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**Business-Information Technology Alignment and  
Sustainability of State-Owned Tertiary Institutions in  
Rivers State, Nigeria**

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## **Business-Information Technology Alignment and Sustainability of State-Owned Tertiary Institutions in Rivers State, Nigeria**

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### **ABSTRACT**

**Purpose:** This work examined Business-Information Technology Alignment and Sustainability of State-Owned Tertiary Institutions in Rivers State, Nigeria. The objective was to investigate the relationship between strategy-driven alignment and sustainability of state-owned tertiary institutions in Rivers State, Nigeria.

**Methodology:** To achieve this, two research questions and hypotheses were designed to guide the study. The population for this work comprised 1,224 staff between grade level 11 and above in the five state-owned tertiary institutions in Rivers State. The sample size of this study consisted of 302 selected using the Taro-Yamane sampling technique. The instrument for data collection was the questionnaire. The test for the internal regularity of the instrument was conducted using Spearman Rank Order correlation. Mean and standard deviation were used to answer the research questions; Statistical Package for Social Science out version 23.0 was used to test the null hypotheses.

**Findings:** It was found that strategy-driven alignment significantly influenced the sustainability of quality service delivery of the state-owned tertiary institutions in Rivers State, Nigeria; the study therefore concluded that adopting the concept of business-information technology alignment will invariably result to sustainability in tertiary institutions.

**Recommendation:** The study recommended among other things that: Federal and state governments as well as tertiary institution's management should, as a matter of urgency, develop credible strategy-driven alignment approach that will ensure that the unique objectives of the tertiary institutions are derived seamlessly while using IT, that tertiary institution management should fore-handily train all IT staff on the objectives of the institution so that everyone in IT has a visceral understanding of the institutions intention with regards to quality service delivery.

**Keywords:** *Business-information technology, alignment, sustainability, tertiary institutions, quality, service, delivery*

## INTRODUCTION

The rate at which educational activities, aims as well as time frame are been condensed in the tertiary institutions in the recent times are becoming really alarming. Academic Calendar for example in the Rivers State University, Port Harcourt runs from October to September of the next year. These disruptions occasioned by several activities like insecurity challenges as we saw in the endsars protest, artificial and natural disasters like flooding, instability, terrorism, threats of war, pandemic, no adequate e-learning provision, expansions, and so on has caused breaches in the academic teaching and learning. The knowledge that learners ought to acquire in the cause of learning are often cut short in a bid to catch up with the academic calendar. Teachers and learners struggle so much to cover their curriculum which on many occasions does not speak good about education as things done in a hurry does not usually yield good produce.

It is worthy of note that most Organizations (institutions) are struggling when it comes to maintaining efficiency, improving their brand value and reputation, providing a platform for innovation, attracting and retaining reputable staff, achieving growth, cutting costs and strengthening stakeholder relations. Studies have shown that poor organizational achievement most times are not always the fault of market conditions, rigid competition, absence of resources or any of the other usual visible or invisible factors. One can accept that most times, most organizations of a truth do not manage proven business priorities in a way that sustains success. They begin with a product or service idea that seem good to them, they also focus on a strategic approach and tactical practice that seem good to them for its implementation after which they move to the people who will make their product or service a reality leaving the organizational priorities at the executed order. According to Root, (2019) “without a coherent strategy, companies (organizations) does not have identifiable business objectives. The organization lacks the focus needed to achieve corporate goals as well develop plans that will move the company forward. A lack of objectives means that your company (organization) does not have a clear vision for the future”.

It has proven that organizations are now more aware that those businesses that maintained success drew their priorities in a very different order. Instead of strategy-process-people and maybe culture, they are now refocusing on winning-culture first then to the people not just the people but the right people who are motivated, committed, capable and competent on the organization’s business culture. More enlightened organizations have discovered that most business fads do not steer an organization’s culture and people. It most times can only make a one-time improvement and over time, reverts to wasteful habits because the commitments to those shared business values are not fully integrated. It is also a fundamental truth that best process is usually of little importance in the hands of unconcerned or ineffectual performers. High performers as well as average performers who are devoted to high achievement principles will always find ways to discern and ad infinitum execute as well as advance upon improved processes. In this digital era where technology keeps evolving and transforming the business landscape, the need for Business-Information Technology alignment becomes inevitable especially in the area of quality service delivery in Tertiary Institutions. This is because situations where students studying courses of five years as the stipulated duration to enable them effectively cover their curriculum both in theory and practical see themselves spending more than that number of years yet not been able to cover

the curriculum due to some of the reasons mentioned earlier. The University Management in a bid to measure up with the objective and academic calendar ends up re-strategizing in order to salvage whatever they can, just to enable the students graduate so as to avoid longer stay at school. One would also bear in mind that the Secondary School Level churns out students every year who also aspires to get into the tertiary institutions. The inability of the students in session to complete their programme within the stipulated academic calendar possess a serious challenge in the ability to sustain the tertiary institutions. The effect of which exposes the institutions of been relegated to the background. Most parents would prefer to send their children and wards to private tertiary institutions or better still to tertiary institutions in foreign countries. In order to address this challenge, this study seeks to contribute by x-raying the relationship between Business-Information Technology Alignment and Sustainability of State-Owned Tertiary Institutions in Rivers State, Nigeria.

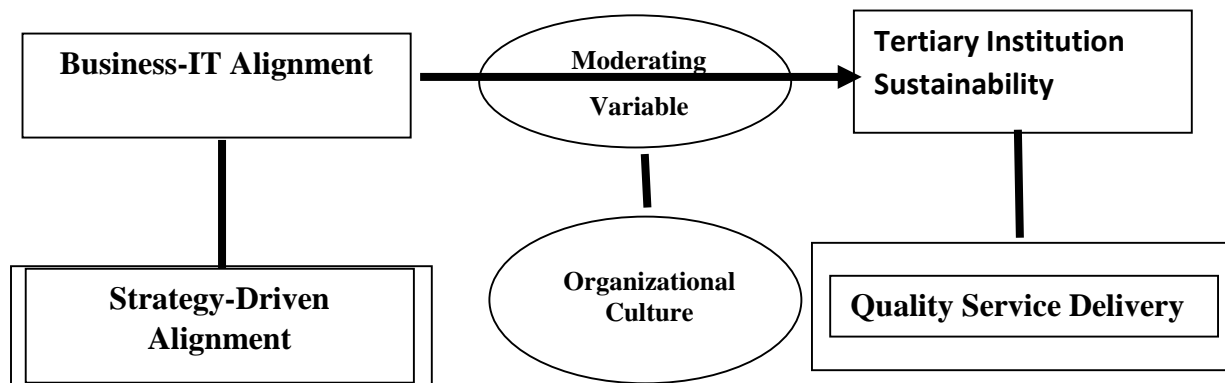
The objectives of this study were;

1. To investigate the relationship between strategy-driven alignment and the sustainability of State-owned tertiary institutions in Rivers State.
2. To investigate the moderating role of organizational culture on the relationship between business-information technology alignment and the sustainability of state-owned tertiary institutions in Rivers State, Nigeria.

The study achieved this by answering the following research questions:

1. What is the relationship between business-information alignment and sustainability of state-owned tertiary institutions in Rivers State?
2. Does organizational culture significantly moderate the relationship between Business-Information technology alignment and the sustainability of State-Owned tertiary Institutions in Rivers State?

### Conceptual Framework for the study



**Figure 1: Conceptual framework on the relationship between business-information technology alignment and sustainability of state-owned tertiary institution in Rivers State, Nigeria.**

## LITERATURE REVIEW

This investigation was hinged on the Strategic Alignment Theory. This theory was propounded by Henderson and Venkatraman (1993). They understood that the inability of organizations to obtain much needed benefit from IT investments is because of the unalignment between the business and IT tactic and that of the entities. Therefore, Strategic Alignment Model or theory (SAM) was developed. This theory proposed the exploiting of information technologies in their competitive role (strategic plans and activities) as well as the management of information technology. Strategic alignment model states that if a firm wants to generate best performance levels, it should align its IT strategy, IT personnel and management, Cost and budget with organizational strategy and structure. Meaning that, firms can achieve best performance levels by aligning information technology strategy with corporate strategy and structure.

Successful IT strategic alignment means developing and sustaining a mutual relationship among IT approach and business policy so that the correlation benefits both parties. Business-IT placement has been taken as a vital subject, both scholastically and practically. Scholars has been exploring the implications of IT with its impact on institutional performance (Coltman, Tallon, Sharman, & Queiroz, 2015; Luftman, 2004). Successful Business-Information Technology Alignment is formation of worth in processes of entity's interior and outside processes (Juneja, 2015). This worth is usually fashioned using technology as well as developments on the entity's processes. It is worthy to note that IT has become an enabler of administrative processes which helps to ensure amplified productivity and advanced value within institute because organizations influence on IT to systemize.

The impasse of aligning IT with business demands are not new. The rise of information systems in entities has awakened the need for placement of business activities and tactics and in response to this problem, different methods of IT arrangement and systems were developed. Examples are Business System Planning, Information System Study and Information Engineering. These approaches can be regarded as the predecessors of Business-IT Alignment theory owing to the fact that the methodologies were developed in the 1970s and 1980s. It is not surprising that the goal of these methodologies became the foundation for the development of large information systems. The application of these methodologies in practice resulted however in extensive schemes and reports, though most times lacking the inclusion of client's viewpoint. Silvius (2007) stated that IT planning is fashioned as an apparatus for business administration, a procedure by and for IT experts.

### **Business-Information Technology Alignment**

AlKhateri (2017) defined business-Information technology alignment as “applying IT in a suitable and timely manner, in harmony with business strategies, goals and needs”. Business-IT alignment has also been defined as the working of information technology in proximity with the business decision makers to inflate the financial returns or enhance the productivity of an entity. Business-IT alignment was also said to be a process in which a business entity applies IT to drive business objectives, improve its financial performance and enhance its marketplace competitiveness. Business-IT alignment could also be defined as a discipline that agrees or that harmonizes the IT synergy with the goal of maximizing value formed by the organization. It is a process, not a point



in time event. Sibanda and Ramrathan (2017) stated that the exponential development of Information technology has presented many opportunities to organizations.

Business-Information Technology Alignment occurs in phases (Plan, Model, Manage and Measure) with each addition maintaining an increase in value arising from the corporation. For it to be said that an entity has achieved Business-IT Alignment means that the entity is creating high value from its IT investment. That is, Business-IT alignment agrees with IT vision, mission, objectives, goals, and capabilities with the strategy, mission and goals of the organization.

The rapid improvement in Information Technology field pressed organizations to use IT in the management of their businesses thereby making parallel their business strategies and that of their information technology in order to maximize the worth of IT use in their entities. Present environmental instability as well as business doubts in enterprise markets has also contributed to the need to deploy information technology in business activities. Henderson and Venkatraman (1999) reiterated that strategic IT alignment has helped organizations to effectually and deliberately arrange structural resources and competences so as to attain institutional targets and also put up with competitive benefits. Chang, Wang, and Chiu, (2008) and Kearns and Lederer (2003) maintained that business-IT alignment has helped in predicting current as well as upcoming business-IT needs which has increased the opportunity to attain quality business feat. Business and IT alignment has been a peak precedence for managers and those in management field because it's a way to evaluate the extent of achievement between business approaches and information technology strategies (Chan, Sabherwal, & Thatcher 2006; Oh & Pinsonneault, 2007; Preston & Karahanna, 2009; Tallon & Pinsonneault, 2011).

### **Strategy-Driven Alignment**

Chebrolu and Ness (2013) stated that strategic alignment is a process of expressing, assimilating and applying choices between entity and IT, which empowers an entity to realize its aims. That is IT tasks and cost may be directly tied to the entity's strategy. Also that IT speculations is part of the key strategy of the establishment where necessary. Henderson & Venkatraman (1993) presented the Strategic Alignment Model (SAM) as useful tool for the treatment of Information System Alignment. SAM became a hold for cooperative process linking enterprise strategy, entities, information system architecture as well as IT strategy. SAM handled this from two separate perspectives which are strategic and functional (Aversano *et al.*, 2013). SAM is most cited and applied models with the ambition of helping administrators to achieve business and information technology alignment (Geopp & Petit 2014). Strategy Alignment Maturity Model was propounded by Luftman in 2004. SAMM also made available some conditions that can be used to evaluate the aptitude of the enterprise alignment framework and support in order to achieve strategic business-IT alignment (Dharga, 2012). SAMM model used six criteria for a complete model which are communication, governance, skills, partnership, competency and value, measurement and scope, and architecture.

### **Organizational Culture**

The work on Organizational climate in 1970s held huge attraction towards organizational culture (Brown & Magill 1994). Schein (1985) defined Culture as a basic part of assumption that a given group has created, found, or developed during a learning process owing to problems with external

adaption and internal integration. Organizational Culture is defined by Deresky (2010) as common expectations, goals and norms of people in an entity which varies from one entity to another.

Organizational culture changes the way business and IT are perceived and managed (Rusu, El Mekawy, & Kaboudvand, 2012). Brown, 1995 stated that organizational culture is divided into three levels (a) Values at strategic level which includes mission and objectives, (b) Beliefs and Norms of employees at tactical level and (c) Aspects of organizational life at operational level. Organizational culture when incorporated with business-IT domains in an entity, enhances business-IT alignment maturity level in that entity (Rusu, et al 2012). It also helps to change, enhance or stabilize business-IT alignment of entity. Organizational culture when taken seriously benefits both managers of business as well as that of IT (Rusu, et al 2012).

### **Sustainability**

Sustainability is ability to maintain something at a certain rate or level. According to Oxford Dictionary (7<sup>th</sup> Edition) Sustainability is “ability to keep something going or continued for a long time”. The term sustainability is broadly used to indicate programs, initiatives and actions aimed at preservation of a particular resource. Basically referring to four distinct areas. Human, Social, Economic and Environmental resources. Sustainability has been an often mentioned goal of businesses, non-profits organizations and governments even though measuring or understanding the magnitude that an entity is being sustainable or pursuing sustainable growth can be very difficult. Kuhlman and Farrington (2010) defined sustainability as ‘maintaining well-being over a long, perhaps even an indefinite period. They went further to say that it can also be said to a state of affairs where sum of natural and man-made resources remains at least constant for foreseeable future, in order that well-being of future generations does not decline (Kuhlman & Farrington, 2010).

This concept also known in German word Nachhaltigkeit, was originally coined in forestry in 1713 where it means never harvest more than what forest yields in new growth. Because it has to do with resources, economists also adopted the term due to fact that scarcity of resources is of central concern to them. Authors like Thomas Malthus in his work about looming mass starvation in 1798 is a one of such economists. So many authors have also written on this concept as it has to do with their area of specialization. Solow (1992) is of opinion that sustainability is a matter of preserving natural resources essential for our survival. Solow (1992) stated that ‘if sustainability is anything more than a slogan or expression of emotion, an injunction to preserve productive capacity for indefinite future’ then it must be confronted with socio-economic dimension of human aspirations for a better life, that is, well-being, development or similar concept. Sustainability is also seen as a means of continuing economic, social, institutional and environmental aspects of human society (Wikipedia 2006). It is intended to be a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in present while preserving biodiversity and term. Sustainability affects every level of entity from local neighborhood to entire planet (Wikipedia 2006).

## Quality Service Delivery

Quality is highest level of care that can be provided to customers within scope of entity. At a basic level, Service Quality refers to a customer's comparison between expectations from a service, with perceptions of what is actually delivered by service provider (Gronroos, 1984; Paransuraman, Zeithaml, & Berry, 1985). According to Nkusi (2018), Quality Service is among the main imperative competitive factors in today's industry. If service standard is not sufficiently high, service supplier is probable to disappoint customers regardless of their expectations. The feedback gotten from customers concerning a particular service helps to answer a fundamental question of how quality or excellent that service is. Studies have recently shown that training of service workers with most significant IT tools have been recognized as the greatest imperative factor behind quality service delivery.

The integration of IT in virtually all services would tremendously lead to improved service quality. Technologies can be used in quality control to collect customer data, monitor operations as well as facilitate service recoveries among others. Technologies help to provide key advantages to businesses in engendering customer loyalty by improving customer service. Poor Service Delivery undermines productivity and damages brand value just as excellent service delivery increases productivity which invariably transcends to immediate bottom line impact. Quality service delivery can be achieved by addressing process, people, and technology adopted collectively.

The following were hypotheses for the study:

Ho<sub>1</sub>: There is no significant relationship between strategy-driven alignment and quality service delivery in State-Owned tertiary Institutions in Rivers State.

Ho<sub>2</sub>: There is no moderating role of organizational culture on the relationship between Business-Information Alignment and the Sustainability of State-Owned Tertiary Institutions in Rivers State, Nigeria.

## METHODOLOGY

This study adopted a quantitative approach and methodology towards the investigation of subject matter which is relationship between business-IT alignment and sustainability of tertiary institutions. In line with methodology adopted, stratified research design is also adopted as framework through which variables of study were investigated. The strata method was adopted because it is a research design that most often align with quantitative methodology as it lays emphasis on category of data and responses generated from a wide range of subjects or populations elements within a particular and specific region. This design is considered most appropriate for this study as it is in line with goal and purpose of this study. This study, using stratified method targeted at empirically evaluating relationship between business-IT alignment and sustainability of tertiary institutions (Kothari, 2004). The population of this study was all non-academic staff within grade level 11 and above of five state-owned tertiary institutions in Rivers State, Nigeria totaling 1,224. Kiabel (2019) defined sampling as "taking any portion of a population or universe as representative of that population or universe". The researcher adopted Taro-Yamane sampling technique in ascertaining sample for this study and using the Taro-Yamane sampling technique, a sample size of 302 was drawn. This study made use of primary data with the questionnaire as instrument of data collection. Analysis was done using tables, mean and standard deviations. It



adopted Spearman's Rank Order Correlation to measure relationship between dimension and measure. The relationship between variables was based on 95% confidence interval and 0.5 level of significance. This study adopted Cronbach reliability benchmark of 0.70 as substantial evidence of reliability for instruments of study as presented in table below.

**Table 1: Reliability Coefficients of Variables**

S/No	Dimensions/Measures of study variable	Number of items	Cronbach's Alpha
1	Strategy-driven alignment	4	0.737
2.	Organizational Culture	4	0.807

*Source: SPSS Output*

### DATA ANALYSIS AND RESULTS

Three hundred and two copies of questionnaire were administered to respondents. 17 copies of questionnaire representing 5.63 percent were not returned. 285 copies of questionnaire representing 94.37 percent were returned and were suitable for data analysis.

**Table 2: Correlations for Strategy-driven Alignment and Tertiary Institution Sustainability**

			Strategy-Driven Alignment	Quality Service Delivery
Spearman's rho	Strategy-Driven Alignment	Correlation Coefficient	1.000	.875**
		Sig. (2-tailed)	.	.000
		N	285	285

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

*Source: SPSS Output*

The outcome of correlation obtained between strategy-driven alignment and quality service delivery was presented in Table 2. Likewise shown in table is test of significance (p - value), which not only makes conceivable for generalization of findings of investigation. Correlation index of 0.875 indorses course and degree of this connection. The coefficient is positive and high correlation between variables showing significant relationship for strategy-driven alignment and quality service delivery in State-Owned tertiary Institutions in Rivers State.

**Table 3: Correlation for moderating Effect of Organizational Culture**

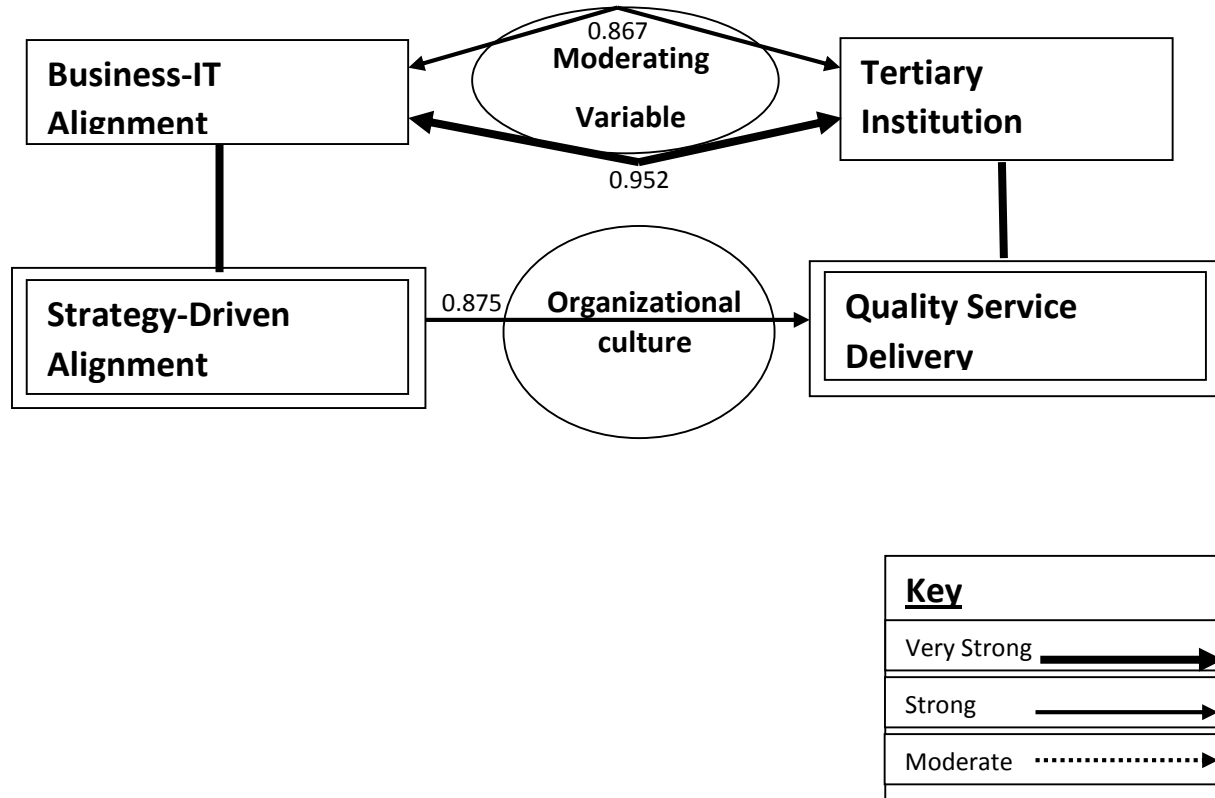
Control Variables			Business-IT Alignment	Tertiary Institution Sustainability	Organizational Culture
-none <sup>a</sup>	Business-IT Alignment	Correlation	1.000	.975	.952
		Significance (2-tailed)	.	.000	.000
		Df	0	283	283
	Tertiary Institution Sustainability	Correlation	.975	1.000	.905
		Significance (2-tailed)	.000	.	.000
		Df	283	0	283
	Organizational Culture	Correlation	.952	.905	1.000
		Significance (2-tailed)	.000	.000	.
		Df	283	283	0
Organizational Culture	Business-IT Alignment	Correlation	1.000	.867	
		Significance (2-tailed)	.	.000	
		Df	0	282	
	Tertiary Institution Sustainability	Correlation	.867	1.000	
		Significance (2-tailed)	.000	.	
		Df	282	0	

a. Cells contain zero-order (Pearson) correlations.

**Source: Research Data 2021, (SPSS output version 23.0)**

The evidence from analysis reveals that there exists considerable and moderating effect of Organizational culture on relationship for Business-IT Alignment and Tertiary Institution Sustainability in State-Owned tertiary Institutions in Rivers State. This is as results indicate that there exists a more significant and stronger indirect effect (where  $R_1 = .952$ ), than direct effect (where  $R_2 = 0.867$ ). The results therefore indicate that Organizational culture significantly contributes in a positive way towards relationship for Business-IT Alignment and Tertiary Institution Sustainability in State-Owned tertiary Institutions in Rivers State. On basis of evidence presented, null hypothesis of no moderating effect is rejected.

**Heuristic Model**



**Figure 3. Heuristic model for relationship between business-IT alignment and tertiary institution sustainability.**

**Discussion of Findings**

This study investigated relationship for Business-IT Alignment and Tertiary Institution Sustainability in State-owned tertiary institutions in Rivers State. This was credited to the reality that Business-IT Alignment are normally concerned with applying IT to a suitable and timely manner, in accordance with business strategies, goals and needs. The finding of study corroborates the conceptual position of AlKhateri (2017) who defined business-IT alignment as “applying IT to a suitable and timely manner, in accordance with business strategies, goals and needs”. The test of hypotheses one and two as in table 1 and 2 supports that relationship exists between business-IT alignment and sustainability of state-owned tertiary institutions in Rivers State, Nigeria. The current empirical findings also supports that strategy-driven alignment has a strong relationship with quality service delivery. The hypotheses were tested using Spearman’s rank order correlation tool while partial correlation was tested with moderating effect of organizational culture on study variables.

## Conclusion

This study concludes that business-IT alignment significantly and positively predict sustainability in five State-owned Tertiary Institutions in Rivers State. In specific terms, study concludes that strategy-driven alignment significantly and positively predict sustainability of State-owned tertiary institutions in Rivers State as can be seen in the quality service delivery. That organizational culture directly and indirectly moderates the relationship between Business-IT Alignment and Tertiary Institution Sustainability in State-Owned tertiary Institutions in Rivers State, Nigeria.

## Recommendations

- i. Tertiary institutions should develop a credible strategy-driven alignment that will effectively sustain the State-owned tertiary institutions in Rivers State.
- ii. Tertiary institutions should proactively educate all IT personnel on business objectives, so that everyone in IT has a visceral understanding of their business goals.
- iii. Tertiary institutions should utilize a portfolio management approach to invest in IT initiatives that optimize mix across shared services, business process optimization, and technology-enabled products and services.
- iv. Establish IT-to-business touch points at manager and executive levels, build IT awareness of key business success factors, and get IT to think and speak in business terms instead of technology terms only.
- v. Tertiary institutions should develop an organizational culture that is supportive to business-of IT alignment

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