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Evaluation of the contributions of tacit knowledge on quality of learning outcome in state universities, South East, Nigeria.

Anzor, Edith Chima
Department of Business Administration, Faculty of Management Sciences, Enugu State University of Science and Technology,(ESUT)

ABSTRACT
Knowledge management is the systematic management of knowledge assets of an organization for the purpose of creating value and meeting up with the strategic and tactical requirements of the organization; it consists of the initiatives, processes, strategies, and systems that enhance and sustain the storage, assessment, sharing, refinement, and creation of knowledge. Knowledge management applied to higher education institutions (HEIs) can bring about improvement in processes, such as the research process, curriculum development process, student and alumni services, administrative services, and strategic planning. The objective of the study was to assess the level of contributions of tacit knowledge on quality of learning outcome in state universities, South East, Nigeria. The results showed that tacit knowledge highly contributed positively to output of state universities in South East, Nigeria Z (95, n = 784) = 5.319 < 8.153, p >0.05.In conclusion this study showed that to a great extent tacit knowledge positively contributed to academic proficiencies, learning outcome, training of academic staff of state universities in South East, Nigeria.

Keywords: Tacit knowledge, quality, learning and organization

INTRODUCTION

Knowledge can be distinguished into two different types [1,2]. [3,4,5] describe knowledge as existing in two dimensions – tacit and explicit knowledge. In essence, knowledge is most commonly categorized as either explicit (coded) or tacit (that which is in people's heads). Tacit knowledge is the personal and context specific knowledge of a person that resides in the human mind, behaviour, and perception [6]. It evolves from people's interactions and requires skill and practice. [7] defines tacit knowledge, to be experimental, intuitive, and experience based knowledge that cannot be expressed in words, sentences, and formalized or articulated and it is therefore difficult to share also. Tacit knowledge is highly personal (held within the holder), subjective, difficult to formalize, articulate and communicate fully, experience based, contextualized, job specific, transferred through conversation or narrative, not captured by formal education or training and may even be subconscious but capable of becoming explicit knowledge [8,9]. It is the type of knowledge that is used mostly by organizational members in the performance of duties. Tacit knowledge is hard to verbalize because it is expressed through action based skills and cannot be reduced to rules and recipes. It is deeply rooted in action, procedures, commitment, ideals, values and it can only be indirectly accessed [10]. Explicit knowledge is documented and public; structured, fixed content, externalized, and conscious [11,12]. Explicit knowledge is what can be captured and shared through information technology. It can be codified into formal information that comes in tangible forms as written books, documents, manuals, white papers, guidelines, blueprints, technical specifications, scientific formulas, databases, organizational designs and policy manuals. It can be easily formalized and documented, articulated, expressed in words or numbers, and shared formally, as people are aware of it [13, 14, 15]. As it can be processed, transmitted, and stored relatively easily, it is not difficult

for organizations to capture this knowledge in repositories, systems, or operating technologies and share it throughout organizations [16]. [17], gave a good example of explicit and tacit knowledge, which is a cooking recipe. Explicit knowledge used in cooking includes a list and measures of ingredients to be used and a short description of the cooking process [18]. Tacit knowledge is an understanding of what and how much of ingredients to include, and also the process of actually preparing the particular dish. Processes such as adding particular ingredients in a certain order or in a certain way, or using certain method, or the timing of cooking and these are often difficult to explain.

Objective of the Study

The objective of the study was to assess the level of contributions of tacit knowledge on quality of learning outcome in state universities, South East, Nigeria.

Research Question

For this study to accomplish the desired objective, this research question will be formulated. i. What contribution does tacit knowledge have on output of State Universities in South East, Nigeria?

Research Hypotheses

The following hypothesis will be formulated for this study:i.Tacit knowledge highly contributes to output of State Universities in South East, Nigeria.

Scope of the Study

This study focused on "the assessment of contributions of knowledge management on the capacity development of South East State Universities in Nigeria". The following parameters was highlighted and extensively treated in the study- shared knowledge, tacit knowledge and information communication technology. The geographical area covers five state government owned Universities in South East in Nigeria. They include: Enugu State University of Science and Technology, Ebonyi State University, Imo State University, Anambra State University of Science and Technology, and Abia State University Uturu, Okigwe. Specifically, only the academic staff of these Universities were selected for sample size, this is because the academics are the line managers of the university, so when they are adequately developed, the positive reflection will be visible on the students being the bye product of the University. Time scope of this study cover a period of 2015 to 2021.

REVIEW OF RELATED LITERATURE

Knowledge Management: In this 21st century modern organizations, knowledge plays an increasingly important role. Business processes are dynamic and complex; manual labour is replaced with knowledge work, requiring a high level of skills and expertise. [7],aver that knowledge and skills that are of value to the organization tend to be embodied in individuals, and they are difficult to substitute. Marketplace has become global and relationships between organisations are highly enmeshed. Middle management is disappearing, leaving higher responsibilities for lower levels in the organisation. To cope with these characteristics, it behoves the organisations to think about the way to create or acquire, retain and manage knowledge for business sustainability [8]. What is Knowledge:[9], defined Knowledge as an important source for value creation in an organization which needs to be managed carefully. It is a vibrant force in the rapidly changing global economy and society. [13], discovered that knowledge is power, people, money, leverage, learning, flexibility and most importantly competitive advantage.The information generated is captured in various documents and databases and made available for researchers which can be visible in books or electronic technologies. Information can only become knowledge when it is applied in a manner that can add value. Knowledge also includes insight and wisdom of employee and could be used for decision making. It is also embedded in work processes, teams and exists in all

core functions of an organization as well as its systems and infrastructure [14]. It behove us to understand that in knowledge management context, knowledge encompasses far more than factual knowledge. It includes the entire range of norms and values, opinions and attitudes, emotions and intuition, skills and experience, expectations and ambitions that constitute our identity and personality, that also guide and define our group and individual behaviour [15

Tacit and Explicit Knowledge (the Main Types of KM):Knowledge can be distinguished into two different types [16]. [17], describe knowledge as existing in two dimensions – tacit and explicit knowledge. In essence, knowledge is most commonly categorized as either explicit (coded) or tacit (that which is in people's heads). Tacit knowledge is the personal and context specific knowledge of a person that resides in the human mind, behaviour, and perception [13]. It evolves from people's interactions and requires skill and practice. [15], defines tacit knowledge, to be experimental, intuitive, and experience based knowledge that cannot be expressed in words, sentences, and formalized or articulated and it is therefore difficult to share also. Tacit knowledge is highly personal (held within the holder), subjective, difficult to formalize, articulate and communicate fully, experience based, contextualized, job specific, transferred through conversation or narrative, not captured by formal education or training and may even be subconscious but capable of becoming explicit knowledge [14]. It is the type of knowledge that is used mostly by organizational members in the performance of duties. Tacit knowledge is hard to verbalize because it is expressed through action based skills and cannot be reduced to rules and recipes. It is deeply rooted in action, procedures, commitment, ideals, values and it can only be indirectly accessed [17]. Knowledge Management and Organisational Developments: Logically, knowledge management is the outcome of some developments envisaged recently in organisations: [8] posits it in this manner, first, work is being substituted by more intelligent kinds of work, which include: the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers, and teachers. Secondly, the development of Information and communication technologies to support or automate work processes. However, Knowledge creates power, and employed individuals who naturally kept their knowledge and skill for themselves now share it in the organisation. Again, knowledge obtains its maximum value when it is shared, i.e. when knowledge is no longer owned and protected by individuals, but by the organisation as a whole. People (employees) obtain knowledge through the work the environment created, the organisation therefore has a right to own and use knowledge held by individual employees [9]. Information Communication Technology Competency and Staff Development:Competency in Information Communication Technology has immensely facilitated the staff development of institutions of higher learning and in recovering and storing information which has led to an important growth in the database of knowledge industry. [3], suggests that with the advent of ICT, the whole world has become a “Global Village”. Information and communication technology involves essentially the storage and communication of information. The greatest potentiality of ICT, thus, is its ability to serve as a tool to circulate information and to induce a qualitative change in the life of a man. [5] posit it that ICT is a generic term which basically refers to programs, computers and telecommunications. IT competency is said to be broader and refers to the use of these technologies for the satisfactions of the organization’s information needs. ICT is multidimensional and conceptually complex. Universities as a barn of knowledge can use it to develop their staff and also create a competitive advantage.The Imperativeness of Knowledge Management to Nigerian Universities:[7], assert that the emerging knowledge society, “universities” are the expected drivers of innovation, thereby contributing to the development of a learning society. It may, therefore, be correct to posit that a nation’s

development is dependent on the ability of its universities to produce new knowledge, new technology, and quality graduates. In contributing to national development, universities have a role in preparing graduates, not simply for the present time, but also for the emerging society which is characterized by technological advancements [9]. Universities are therefore, seen as the key drivers in the emerging knowledge economy who are thus required to innovate as well as collaborate with industries for research and development purposes. In the same vein, [13] opine that higher education institutions should be able to meet the needs of students and society while attending to the well-being of the institution itself.

Theoretical Frame Work

The Socialization, Externalization, Combination, and Internalization (SECI) Model: Ikujurio Nonaka propagated a model of knowledge creation in books and series of articles in early 1990s. This model opine that knowledge creation is a spiralling process of interactions between explicit and tacit knowledge. These interactions lead to the creation of new knowledge [1]. The SECI (Socialization, Externalization, Combination, and Internalization) model first appeared in 1991 [5] and was recognized as a useful but rigorous approach to describing knowledge generation, transferred and re-creation of knowledge in organizations. In brief, the proposed model has the following important aspects:

* An interaction dynamic (transfer)
- Two forms of knowledge - tacit and explicit
- Three levels of social aggregation - individual, group, context
- Four knowledge-creation processes - socialization, externalization,
- combination and internalization

The model in figure 3 proposes that a "knowledge-creatingorganization" consciously Core Assumptions and How it Relates to the Study:The core behavioural assumption in this model is that knowledge creating organizations (universities) continually encourage the flow of knowledge between individuals (students) and groups to improve both tacit and explicit knowledge stocks. The critical knowledge management assumption of the SECI process is that knowledge is created and improved as it flows through different levels of the organization and between individuals and groups. Thus, knowledge value is created through synergies between knowledge holders i. e. the academics (both individual and group) within a supportive and developmental organizational context [9]. Organizational Learning (OL) Theory:Organizational Learning (OL) Theory was propagated by Chris Argrys and Donald Schon in the year 1978. Argrys & Schon contend that it is a product of organizational inquiry. This means that whenever expected outcome differs from actual outcome, an individual (or group) will engage in inquiry to understand and, if necessary, solve this inconsistency. In the process of organizational inquiry, the individual will interact with other members of the organization and learning will take place. Learning is therefore a direct product of this interaction. Argrys and Schon insist that this interaction often goes well beyond defined organizational rules and procedures [16]. Summary of the Model and Theory:Though the above approaches of both models and theories have differentiating factors, but the most important aspect noticeable here is the organizations' possession of different dimensions of knowledge; namely: tacit, explicit, embrained, embedded, embodied, encultured and encoded, etc. Therefore, organizations can organize and behave themselves as knowledge-possession, generation and transmission systems. They are cognitive agents – demonstrating or depicting a distinct corporate rationality or mindset [18].

Empirical Review

Knowledge Management and the University: [5] investigated the "Knowledge Management in Nigerian Universities: A Conceptual Model". The researcher aver that knowledge management has been identified as a strategy for driving innovative processes. The objectives of the study include: to propose a conceptual model for knowledge management application in Nigerian universities and to examining various definitions of knowledge management. The study is conceptual in nature, a literature survey was conducted for the examination of the concept of knowledge management and its application in higher Education institutions. Findings from the literature informed the development of a conceptual model, suggesting how universities can adopt knowledge management practices and strategies in order to drive innovation and improve performance. The study concludes that, as knowledge management has the capability for improving performance within universities, the proposed model must be subjected to empirical validation for onward amendments and improvements.Share Knowledge and Contributions to Academic Proficiencies of the Universities: [3,8] conducted a study on "knowledge sharing among university students in Taiwan". The objectives of the study include: To analyze information management instructors' behaviour regarding knowledge sharing at technological universities; Explore the relationship between personal motives and knowledge sharing of information management instructors; Identify the barriers to the knowledge sharing of information management instructors at technological universities; Explore the influence of activities, materials, social incentives and inspiring systems on the knowledge sharing of information management instructors. The study adopted three variables of knowledge sharing, knowledge internalization, and knowledge creation. In their findings from both quantitative and qualitative analyses suggested that: the blended knowledge management model is effective in improving knowledge, dispositions, and abilities of creativity. Again, that there is an online sharing and evaluation of creative products, learning communities and discussions. Finally, that the practice of creativity strategies have substantial effects on all three aspects of creativity. They observed that peer evaluation of group assignments and creativity-related feedback enhance the learning of knowledge and dispositions.[9] investigated on "Linking Knowledge Sharing and Employee Creativity: Decomposing Knowledge Mode and Improving the Measure of Tacit Knowledge Sharing". The objective is to address the following question: Does sharing of knowledge with others increase one's own creativity? - If so, how creative process engagement relates with knowledge sharing and eventually leads to an individual's more creative performance? They aver that over time, Knowledge management (KM) has been theorized as an important source of organizational competitive advantage. They suggested that by developing dynamic capabilities that will leverage intellectual assets, an organization is expected to innovatively respond to various changes in the environment. Here, they specify the sharing of two modes of knowledge. The study proposes and verifies a theoretical model linking creative process engagement with individual creativity via the mechanisms of tacit and explicit knowledge sharing. The study uses a two-wave survey design. They collected data from a sample of 194 employees and their supervisors. The results showed that three types of specific engagement in creative activities (i.e., problem identification, information searching and encoding, and idea generation) differentially and interactively affect employees' creative behavior, in which processes tacit knowledge sharing and explicit knowledge sharing played different roles. Information Communication Technology Competency and the Training of Academic Staff: [13], examined "Information and Communication Technology Literacy among Student Teachers in Universities in Nigeria". The following forms the objectives of the study: to examine the

level of ICT literacy among university student-teachers in the North Central Zone of Nigeria. To investigate on the student-teachers' level of ICT literacy vary based on gender 3. To examine the student-teachers' area of specialization that influence their ICT literacy level. The study was conducted to find out the ICT literacy levels among student and lecturers in the universities in North-Central Nigeria. The study involved a total of 638 student and lecturers consisting of 360 males and 248 females. The instrument used for the study was a researcher-designed questionnaire with a reliability index of .74. The results indicated that student-teachers in North-central Nigeria have an average ICT literacy level. No significant difference was established in the level of ICT literacy between male and female student-teachers {t(636)=1.672 >.05} and there was no significant difference in the level of ICT literacy by student-teachers in the Arts, Sciences, and Social Sciences {F(2,635) = 0.935 > 0.05}. The study however recommended that universities should make available more ICT equipment and facilitate to student lecturers in adopting the culture of integrating ICT into pedagogy and educational administration since they have an average ICT literacy level Tacit knowledge and Quality of Learning Outcome:[8] did a study on "Tacit to Tacit Knowledge Transfer within the Informal Environment of Higher Education", the study emphasized on Nonaka's SECI model (Socialization Externalization-Combination Internalization) of knowledge management, where Nonaka strongly emphasized on the tacit to tacit knowledge transfer within the socialization process. How tacit knowledge transfer could be emerged among academicians in the informal environment? The study dealt with transformation process of tacit-to-tacit knowledge in the theoretical frame work where it investigated the higher educational settings in the Turkish Republic of Northern Cyprus. The empirical examination of other works was done via qualitative methodology and in-depth interview technique was used for gathering data from the academicians on how they interact and transfer tacit to tacit knowledge with each other in the academia in an informal environment. The results from discussed contributions of tacit -to-tacit knowledge transfer in an informal environment among the academicians include: There are four areas that need attention by organizations in order to promote the transfer of tacit to tacit knowledge: (1) tacit knowledge awareness (2) Benefits of tacit knowledge (3) Organizational conditions for knowledge transfer (4) Management support. In order to promote lifelong learning in an informal way, important suggestions and further directions have been recommended for TRNC's higher educational settings.

Gaps in the

In the course of reviewing past literatures, this study identified a number of gaps which include: Quite a number of studies on knowledge management reviewed focused on developed countries, yet the ignorance of knowledge management application and poor development of academic staff is alarmingly high in developing countries including Nigeria. The few conducted in Nigeria, some used a limited sample size while the present study used a large population for the study which will also established a variation. Again, none of these studies really studied the "assessment of the contributions of knowledge management on the capacity development of state Universities in South East, Nigeria". Some that researched on the tertiary institutions did not consider the following proxies: to identify the extent to which shared knowledge contributes to academic proficiency of State Universities in South East, Nigeria; to ascertain the level of contributions of tacit knowledge on quality of learning outcome in State Universities, South East, Nigeria; and to assess the relationship that exists between information communication technology competency and staff development of State Universities in South East, Nigeria. a fact that adds to the significance of the study and helps to fill in the knowledge gap.

METHODOLOGY

Research Design

Research design is an accessible, explicit strategy or procedure that directs the entire research in collection and analysis of data to provide answers to research questions, hypothesis testing and eventual solution to the problem under investigation. In the study, analytic descriptive survey design will be applied to draw data from the selected academic staff of the five universities in the South East, Nigeria. A survey questionnaire was used to collect both quantitative and qualitative data from the selected academic staff of these five universities. The aim was to identify, describe and compare variables to ascertain differences and relationships of the dependent and independent variables used for hypotheses with appropriate and amenable test statistics.

Sources of Data

In the course of carrying out the research, two sources were used to gather the necessary information. These included: primary and secondary sources of data.

Primary Sources of Data

The primary data was collected through systematically planned questionnaire administered to the sampled lecturers of the university under study.

Secondary Sources of Data

The secondary sources of data for the study were from published sources like: textbooks, journals, Internet and statistical bulletins, etc.

Population of the Study

The study was limited to five (5) State universities in the South East of Nigeria. The universities included: Enugu State University of Science and Technology Enugu, Ebonyi State University, Imo State University Abakaliki, Anambra State University of Science and Technology Uli, and Abia State University Uturu, Okigwe. The population of the study was three thousand two hundred and fifty (3250) which consisted of lecturers both male and female of different cadres in the selected universities. It became imperative to study the lecturers since their duties are to search for knowledge, (Research), and impact the knowledge to students.

Table 1: Universities and the Population for the Study

S/N	NAME OF UNIVERSITY	LOCATION	ASSISTANT LECTURER	LECTURER II	LECTURER 1	SENIOR LECTURER	READER	PROFESSOR	TOTAL NO OF STAFF
1	Enugu State University of Science and Technology	Enugu State	20	234	189	197	35	45	698
2	Imo State University, Owerri.	Imo State	8	233	115	173	42	42	633
3	Abia State University, UturuOkigwe,	Abia State	12	213	138	211	38	38	650
4	Ebonyi State University, Abakaliki,	Ebonyi State	27	220	128	217	29	38	659
5	Anambra State University, Igbariam,	Anambra State	9	203	124	211	23	40	610
	Total								3250

Source: Personnel Units of the South East Universities.

Sample Size Determination

Considering the relative large size of the population, using the entire population would be cumbersome, hence the need for sampling. In dealing with large the population, the sample size was determined using normal approximation to the binomial distribution. The approximation was premised on the fact that the population was large and the sample was small. Therefore to determine the sample size for small populations, we used the normal approximation to the hyper geometric distribution. The sample size formula includes:

$$n = \frac{Z^2Npq}{Ne^2 + Z^2pq}$$

Where:

n = the required sample size

N = the population size

P and q = the population proportions. It is set at 0.5

Z = the value that specifies the level of confidence. Level of confidence was 97%, in which case z was set to 2.18.

e = Error margin. The study was set with an accuracy of plus or minus 3%, that is, (e) is set to 0.03.

$$n = \frac{3250 \times 2.18^2\ 0.5 \times 0.5}{0.03^2\ (3250) + 2.18^2\ 0.5 \times 0.5} = \frac{3861.3.}{2.925+4.7524 \times 0.5x0.5} = \frac{3861.3}{4.1131} = 938.78 = 939.$$

Therefore, the sample size approximately for the study was 939.

Sampling Technique

For the purpose of the study, the actual population was three thousand, two hundred and fifty (3250) academic staff. However, to ensure that the sample was represented of each university, the proportionate stratified random sampling technique was used to determine the number of selected academic staff from each of the five universities. That ensured a fair representation of the respondents in each stratum of the population for the study. The proportional allocation formular was utilized to ensure equitable representation of the universities

.

$$Nh \quad \frac{nxNh}{N}$$

Where nh = number of questionnaire allocated to each of the institution
n = Total sample size
Nh = Number of proposed lecturers from each university
N = Population size.
Example: For Enugu State University of Science and Technology:
Number of questionnaire $\frac{3250 \times 939}{3250} = 939$

Table 2: Questionnaires Allocation to Each University

S/NO	Name of the University	Population	Proportional Distribution
1	Enugu State University of Science and Technology	698	202
2	Imo State University, Owerri.	633	183
3	Abia State University, Uturu Okigwe,	650	188
4	Ebonyi State University, Abakaliki,	659	190
5	Anambra State University, Igbariam,	610	176
	Total	3250	939

Source: Personnel Units of the South East Universities.

Method of Data Collection and Distribution

The instrument for data collection in the study was structured questionnaire. The structured questionnaire consisted of sections A and B. Section A contained a total of seven items to elicit responses from research subjects. Section B consisted of measures of shared knowledge, academic proficiencies, tacit knowledge, learning outcomes, information communication technology competencies, training of academic staff, knowledge capturing, staff retention, knowledge creativity and academic delivery. The measuring instruments for each of the attitudinal variables were developed and designed on a 5-point Likert Scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD) with their corresponding weights of 5, 4, 3, 2 and 1, respectively.

Validity of Research Instrument

Face and content validities were used for the validation of the study and validators (Internal assessors, a data analyst, and management experts) ensured that the items of the questionnaire captured the variables of the study. The variables were the objectives, research questions and the hypotheses of the study which were structured on the basis of the related literature awareness. Again, the structure and language of the questionnaire were modified so as to minimize the effect of error such as inconsistency and ambiguity.

Reliability of the Instrument

In the study, the test-retest method of reliability was used. The same research instrument was administered to 60 respondents in the five universities under study in order to ascertain the extent to which there was a correlation between the two sets of scores obtained. The study employed the Spearman's Rank Correlation Coefficient denoted as r_s to determine the strength of the relationship and hence the reliability of the instrument and the formula is stated thus:

Where: $r_s = 1 - \frac{6\sum d^2}{n(n^2-1)}$

d: = the difference between any pair of rank, and
n = the number of data pairs

Table 3: The Computation of the Reliability is Thus

Scale	1st Respondent	Rank	2nd Respondent	Rank	D	d^2
SA	24	1	30	1	0	0
A	15	2	13	3	-1	1
U	10	4	7	4	0	0
D	12	3	14	2	1	1
SD	9	5	6	5	0	0
Total	60		60			2

Substituting the values:

$$r_s = 1 - \frac{6\times 2}{5(5^2-1)}$$

$$r_s = 1 - \frac{12}{5(25-1)}$$

$$r_s = 1 - \frac{12}{5(24)}$$

$$r_s = 1 - \frac{12}{120}$$

$$r_s = 1 - 0.1$$

$$r_s = 0.9$$

Since the correlation coefficient is 0.9, it implied that there was reasonable agreement between the two sets of test administered. Therefore, we concluded that the measuring instrument was reliable.

Data Analyses Technique

Usually, in statistics, the types of data collected determine the tool to be used in the presentation and subsequent analysis. The item questionnaire which was designed with a view to pursuing the achievement of the research objectives (that was stated in chapter one) was analyzed using descriptive statistics such as the mean and standard deviation. The hypothesis was tested using Pearson correlation coefficient and Kolmogorov-Smirnov Z-test. Pearson correlation coefficient was used in testing hypothesis three in other to obtain the relationship between the dependent and independent variable while Kolmogorov-Smirnov Z-test was adopted for first, second, fourth and fifth objectives since the sample size was more than thirty and normal distribution was assumed. The formula below was applied for Kolmogorov-Smirnov Z-test:

The Z-score was found as

$$Z = \frac{\bar{x} - \mu}{s/\sqrt{n}}$$

where:

z = standard normal deviate
$\bar{x}$ = mean of the mean responses
μ = Population mean
S = standard deviation

Decision Rule

The rule in the use of the z-test criterion was to accept the alternate hypothesis if the calculated z-score was higher than the theoretical z-score. The hypothesis $Z_{critical} > Z_{cal}$, do not reject, otherwise reject. was not to be rejected if the theoretical value was less than the calculated z-value.

Data Presentation

Table 4: Distribution and Return of the Questionnaire

S/NO	State Universities	Number Distributed	No Returned	Percent %	No not Returned	Percent %
1.	Abia (ABSU)	202	154	16	48	5
2.	Anambra (ANSU)	183	151	16	32	4
3.	Ebonyi (EBSU)	188	160	17	28	3
4.	Enugu(ESUT)	190	171	18	19	2
5.	Imo (IMSU)	176	148	16	28	3
Total		939	784	83	155	17

Source: Field Survey, 2021

As shown in table 4, a total number of nine hundred and thirty nine (939) copies of the questionnaire were distributed to the respondents (the academic staff of the above universities). Out of the nine hundred and thirty nine (939) distributed, seven hundred and eighty four (784) copies were returned, giving a response rate of 83 percent. Therefore, 155 out of the 939 copies of questionnaire administered were not returned, thus, giving a non-response rate of 17 percent.

Table 5 : Presents the Various Frequency and Percentage of the Respondents from the State University

University	Frequency	Percent	Valid Percent	Cumulative Percent
Abia State	139	17.7	17.7	17.7
Anambra State	151	19.3	19.3	37.0
Imo State	153	19.5	19.5	56.5
Ebonyi State	165	21.0	21.0	77.6
Enugu State	176	22.4	22.4	100.0
Total	784	100.0	100.0	

Source: Field Survey, 2021

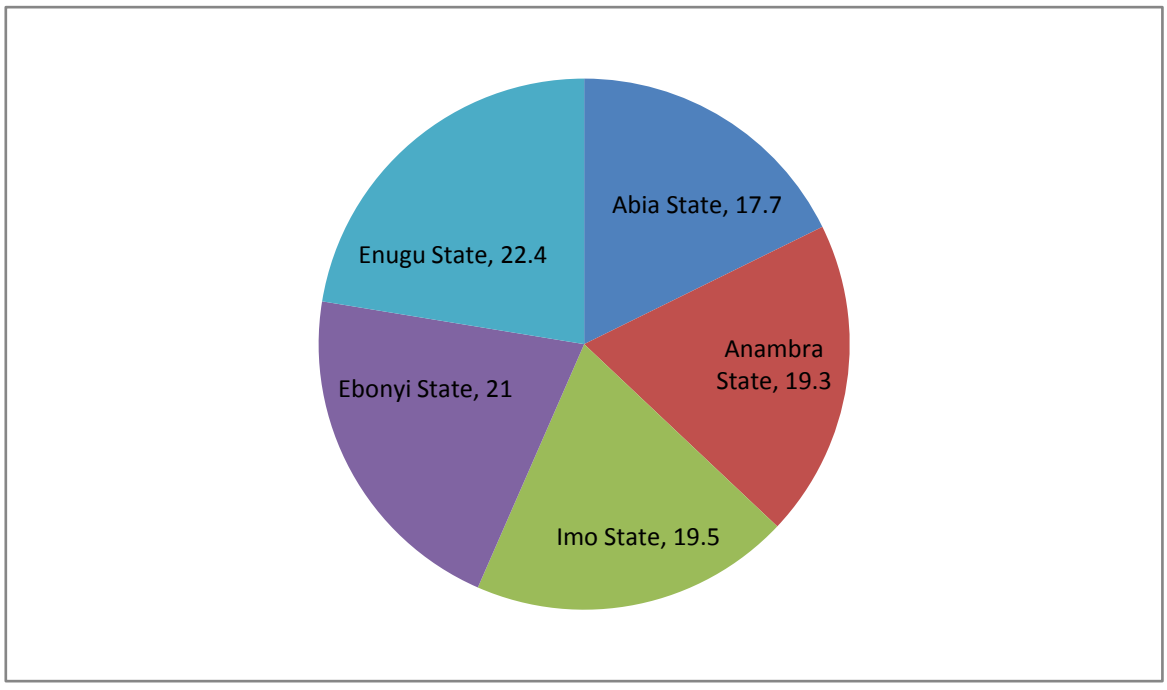

Table 5 , represented in the pie chart figure 1, indicates that 139 respondents out of 784, representing 17.7 percent from Abia State University; 151 respondents with 19.3 percent from Anambra State University; 153

respondents representing 19.5 percent from Imo State University; 165 respondents representing 21 percent Ebonyi state University , while 175 respondents representing 22.4 percent from Enugu State. This implies that greater proportion of the respondents came from Enugu State University of Science and Technology, Enugu State.

Bio-Data

This subdivision comprises of the bio data of the respondents based on the university, age, marital status, educational qualifications and years of experience of the respondents under study.

Table 6 : Age Distribution of the State Universities

	Frequency	Percent	Valid Percent	Cumulative Percent
20 - 29years	186	23.7	23.7	23.7
30 - 39years	424	54.1	54.1	77.8
40 years- and above	174	22.2	22.2	100.0
Total	784	100.0	100.0	

Source: Field Survey, 2021

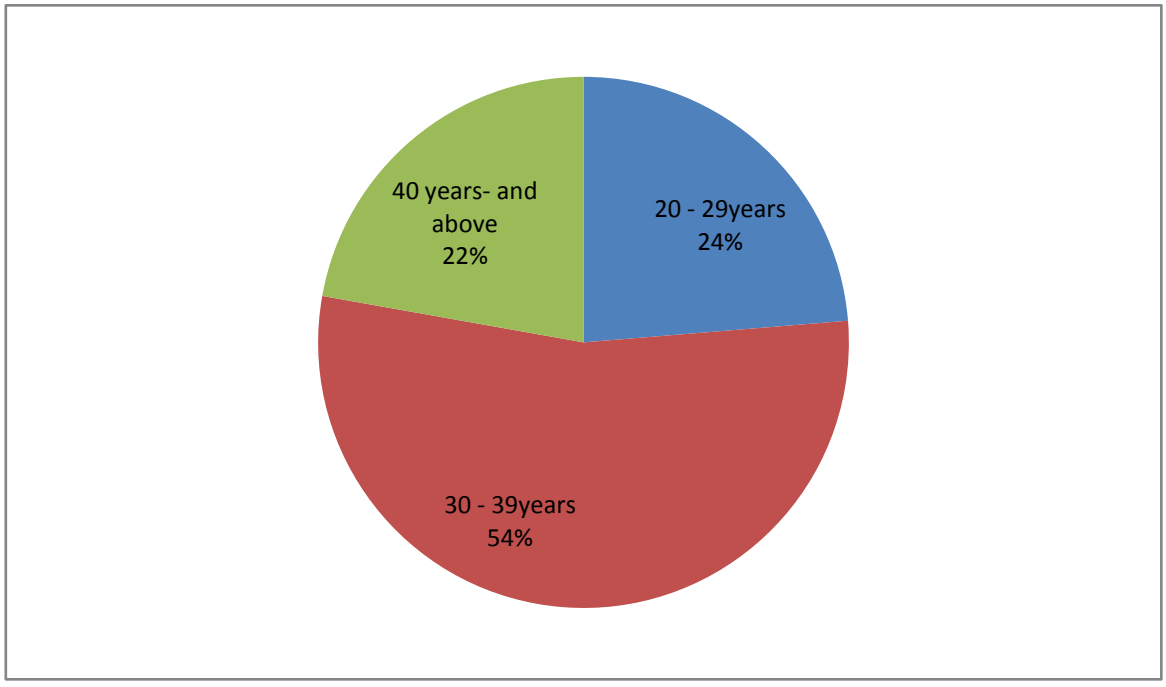

Table 6, represented in the pie chart figure 2, indicates that 186 respondents out of 784 representing 23.7 percent were 40 years and above, 424 respondents with 54.1percent were within the age bracket of 30-39, 174 respondents representing 22.2 percent were within the age bracket of 20-29years. This implies that greater proportion of the respondents fall within the ages of 30-39 years.

Table 7: Distribution of Respondents according to Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	70	8.9	8.9	8.9
Married	693	88.4	88.4	97.3
Widowed	13	1.7	1.7	99.0
Divorced	8	1.0	1.0	100.0
Total	784	100.0	100.0	

Source: Field Survey, 2021

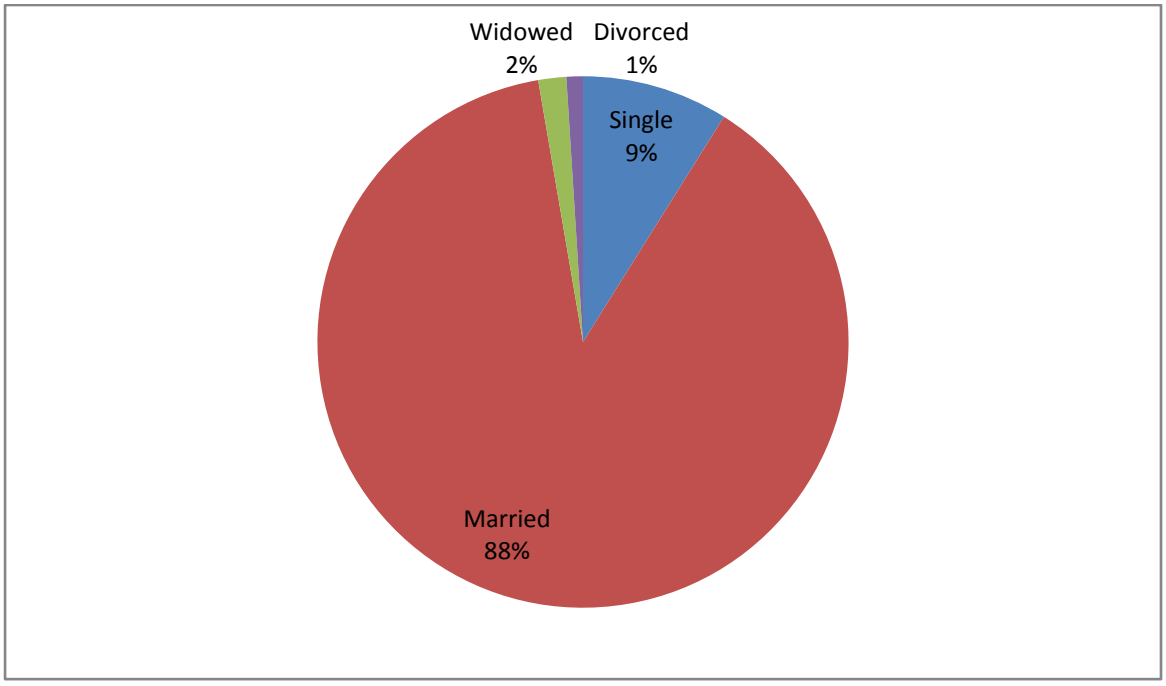

Figure 3: Pie Chart of the Marital Status of Distribution of the Respondents.
Source: Field Survey, 2021

Table 7, represented in the pie chart figure 3, reveals that 70 respondents out of 784 representing 8.6 percent were single, 693 respondents representing 88.4 percent were married. 13 respondents representing 1.7 percent were widow, 8 respondents representing 1.0 percent were divorced. This implies that greater percentages of respondents are married and responsible.

Table 8 : Distribution of Respondents According to Educational qualification

	Frequency	Percent	Valid Percent	Cumulative Percent
MBA	93	11.8	11.8	14.8
M.Sc	275	35.0	35.0	62.6
Ph.D	416	53.2	53.2	100.0
Total	784	100.0	100.0	100.0

Source: Field Survey, 2021

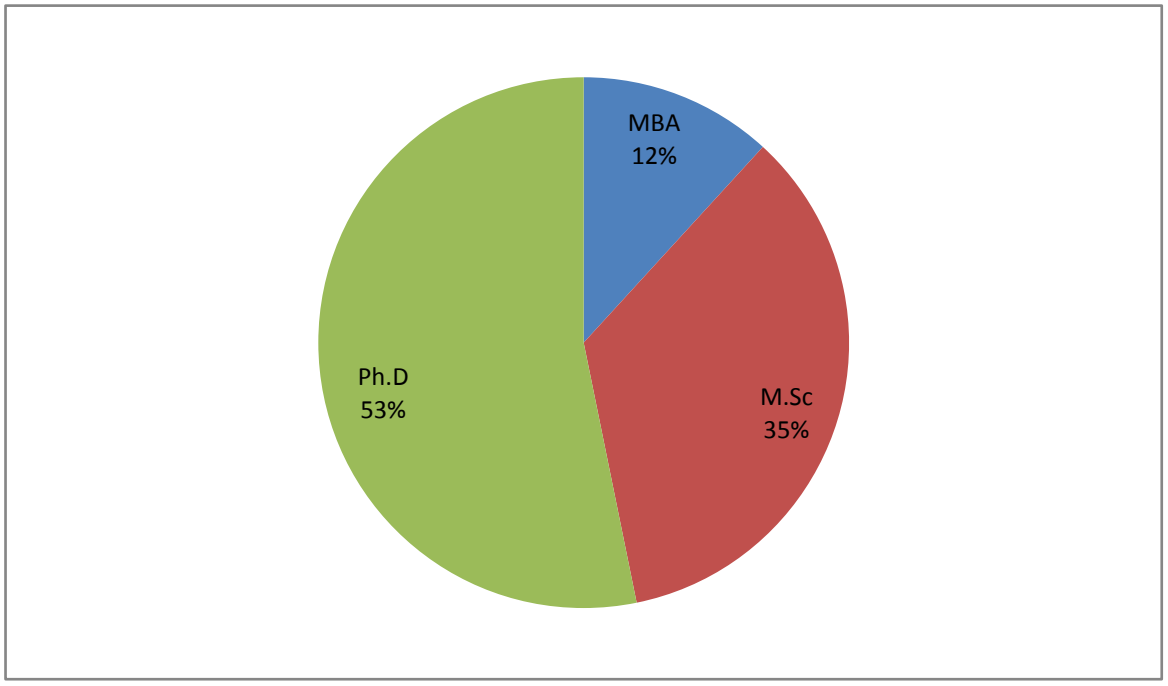

Figure 4: Pie Chart of the Educational Qualification of Distribution of the Respondents.Source: Field Survey, 2021

Table 8, represented in the pie chart figure 4, reveals that 93 respondents representing 11.8 were holding MBA. While 259 respondents representing 33.0 percent were holders of Masters degree and 416 respondents representing 53.2 percent were holders of Ph.D

Table 9 : Number of Distribution According to Years of Experience

No. of Years	Frequency	Percent	Valid Percent
Below 5 years	36	4.6	4.6
5-10 years	148	18.9	18.9
11- 20 years	311	39.7	39.7
21-30 years	185	23.6	23.6
31 years and above	104	13.3	13.3
Total	784	100.0	100.0

Source: Field Survey, 2019

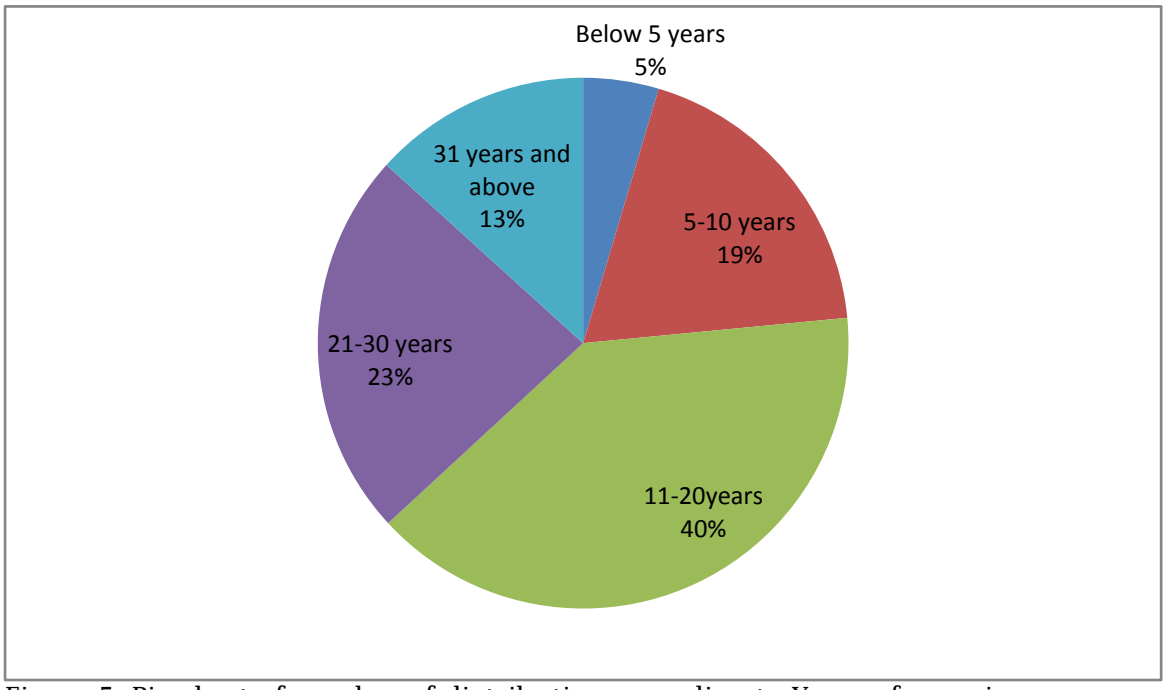

Figure 5: Pie chart of number of distribution according to Years of experience.
Source: Field Survey, 2021

Table 9 represented in the Pie chart figure 5, shows that 36 respondents out of 784 representing 4.6 percent were below 5 years; 148 respondents with 18.9 percent were within the years of experience bracket of 5-10; 311 respondents representing 39.7 percent were within the years of experience bracket of 11-20years; 185 respondents representing 23.6 percent were within the years of experience bracket of 21-30; while 104 respondents representing 13.3 percent were within the years of experience bracket of 31 years and above. This implies that greater proportion of the respondents fall within the year's of experience bracket of 11 - 20 years.

Research Question one: What contribution does tacit knowledge has on output of State Universities in South East, Nigeria?

Table 10: Response on the statement Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities.

Respondents	Frequency	Percent	Valid Percent	Mean($\bar{\chi}$)	Std.
Strongly Agree	307	39.2	39.2	4.1355	.43852
Agree	47	6.0	6.0	3.8809	.51695
Neutral	203	25.9	25.9	2.9892	.48306
Disagree	191	24.4	24.4	2.4377	.57769
Strongly disagree	36	4.6	4.6	1.8500	.65269
Total	784	100.0	100.0	3.05866	0.533782

Source: Field Survey, 2021

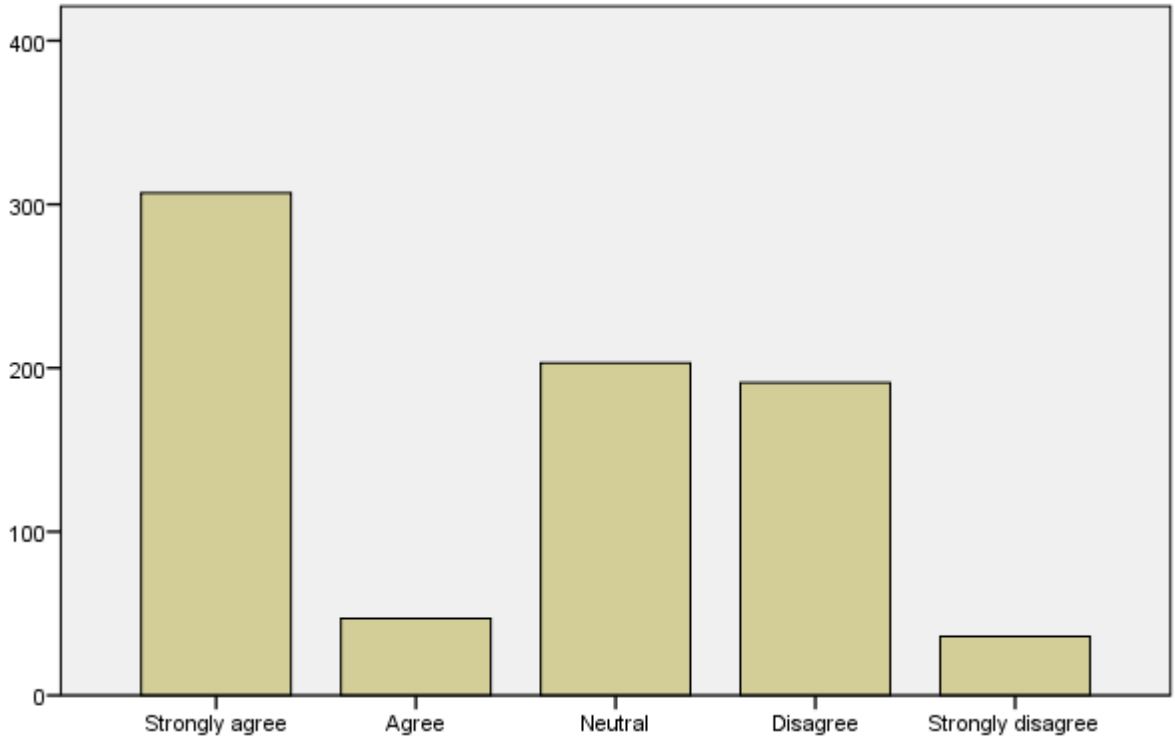

Figure 6: Single Bar Chart of Responses on Extent Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities.
Source: Field Survey, 2021

Table 10, and represented in the bar chart figure 6, indicates that 307 respondents out of 784 representing 39.2 percent with mean score of (4.1355) and standard deviation of (.43852) strongly agree that Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities. 47 respondents representing 6.0 percent with mean score of (3.8809) and standard deviation of (.51695) Agree, 203 were neutral respondents representing 25.9 percent with mean score of (2.9892) and standard deviation of (.48306) that Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities. 191 respondents representing 24.4 percent with mean score of (2.4377) and standard deviation of (.57769) disagree. 36 respondents representing 4.6 percent with mean score of (1.8500) and standard deviation of (.65269) strongly disagree that Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities. Total mean score of (3.05866) and standard deviation of (0.533782). Therefore, in response with the oral interview guide, Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities. This is because Knowledge management is achieved through creating, sharing, and applying knowledge, as well as through feeding best practices and the valuable lessons learned into corporate memory.

Table 11: Response on the statement Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others

Respondents	Frequency	Percent	Valid Percent	Mean($\bar{\chi}$)	Std.
Strongly Agree	178	22.7	22.7	4.1360	.56583
Agree	210	26.8	26.8	3.9876	.35222
Neutral	168	21.4	21.4	2.9060	.42096
Disagree	187	23.9	23.9	2.4182	.56786
Strongly disagree	41	5.2	5.2	1.8780	.58801
Total	784	100.0	100.0	3.06516	0.498976

Source: Field Survey, 2021

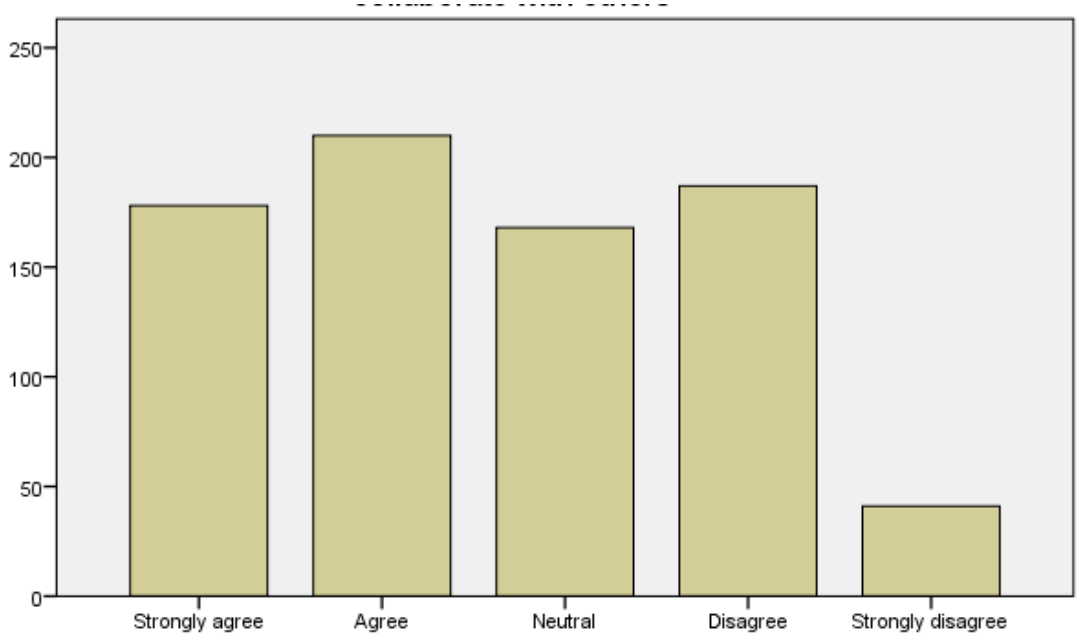

Figure 7: Single Bar Chart of Responses on Extent Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others.
Source: Field Survey, 2021

Table 11, represented in the bar chart figure 7, indicates that 178 respondents out of 784 representing 22.7 percent with mean score of (4.1360) and standard deviation of (.56583) strongly agree that Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others. 210 respondents representing 26.8 percent with mean score of (3.9876) and standard deviation of (.35222) Agree, 168 were neutral respondents representing 21.4 percent with mean score of (2.9060) and standard deviation of (.42096) that Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others. 187 respondents representing 23.9 percent with mean score of (2.4182) and standard deviation of (.56786) disagree. 41 respondents representing 5.2 percent with mean score of (1.8780) and standard deviation of (.58801) strongly disagree that Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others. Total mean score of (3.06516) and standard deviation of (0.498976). Therefore, in response with the oral interview guide, learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others. This is because knowledge is transferable.

Table 12: Response on the statement Tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively.

Respondents	Frequency	Percent	Valid Percent	Mean($\bar{\chi}$)	Std.
Strongly Agree	84	10.7	10.7	4.2571	.49242
Agree	274	34.9	34.9	4.0555	.41278
Neutral	199	25.4	25.4	2.9960	.47353
Disagree	166	21.2	21.2	2.5181	.50696
Strongly disagree	61	7.8	7.8	1.7705	.49509
Total	784	100.0	100.0	3.11944	0.476156

Source: Field Survey, 2021

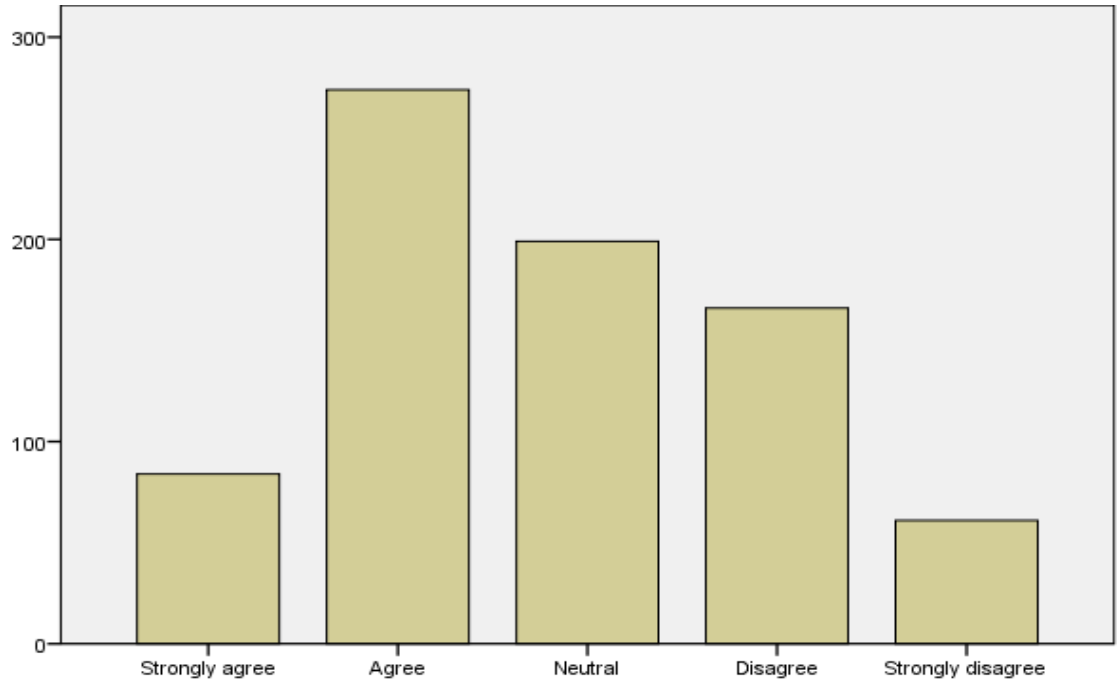

Figure 8: Single Bar Chart of Responses on Extent Tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively.

Source: Field Survey, 2021

Table 12, and represented in the bar chart figure 8, indicates that 84 respondents out of 784 representing 10.7 percent with mean score of (4.2571) and standard deviation of (.49242) strongly agree that tacit knowledge in the brain of heads of the academics when transfer to students

affects their life and learning outcomes positively. 274 respondents representing 34.9 percent with mean score of (4.0555) and standard deviation of (.41278) Agree, 199 were neutral respondents representing 25.4 percent with mean score of (2.9960) and standard deviation of (.47353) that tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively. 166 respondents representing 21.2 percent with mean score of (2.5181) and standard deviation of (.50696) disagree. 61 respondents representing 7.8 percent with mean score of (1.7705) and standard deviation of (.49509) strongly disagree that tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively. Total mean score of (3.11944) and standard deviation of (0.476156). Therefore, in response with the oral interview guide, tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively, This is because the benefits of student teachers being instrumental in initiating and asking questions which can elicit experienced teachers' tacit knowledge areclear.

Table 13:Response on the statement Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc.

Respondents	Frequency	Percent	Valid Percent	Mean(χ)	Std.
Strongly Agree	67	8.5	8.5	3.9522	.79551
Agree	357	45.5	45.5	3.7630	.69345
Neutral	120	15.3	15.3	3.3450	.57509
Disagree	170	21.7	21.7	2.6012	.64597
Strongly disagree	70	8.9	8.9	1.9886	.68684
Total	784	100.0	100.0	3.13	0.679372

Source: Field Survey, 2021

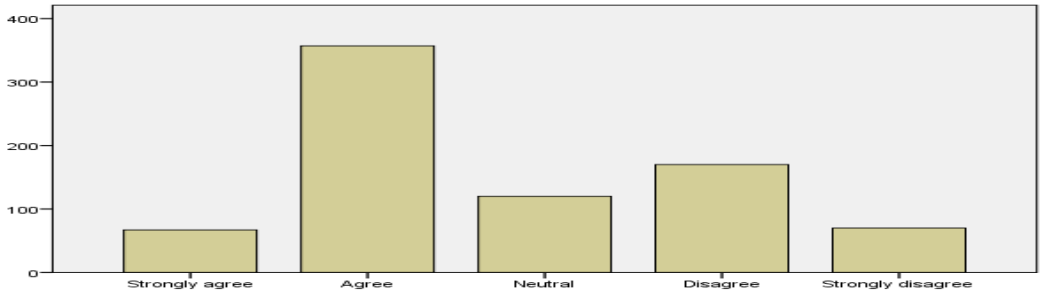

Figure 9: Single Bar Chart of Responses on Extent Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc.

Source: Field Survey, 2021

Table 13, and represented in the bar chart figure 9, indicates that 67 respondents out of 784 representing 8.5 percent with mean score of (3.9522) and standard deviation of (.79551) strongly agree Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc. 357 respondents representing 45.5 percent with mean score of (3.7630) and standard deviation of (.69345) Agree, 120 were neutral respondents representing 15.3 percent with mean score of (3.3450) and standard deviation of (.57509) that Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc. 170 respondents representing 21.7 percent with mean score of (2.6012) and standard deviation of (.64597) disagree. 70 respondents representing 8.9 percent with mean score of (1.9886) and standard deviation of (.68684) strongly disagree that Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc. Total mean score of (3.13) and standard deviation of (0.679372). Therefore, in response with the oral interview guide, Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc. This is because universities are generally very favorable to tacit knowledge transfer.

Table 14:Response on the statement Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights.

Respondents	Frequency	Percent	Valid Percent	Mean($\bar{\chi}$)	Std.
Strongly Agree	64	8.2	8.2	3.9062	.81569
Agree	358	45.7	45.7	3.7693	.69432
Neutral	113	14.4	14.4	3.3894	.58054
Disagree	177	22.6	22.6	2.6339	.63334
Strongly disagree	72	9.2	9.2	1.9778	.69246
Total	784	100.0	100.0	3.13532	0.68327

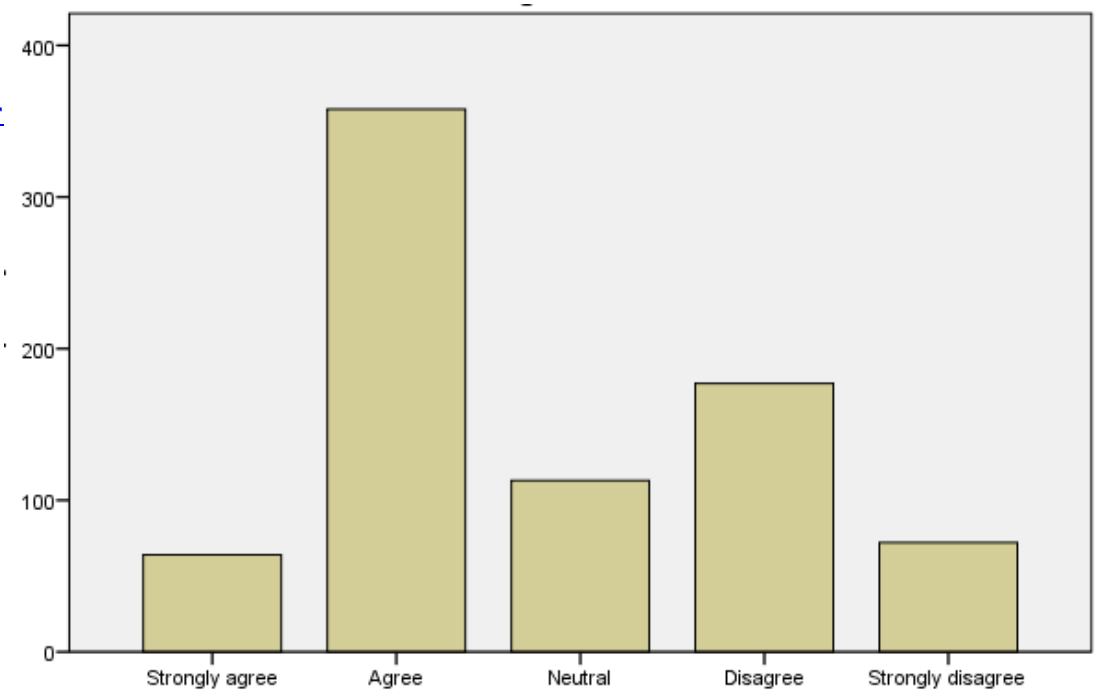

Figure 10: Single Bar Chart of Responses on Extent Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights.
Source: Field Survey, 2021

Table 14, and represented in the bar chart figure 10, indicates that 64 respondents out of 784 representing 8.2 percent with mean score of (3.9062) and standard deviation of (.81569) strongly agree that Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights. 358 respondents representing 45.7 percent with mean score of (3.7693) and standard deviation of (.69432) Agree, 113 were neutral respondents representing 14.4 percent with mean score of (3.3894) and standard deviation of (.58054) that Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights. 177 respondents representing 22.6 percent with mean score of (2.6339) and standard deviation of (.63334) disagree. 72 respondents representing 9.2 percent with mean score of (1.9778) and standard deviation of (.69246) strongly disagree that Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights. Total mean score of (3.13532) and standard deviation of (0.68327). Therefore, in response with the oral interview guide, Quality of knowledge outcome propels individuals in the university to create, acquires, transform knowledge and modify his/her behavior to reflect new insights. This is because of a high level of commitment from universities towards the transfer of tacit knowledge.

Test of Hypothesis

Hypothesis One

Table 15: Tacit knowledge highly contributes to output of State Universities in South East, Nigeria

Contingency Table of Research Question one

S/N		SA	A	N	D	SD
1.	Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities.	307	47	203	191	36
2.	Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in life long learning, to access and evaluate information, to communicate effectively and to collaborate with others in solving complex open-ended problems,	178	210	168	187	41
3.	Tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively.	84	274	199	166	61
4.	Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc.	67	357	120	170	70
5.	Quality of knowledge outcome propels individuals in the university to create, acquire, transform knowledge and modify his/her behavior to reflect new insights.	64	358	113	177	72
	Total	700	1246	803	891	280

Table 16:Descriptive statistic on Tacit knowledge highly contributes to output of State Universities in South East, Nigeria

One-Sample Kolmogorov-Smirnov Test

		Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities.	Learning outcome prepares the students for the challenges of life in the knowledge society including the ability and readiness to engage in life long learning, to access and evaluate information, to communicate effectively and to collaborate with others	Tacit knowledge in the brain of heads of the academics when transfer to students affects their life and learning outcomes positively.	Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc.	Quality of knowledge outcome propels individuals in the university to create, acquire, transform knowledge and modify his/her behavior to reflect new insights.
N		784	784	784	784	784
Normal Parameters[a,b]	Mean	3.51	3.38	3.20	3.23	3.21
	Std. Deviation	1.341	1.217	1.124	1.149	1.155
Most Extreme Differences	Absolute	.259	.190	.219	.289	.291
	Positive	.196	.162	.146	.166	.170
	Negative	-.259	-.190	-.219	-.289	-.291
Kolmogorov-Smirnov Z		7.244	5.319	6.139	8.099	8.153
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000

a. Test distribution is Normal.
b. Calculated from data.

Decision Rule

If the calculated Z-value is greater than the critical Z-value (i.e $Z_{cal} > Z_{critical}$), reject the null hypothesis and accept the alternative hypothesis accordingly

Result

With Kolmogorov-Smirnon Z – results showed that Tacit Knowledge which is deeply rooted in actions, procedures, commitment, ideals, values etc is capable of producing quality of learning outcome in the universities has value of 7.244. Learning outcome prepares the

students for the challenges of life in the knowledge society including the ability and readiness to engage in lifelong learning, to access and evaluate information, to communicate effectively and to collaborate with others has value of 5.319. Tacit knowledge in the brain or heads of the academics when transfer to students affects their life and learning outcomes positively has value of 6.139. Quality of learning outcome in the university helps work to be substitute with more intelligent kinds of work, which include; the activities of lecturers, managers, researchers, consultants, engineers, lawyers, policy developers and teachers etc. has value of 8.099. Quality of knowledge outcome propels individuals in the university to create, acquire, transform knowledge and modify his/her behavior to reflect new insights, has value of 8.153 and on Asymp. Significance of 0.000, the responses from the respondents as display in the table is normally distributed. This affirms that the assertion of the tacit knowledge highly contributes to output of State universities in South East, Nigeria

Decision

Furthermore, comparing the calculated Z- values against the critical Z- value of 2.18 (2-tailed test at 95% level of confidence) the null hypothesis were rejected. Thus the alternative hypothesis was accepted which states that Tacit knowledge highly contributes to output of State Universities in South East, Nigeria.

CONCLUSION

In conclusion this study showed that to a great extent tacit knowledge positively contributed to academic proficiencies, learning outcome, training of academic staff of state universities in South East, Nigeria. Tacit knowledge is highly personal (held within the holder), subjective, difficult to formalize, articulate and communicate fully, experience based, contextualized, job specific, transferred through conversation or narrative, not captured by formal education or training and may even be subconscious but capable of becoming explicit knowledge.

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