The firm also produces different varieties of bread, using automation. Josel Agro Industries, "Songhail Model" was opened on the 12<sup>th</sup> February, 2012. The firm is located at Amaechara village, Nkaliki, in Abakaliki L.G.A. of Ebonyi State. The firm has various diversifications where the firm produces feeds, bread, fruit juice of various kinds, Hotel, Fish pound, brooding, poultry farm and so on. The concept of Songhail integrated system is zero tolerance to waste. This is because the poultry farm was designed such that every waste from the chicken is channeled to centralized tunnel, where the waste is stored, transformed into manure, while the maggots arising there from are used to feed the fish. The firm also has bakery unit where bread of various sizes are produced with new technologies (Extracted from the Personnel Units, 2016).

### **Statement of the Problem**

The crave for efficiency according to Feither (2013) gave vent to technology utilization in business operations, which over the years, elicited several propositions regarding its cost and benefit ratio, complexity of the technology, the desired operational skills of the machine operators, sustainability of the new technology, the size of the firm and so on and the above considerations, made organizations to make implicit decisions on improving their productivity through technology utilization. Bakery firms in Abakaliki, seem to be grappling with employees' counterproductive attitudes of ineffectiveness on the use of the modern technologies for the desired organizational objective. The unit responsible for flour mixing, blending and mealing using Spiral Mixer technology seemingly do not have the operational skills necessary for effective use of the machine. The operating capacity of the modern technologies (machines) seems to be under-utilized, for the desired performance. This situation tends to undermine the production time of bread processing. But the extent it affects production time is yet to be established, hence this study.

Research findings have linked lack of operational skills on the use of modern technologies (machine) to negative outcomes for the individual workers, and their organizations. These outcome among other things include low productivity, low quality of work, low performance and low commitment to work (Huke and Vickson, 2011) The possibility of issues relating to dearth of operational skills on the use of modern technologies especially on Rotary Rack Oven technology may have engendered fear and loss of operational confidence on the part of the employee on the use of Rotary Rack Oven, which apparently may lead to employee disinterestedness. This situation tends to affect the number of employees involved in bread processing. The realization of organizational objective will be seldom achieved without employees' operational skills on the use of the modern technologies in the bakery firms in Abakaliki.

It seems that issues relating to problems of quality of bread made in Abakaliki may have resulted to loss of customer patronage, as most people often request for bread made in Enugu, Onitsha, Aba, Owerri, etc., other than Abakaliki.

Consequently, machine operators are left at the mercy of their supervisors who neither have acquired basic skills nor trained on the use of Blend Molding machine for the desired performance in their operations. The aforementioned, may be contributing to low quality of output in the firms. Indeed, the need for the study has arisen because of the observed apparent difficulty in ascertaining the net effect(s) of the interactions of technology utilization on production time, number of employees involved in bread processing, and the quality of output achieved. In essence, the firms experience inefficiency in her productive capacity which invariably affects her productivity.

### **Objectives of the Study**

The general objective of the study is to examine the extent of relationship between technology utilization and organizational productivity in the bakery firms in Abakaliki. Specifically, the objectives are:

- (i) To determine the extent of relationship between Spiral Mixer technology and production time of bread processing of the bakery firms in Abakaliki.
- (ii) To ascertain the extent of relationship between Rotary Rack Oven technology and number of employees involved in bread processing firms in Abakaliki,
- (iii) To identify the extent of relationship between Blend Molding machine and the quality of output of the bakery firms in Abakaliki.

## **II. CONCEPTUAL ISSUES**

The word technology is derived from Greek words "techne" which means art or skill (Ahmed, 2014). Technology has existed with man since his creation. The quest for competitive edge and operational excellence that affords organizations greater leverage for improved organizational productivity led to the utilization of technology. The dependence of organizations on technology underpinned its crave for efficiency in their operations management. Therefore, the dependence of most organizations on technology according to Abara (2014) is referred to as technological determinism. Technology is a distinctive word that explicates the use of knowledge to solve human problems (Vincent, 2005). It is essentially the most vital elements that are relatively associated to effective operations management in a typical organization. Ahmed (2014) sees technology as a body of knowledge employed vigorously to create equipment, enhance operational skills, improve methods and procedures. In addition, Abara (2014) also sees technology as the technical efficiency of a productive input. This definition absolutely suggests a total input and total output ratio relationship within the ambit of production.

Molinerio (2012) argues that technology is the application of basic science (knowledge) in an attempt to achieve the objective of an organization. Therefore, technology is the application of knowledge that drives high performing organization. Technological knowledge spawns from two critical but divergent spheres of business environment which include internal and external technological knowledge. Internal technological knowledge delineates on those operational skills, abilities and technical-know how individual worker acquired/learned within the spectrum of business environment, while external technological knowledge explains those skills, operational dexterity and capabilities an individual worker acquired outside its environment of operations (Scotch, 2000).

Technology according to Sid (2013) is a compendium of skills, knowledge, cognate experience and various techniques upon which individuals stimulate change, transform and use its environment in order to create tools, machines, products and services that meet the changing demands of the environment. In the same vein, Abara (2014) opines that technology is that set of processes, tools, methods, procedures and equipment which are relatively employed to produce goods or service. Stizch (2012) contends that technology is referred to as a collection of techniques. This implies a current state of humanity's knowledge of how to combine resources to produce desired products, to solve problems, fulfill needs, or satisfy wants, which includes technical methods, skills, processes, techniques, tools and raw materials. When these factors combined with another term, such as "medical technology" or "space technology," it refers to the state of the respective field's knowledge and tools. "State-of-the-art technology" refers to the high technology available to humanity in any field (Stizch, 2012). From the avalanche of definitions, the study defined technology as a brand of knowledge that effectively utilizes technical means in order to produce goods and services that meet the demand of the environment. Therefore, technological knowledge drives especially when there is acquired technical-know-how on the existence and use of physical characteristics of factors of production which include land, labour, capital, information and entrepreneurship. Thus, the ability of organization to cognate and transform these factors of production into the realm of need are referred to as technical knowledge (Billy, 2012).

### **III. CONCEPT OF TECHNOLOGY UTILIZATION**

Technology utilization according to Laird and Farid (2014) is the proficiency in the application of technological resources to improve organizational productivity. Kenniy (2013) opines that for organizations to achieve a high level of proficiency in technology utilization that results to optimal performance, they must exert considerable efforts in the employment of personnel with cognate experience on the use of technologies. Alolabi (2014) says that efficiency in technology utilization derives from two critical but largely divergent spheres of learning, for instance, coaching and reflection which expose individual workers to acquire basic operational skills on the technology. Minner (2014) contends that technology utilization portends the way and manner organization use technology to aid their operations. Technology utilization as observed by Dura (2013) stem from the dispose desire of organizations to effectively deploy and allocate their resources for the desired performance.

Deiller (2014) contends that there are four factors that influence technology utilization in organization which include operating skills of the user, technology itself, time and the social system upon which the technology is utilized. These factors according to Deiller (2014) interact in predicting organizational performance. Jehill (2014) affirms that these factors could either make or mar the operating capacity of the technology for the expected outcome/result. Jehill (2014) believes that organizations that have the needed operating skills on the technology are likely to have considerable level of proficiency in operations. In the same vein, Feither (2013) sees technology utilization as the ability to use technology effectively in terms of resource allocation and mobilization that perhaps result to improved productivity.

Technology utilization according to Rayed (2013) is the apparent use of technology in organizations to aid their operations. Rayed (2013) observes that for organizations to improve its operations via technology utilization, they must exert considerable efforts in providing sustainable framework that could drive its operations. This framework as observed by Jelher (2011) defines those characteristics which must be considered appropriately given the trends on the environment. These characteristics include the size of the firm, size, structure, cost and benefits associated to it. Similarly, the study defined technology utilization as the proper use of new inventions and technical means by businesses and organizations to produce goods and services that meet the demands of the environment.

### **IV. SPIRAL MIXER MACHINE**

Spiral mixer machine according to Jehill (2014) is a machine that is typically used to mix bread dough effectively. One distinguished feature of spiral mixer machine is the availability of various attachments that can be employed when mixing. This attachment includes paddle, whip, and dough hook which allow the machine to aerate dough mixtures effectively (Jehill, 2014). The spiral mixer machine has the operational capability of operating considerably a multiple mixing bowls as the spiral hook spins and kneads during bread processing. In addition, Feither (2013) observes that spiral mixer machine keeps friction heat relatively low during operations due to its capacity of resisting over-heat and vibration in providing an appropriate mix in operations. Conversely, spiral mixer machine has an in-built capacitor that enhances its production capacity as it processes large dough batches and allows for bakery firms to keep multiple mixing bowls ready for production (Feither, 2013). Hilther (2012) observes that the shape of the spiral and bowls allow organizations to mix dough effectively giving a short period of time with little or no wastages. Spiral mixer machine enables organization to achieve appropriate dough mix that result to the production of high quality bread (Delher, 2014). The foregoing is consistent with the assertion of Weiller (2015) who contends that with the aid of spiral mixer machine, bakery firms could effectively achieve an improved dough mix which have the propensity of enhancing the quality of bread production.

### **V. ROTARY RACK OVEN**

Rotary Rack Oven is a state of art (machine) designed for effective baking of products such as bread, buns, cakes and cookie (George, 2012). Rotary rack oven is mostly suitable for bakeries producing various products. This oven has turntable with stainless steel and baking chamber that allows for flexibility on operations with sufficient steam generators on feed wall for better steaming (Feither, 2013). George (2012) opines that Rotary rack oven has a well designed air distribution outlays that enhances its operating system for optimal baking performance. Rotary oven according to Jelher (2011) has a thick overlapping insulation that modulates the heat such that breads are not burn. It has various shelves or dimensions that accommodate divergent products. These products loaded on trolley placed inside the oven are processed (heated) simultaneously for optimal performance. Main components of Rotary rack oven as identified by George (2010) include Burners, Extracting fan, Control pan and Rotating base, respectively.

### **Blend Molding Machine**

Blend Moulding Machine according to Ahmed (2014) is used by bakery firms to combine resources of different mix in order to provide a metering method for the material in the blend. This machine allows bakery firms to come up with a modular design that provides different metering devices in moulding products in line to their expectations. This machine, however, is used especially in a highly competitive environment where consistent use of the blender is essentially considered vital in designing products in meeting the demands of the business environment (Rayed, 2013). More so, Ahmed (2014) observes that blend moulding machine has the operating capacity that can combine different materials by volume (volumetric) or by weight (gravimetric) and can operate intermittently or continuously in producing the desired results given a short period of time.

### **Organizational Productivity**

Organizational productivity is the efficient employment and utilization of resources, labour, time, materials and information in the production of goods and services. Higher productivity means accomplishing more with the same amount of resources or achieving higher output in terms of quantity and quality from the same input. This is usually expressed as output/ Input ratio (Vansh, 2004). This study used production time, number of employees involved in bread processing and the quality of output to measure its productivity.

### **Production time**

Jain and Aggarwal (2011) affirm that production time is the period of time it takes to produce quantity of products per production run. Berry (2003) opines that production time of any manufacturing firm is drastically reduced given technology utilization. For instance, a period of time to be used while processing products manually is no doubt considerably high, as opposed to when the processing is technology-based. The use of technology-based product processing reduces production time, which could be used to produce more quantity of products with little or no wastages. There is, therefore, little or no doubt as a place of efficiency as technology-based products processing, optimizes production time for increased output with little or no wastages. This, therefore, is a good construct that measures productivity in organizations.

### **No of Employees involved in production process.**

Technology utilization in business and organizations according to Grey (2001) reduces manpower requirements in organizations. For instance, assuming a production process is done manually with ten (10) employees, but with the aid of technology utilization, at most four (4) employees will be needed for the production process. Giving the above scenario, the amount of money (salary) that would have been used to pay the six employees, would be plunged back to the business, and will contribute to the assets base of the organization (Grey, 2001). Therefore, reinvesting the money into the business and/or increasing assets base of the business shows efficiency in operations which measures organizational productivity.

### **Quality of Output**

Output refers to the finished products of any manufacturing firm. Although, Delher (2014) contends that a finished product (output) of a particular firm may be an input to another firm. For instance, flour is a finished product of a particular firm but a production input of bakery firm. Quality of output in this study is measured in terms of consistency in shape and size of bread produced. In addition, when finished products (bread) record minimal or zero breakages/wastages, it shows high quality of output. Bakery firms in Abakaliki, Ebonyi State visited by the researcher, which have not automated their operations record high level of inconsistency in shape and size of their bread. Also the researcher observed that many of their products are rejects as a result of breakages. Profit margin declines as the product is sold as rejects. Rayed (2013) sees output as the result of energy, work, services produced by a firm or individuals. Ogbonna (2004) opines that increased quality of output is typically used to measure productivity. While, Berry (2003) observes that organizations seldom achieve its desired goal of increased quality of output without employees' commitment to quality of service delivery. Therefore, for organizations to improve and sustain the desired quality of output there is need to sustain employees' commitment to work through consistent sensitization on the desired skills necessary for optimal use of the new technologies.

### **Theoretical Framework**

The underpinning theory of this study is Adopter Based Theory propounded by Tenner (1996). The theory laid emphasis on the need for organizations to proactively respond to its environment by using modern technologies as a way of improving their operations. Tenner (1996) contends that change is constant and for organizations to survive in the changing environment, they must have a clear picture especially on those variables that inter-play within the environment of operations. This understanding, however, would enable the organization to make pertinent decisions on the appropriate dimensions and technology to be used.

The theory considers four area expectancy dimensions of technology utilization into organizations to include, efficiency crave, performance expectancy, increased output and competitiveness. Efficiency occurs when organizations use available resources to achieve the goal of the organization with little or no wastage (Fowler, 2012). The theory believes that efficiency is entrenched when human efforts are substituted with technology, thus technologically-driven organizations have the potentiality of driving high performance. Tenner (1996) argues that performance expectancy explains the imperativeness of automating production processes to engender flexibility and hitch-free flow of materials on the assembly line as jobs are processed. The performance expectancy framework according to the theory constitutes a driving force of technology utilization. The theory believes that when production capacity is entrenched via automation, the resultant effect is increased output. More so, competitiveness is achieved especially when organizations become sensitive and proactive to its environment. Being sensitive to the environment according to Tenner (1996) would help organizations to make pertinent decisions with respect to resource allocation, utilization and mobilization.

The theory believes that certain decisions must be taken by the adopting firm especially on the size of the firm, its structure, operational skills, and the sustainability of the technology to be utilized. The decision to either use or not is relatively premised on the aforementioned factors which have a considerable influence on the firm. The following are the assumptions of the theory:

- i) Organizations productive capacity is increasingly enhanced giving technology utilization.
- ii) Organizational efficiency and effectiveness is improved especially when new technologies are co-opted to aid operations management, which perhaps result to improved organizational productivity.

The relevance of this theory on the present study is simply because it laid emphasis on the imperativeness of utilizing technology to improve efficiency in operations management, which relatively enhances organizational productivity

## VI. METHODOLOGY

The study was a survey-type of study that employed a correlational design in an attempt to determine the direction and magnitude of the relationship between studied variables. Structured questionnaire drawn in 5-point likert scale was administered on the sample of 164 respondents, drawn from the population of two hundred and seventy seven (277). The reliability test was carried out on few respondents so as to ascertain the internal validity using Cronbach’s alpha on the Statistical Package for Social Sciences (SPSS) version 20.0. It yielded Cronbach’s alpha of 0.71, 0.82 and 0.79 for Spiral Mixer technology on production time, Rotary Rack Oven technology and number of employees involved in bread processing and Blend Molding machine and the quality of output, respectively. The data collected were analyzed with Pearson Correlation Coefficient.

## VII. RESULTLS

**Table 1: Summary of Correlation Result**

		Sum USMT	Sum URRO	Sum UBMM	P/time	NEIBP	Q/Output
Sum USMT	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	160					
Sum URRO	Pearson Correlation	-.801**	1				
	Sig. (2-tailed)	.000					
	N	160	160				
Sum UBMM	Pearson Correlation	-.603**	.451**	1			
	Sig. (2-tailed)	.000					
	N	160	160	160			
P/time	Pearson Correlation	.720**	-.494**	.433**	1		
	Sig. (2-tailed)	.000					
	N	160	160	160	160		
NEIBP	Pearson Correlation	-.537**	.986**	.416**	-.496**	1	
	Sig. (2-tailed)	.000					
	N	160	160	160	160	160	
Q/Output	Pearson Correlation	.720**	.451**	1.000**	.433**	.416**	1
	Sig. (2-tailed)	.000					
	N	160	160	160	160	160	160

\*\* Correlation is significant at the 0.01 level (2-tailed).

## VIII. DISCUSSION OF THE FINDINGS

The result of hypothesis one showed a significant negative relationship between utilization of spiral mixer technology and production time of bread processing of the bakery firms in Abakaliki ( $r = -0.80$ ;  $p < 0.01$ ;  $n = 160$ ). This implies that additional level of utilizing spiral mixer technology would leads to a significant decrease of 80% on the production time of bakery firms in Abakaliki. This inverse relationship could be attributed to the multifaceted function of the spiral mixer machine resulting from the in-built capacitor that

enhances its production capacity as it process large dough batches for appropriate mix within a short period of time. This result suggests that the utilization of spiral mixer technology reduces production time it takes to process bread per production run. This inverse relationship occurs at a significant value since the computed p-value (0.000) is lesser than the flagged p-value (0.01). This result is consistent with the findings of Berry (2003) who confirmed that utilization of technology reduces production time among manufacturing firms.

The result of hypothesis two showed that there is a significant negative relationship between utilization of rotary rack oven technology and number of employees involved in bread processing firms in Abakaliki ( $r = -0.60$ ;  $p < 0.01$ ;  $n = 160$ ). The result showed correlation coefficient ( $r$ ) is  $-0.60$ . This however shows that there is a significant negative relationship between utilization of rotary rack oven technology and number of employees involved in bread processing firms in Abakaliki. This implies that any additional level of utilizing rotary rack oven technology would significantly leads to decrease of 60% of the number of employees involved in bread processing firms in Abakaliki. Therefore, utilization of rotary rack oven technology reduces the number of employees involved in bread processing firms in Abakaliki. Also, this inverse relationship occurs at a significant value since the computed p-value (0.000) is lesser than the flagged p-value (0.01). This relationship between utilization of rotary rack oven technology and number of employees involved in bread processing firms is congruence with the finding of Klein (2013). Klein (2013) studied the relationship between technology and organizational effectiveness.

The result of hypothesis three showed that there is a significant positive relationship between utilization of blend molding machine and the quality of output of the bakery firms in Abakaliki ( $r = 0.72$ ;  $p < 0.01$ ;  $n = 160$ ). This was shown by correlation coefficient ( $r$ ) of 0.72. This implies that there is a positive (high) significant relationship between utilization of blend molding machine and the quality of output of the bakery firms in Abakaliki. The implication of the aforementioned result showed that additional level of utilizing blend molding machine leads to a significant increase of 72% on the quality of output of bakery firms in Abakaliki, Ebonyi State. This positive significant relationship could be attributed on the productive capacity of blend molding machine in processing quality of bread in terms of consistency in size and shapes with little or no wastages. The effect of technology utilization found in this study is consistent with the findings of Ray (2011). Ray (2011) found a significant relationship between technology utilization and employee job performance.

## **IX. CONCLUSION**

From the findings, the following conclusions were made: there is a significant negative relationship between utilization of spiral mixer technology and production time ( $r = -0.80$ ;  $p < 0.01$ ) This suggests that the more and more organization increases their level of utilizing spiral mixer machine; there would be an inverse simultaneous decrease on the production time it takes to process bread among the bakery firms. This result agrees with the findings of Berry (2003) who attested that technology utilization reduces the production time. Therefore, the study concludes that utilization of spiral mixer technology reduces production time.

More so, the result of the correlation between utilization of rotary rack oven between and number of employees involved in bread processing also has significant negative relationship ( $r = -0.60$ ;  $p < 0.01$ ;  $n = 160$ ) This implies that additional utilization of rotary rack oven would proportionately leads to a decrease of the number of employees involved in bread processing. This finding is also consistent with the findings of Klein (2013). Hence, the study concludes that utilization of rotary rack oven reduces the number of employees involved in bread processing.

Finally, there is a significant positive relationship between ( $r = 0.72$ ;  $p < 0.01$ ) utilization of blend molding machine and the quality of output. This implies that the more they utilize blend molding machine, there would be a proportionate (significant) increase on the quality of output of these firms. This affirms with the findings of Ray (2011). Therefore, the study concludes that utilization of rotary rack oven has a significant effect on the quality of output of these firms.

## **X. RECOMMENDATIONS**

From the results, it shows that technology utilization promotes organizational productivity, therefore recommends that bakery firms that have not yet utilized modern technology in their production processes should do so while bakery firms that have utilized modern technology should ensure they constantly up-grade their level of utilization in meeting the demands of the environment.

The management of these firms should be proactive to the changing business environment in order to take advantage of modern technology to reduce production time, reduce number of employees and achieve desired quality of output.

These firms should institute effective communication channel from top management to the employees on the issues relating to technology utilization. The involvement of employees is essentially imperative because it would forestall any form of resistance on technology utilization.

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