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Critical Success Factors & Enterprise Resource Planning Implementation and Organizational Performance

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Authors' Contributions

This work was carried out in collaboration between both authors. Author EKI did the conceptualization. Authors EKI and FAO did the data curation and analysis. Authors EKI and FAO did the Investigation. Authors FAO and EKI did the methodology. Authors EKI and FAO did the resources. Author EKI did the writing- original draft. Authors EKI and FAO did the writing-review and editing. Both authors read and approved the final manuscript.

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ABSTRACT

The growth of innovativeness and sustainability has increased the need for quality and efficient performance in the information and communication industry. As organizations expand, there is a need to increase the capacity of their data processing unit by administration and synthesing of information within various departments by utilizing Business Management Solution suit called Enterprise Resource Planning (ERP) software. The crux of this study is to identify the relevant factors that can improve organizational performance through ERP system implementation. The hypothesis was drawn and tested using factor analysis and structural equation modeling. Survey method involving the administration of the questionnaire was used to gather data. The result from a sample size of one hundred respondents reveals that critical success factors can have a remarkable influence on ERP business management software suit and organizational performance.

Keywords: Critical success factors; information system; enterprise resource planning implementation; organizational performance.

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1. INTRODUCTION

The information system and communication technology era have amplified the search for more proficient operation in most aspect of human subsistence, organizations in order to improve its performance must invest on a complex software system of the contemporary period.

The injection of capital into information and communication technology industry is unavoidable; organizations now search for means to improve their services, reduce its overhead cost and shorten its operation life cycle in order to remain competitive. As a result, organizations in the developed countries have spent billions of dollars and countless hours on developing the information and communication industry by integrating business management software suite known as enterprise resource planning system software (ERPSs). Evident in the survey carried out by Zand and Beers, [1]; Gartner 2008, shows that billions of dollars were spent on the procurement and installation of enterprise system software in the worldwide market. Similarly, the level and amount of speculation for ERP system software is considered at the strategic level of an organization [2-6].

In other to have a seamless flow of information, organization can consolidate its functional business processes into a single software system configured to run on the entire organization. ERPs are database multipurpose computing packages that provide information solution to various departments. This software when successfully implemented can lead to superior performance of operational facilities. Deloitte [7] opine ERP system to be a bundled software system wrap up and computerized to enable access and sharing of information in a business environment.

This business solution software was recognized in the early 90s, emanating from the manufacturing and production industry and later expanding into the telecommunication and service industry [8,9]. From the year 2000 onward, a version of ERP II system was created to merge other business chains like transportation, supply chain, customer relation, knowledge management, document management, warehouse management among others [10,11].

Installing this software in any organization is capital intensive which involves enormous costs, time consuming, and resource utilization. Expertise knowledge, strategic management, and people-related support are consequential for the success of an ERP project. SAP, People Soft, JD Edwards IBM Oracle package and SAGE are some of the software used in the telecom industry and business environment. This software's are renowned for their substantial characteristics, prospective market needs and risk due to the multi-functional alliance with business operations.

Similarly, a drastic decline in the stockpile, reduction in venture capital, information on user needs, fostering alliance between customer and operation are some of the advantages of an ERP system. Therefore, encouraging enterprises to adopt the application of the software package despite challenges that might arise during implementation.

Investment in ERP software involves crucial decisions that must be made at the strategic level because it can affect both the shareholder's fund and organization competitiveness. However, through the proper adoption of ERPS software, firms can improve their competitive stance as well as attain financial and organizational performance. Results from empirical research were confound to the developed economies that adopted ERP implementation, whose vendors designed and sold software that was in line with the best practice of western process and culture.

Research in ERPS software and its implementation are few in the developed economies, Nigeria, in particular, has rarely reported having adopted the ERP software in its business processes, nor is it exploited in the telecom industry that focuses on information and knowledge communication [12-15]. As a result of this unbalance, it becomes tough and challenging to successfully adopt different ERPS packages offered to firms in the developing countries by the western vendors [16].

Organizations must be able to identify some critical functional areas of industrial, mechanical, practical, supervisory and decisive organizational elements that guarantee the successful competitive performance of their business. Top management, employee support, financial and resource availability, communication, strategic decisions, project management, culture among

others had been identified by research to provide a satisfactory result and competitive edge to business. CSFs are of extreme importance for it grant discernment and direction and serve as a focal point during ERP project implementation [17,18]. This research will assess the influence of these trivial factors on ERPs application on organizational performance in Nigeria an evolving country and in MTN Mobile Telecommunication Company in particular.

1.1 Objectives of the Study

Drawing from the above challenges, the primary intent of this study is to evaluate the incorporation of the business management software suit (ERP) and its influence on the performance in organization.

i. Identify the relevant Factors (i.e. Business Plan, Employee Support, Financial Resource Availability, Project Review Management, Business Process Re-engineering/re-design, and Communication) responsible for successful ERP Implementation.
ii. Measure the effect of the identified relevant factors on successful ERP implementation and organizational performance.

1.2 Research Questions

i. Are there any major factors that are responsible for successful ERP Implementation?
ii. Do the identified factors have a decisive effect on organization performance through ERP system implementation?

1.3 Research Hypotheses

i. The identified factors do not result to an ERP system software implementation success.
ii. Factors identified during implementation cannot improve organizational performance.

2. LITERATURE REVIEW

2.1 Definition of Enterprise Resource Planning (ERP) System

Enterprise Resource Planning system is an highly integrated real-time application software that links the upstream and downstream work processes of organisation businesses. It enable the organisation to adequately and effectively manage all its business functions- finance, human resources, manufacturing, sales and marketing (Hang, An Chiu, Chao & Arniati [19]. To strengthen the organisations performance the behaviours of customers, suppliers and competitors behaviors must be taken into consideration when developing goals and strategies. ERP optimizes the use of the business internal resources that involves the integration of cross-system functions and cross-organisation departments from a technology perspective when carrying outs its activities such as design, production, procurement, sales, finance and other application procedures.

Raheed [66] defined ERP as a mechanism that organisations uses to control and organise its' essential departments. The ERP software applications incorporate resource planning by combining all the processes required to operate their business in a single structure. Planning, ordering, inventory, sales, marketing, finance, human resources are combined with the software. ERP is also an enterprise-wide information system designed to coordinate all the resources, information and activities needed to complete business processes such as order fulfillment or billing.

While Deloitte [7] cited in Kemboi, Wanyoike & Langat [20] was of the view that ERP system as packaged business software system that allows a firm to share data profile and practices across the firm, automate and integrate the business practices and access information on a real-time basis. Furthermore ERP are configurable information system package that integrate information requirements and information best practices within and across functional areas in a firm.

2.2 The Origin of the ERP Concept

Enterprise resource planning is integrated software that manages business processes and allows for management of organisation services, technology and human resources activities [12,21].

The extraordinary advancement in the data intelligence transmission driven by microchip, computer data processor and operating system has dominated all aspects of computing operations in most firms. In the 1960's the designed and implemented enterprise

information system (EIS) was a centralised computing system that automates inventory control system using inventory control packages [22]. In the 1970's materials requiring planning (MRP) was developed. MRP involved the parts required for production and planning of the products. In 1980's MRP II was introduced with a focus on improving the processes of manufacturing organisations by synchronizing the materials with production requirements [23]. In the early 1990s, a modern productive computer program called Enterprise Resource Planning system resurfaced in commerce for large corporations. This composite and costly system is custom- made to provide solution to the company's requirements. Enterprise Resource Planning Systems are application program for firms enclosed with modules for various department- strategic planning, marketing and sales, project management and execution transport and logistics among others. ERP system involves a logical integration of all the data flowing through all aspect of the business operations with standard software packages and client/server architecture [63]. The focus of the ERP system was on its function of automating back-office activities, while the front-office functions that affect customers were integrated with suppliers relationship management (SRM), customer relationship management (CRM), e-business systems such as e-government, e-commerce and e-telecom [24,25,63].

The advancement of ERP systems was in line with the development of computer data processor and program systems. In the 1960s most organization developed and executed a consolidated computing system with COBOL, ALGOL, and FORTRAN. Material requirement planning system was introduced in the 1970s to focus primarily on product creation or product specification in line with the manufacturing schedule, in other to optimize and synchronize the manufacturing and production requirement. ERP systems was launched in the early 1990s to provide business-wide inter-unit systematization and integration of all business processes. ERP dealers introduce more components as "add-on" to initial component thus resulting to an "extended ERPs." Additional modules like strategic decision making and itinerary, customer relationship and distribution system management were later version of ERP.

Depending on the organisations operations and technical capabilities the ERP software that is purchased must meet and fit the department specific requirements and is focused only on one area of business processes- product planning, sales or marketing. A business can also use ERP software to manage activities of back office or can utilised for tasks such as supply chain management, distribution process management, service knowledge base, price configuration, facilitate better project management, improve the accuracy of financial data, automate employee life-cycle, accounting and financial applications, standardised critical business procedures, reduce redundant tasks, assess business needs, lower purchasing costs, manage human resources and payroll [12,13,26,27].

Researchers suggested other terms such as enterprise system (ES), enterprise resource management (ERM), to replace ERP system which derives its existence from material requirement planning. ERP II package recently introduced as an expansion to ERP system; its components were configured to network application and database decision framework for e-commerce and logistic and supply network.With the subsequent development in web services and the growing trend towards cloud computing, ERP system is thus evolving [12,28,29].

2.3 Theories of ERP Implementation

Two notable theories of ERP implementation are the diffusion and resource-based theory;

2.3.1 Diffusion of Innovation (DOI) theory

This theory is a supposition propounded by Everett Rogers that explain the means by which data and technology unfurl. This theory focuses on five sections: the features of an innovation which takes predominance in its adoption; the susceptive stage during endorsement of a new idea, product or practice; the attributes of individuals and community embracing an innovation and the transmission platforms adopted.

DOI advocates five unique strategies; these are innovators of high social status and are predisposed to risk. Early adopters are socially inclined to adopt new ideas, while early majority embrace change roughly after a period of time has elapsed. The late majority is typically skeptical about innovation and laggards are

skeptical, have low rank and file, little venture capital and are the last to adopt an innovation [30].

Innovation, social networking, electronic communication channel and time are crucial in the diffusion of innovation. (Orlikowski, 1993). The implementation is consistent to the extent assimilation within the user community, some functional areas and a number of users that embraced the system [30,31].

2.3.2 Resource-Based View (RBV) theory of competitive advantage

An established firm can harness and apportion its internal assets and capabilities in other to achieve sustainable competitiveness. This theory work on the assumption that the expected outcome of management efforts will enable a firm to have a sustainable advantage, incur economic rent and returns [32].

This theory depicts that firms control their resources with beneficial, rare, rudimentary definitive and compatible features that enhance its capabilities and success. The RBV theory posits that businesses possess resources that are tangible, ie. Information and operating system, web framework and intangible, i.e., innovation, software patent, strong dealer relationship part that will lead to an advantage, and superior long-term performance [30-35].

2.4 Enterprise Resource Planning (ERP) Life Cycle

Estevee and Pastor [36] made a proposition involving the phases of executing the ERP software system in firms. It consists of six phases stated below;

a) Adoption Phase: At the adoption stage, decisions are made by managers on the type of ERP system that meet their system requirements, best suited for resolving critical business challenges and improving organizational performance.

b) Acquisition Phase: A choice of the dealer and the ERP software that is suitable for the needs of the particular firm is made. The cost of the system, its various specification, attributes of the product and the specific training requirement of the software package are relayed to the firm acquiring the ERP software package.

c) Implementation Phase: Here the software is made to order or configured and modified to the requirement of the firm. Normally, a blueprint is provided by consultants who are experts and can train members of the firm on the use of the software.

d) Use and Maintenance Phase: The fourth phase has to do with making a choice of the ERP product in a way that it yields profit and minimal interference. Meanwhile, one must take into cognizant its purpose, relevance and capacity to suit the organization business operation. Immediately, After implementation the system is monitored because glitch occur and has to be retified, specific expansion suggestions are carried out, and implementation takes effect on the general system.

e) Evolution Phase: Upgrading and adjustments in the system software suit are vital for firm operation. Supplementary facilities are incorporated into the software suit for improved proficiency and use of the software.

f) Retirement Phase: An ERP system is susceptible to recurring problems in the long run as technologies and business operation changes with time. It is prudent to exit, make substitutions or replace the system with the latest version that meets their operational needs.

2.5 Conceptual Framework

2.5.1 Critical success factors

The notion CSF was first referenced in the literature work of Rockart [37] for managers to develop the idea of identifying key operational determinants, when properly managed can ensure the achievement of organizational goals. Rockart & Bullen [38] affirmed that CSFs are fundamental for business success and organizational goal attainment. Pinto & Slevin [39] described CSFs as elements which are notable for enhancing project execution. CSFs was referred to as a series of action that were specially considered for continuous planning and utilization of the ERP system [40]. Organizations must be able to identify some critical functional areas of technological, operational, managererial, strategic, and organizational components that improve its competitive stance.

Critical success factors are appropriate, as they provide understanding and direction on planning

an outstanding ERP project implementation [17,18].

ERP system is a very composite project that often endures high cost, considerable time and resources during implementation. Though an organization may spend a tremendous amount on the procurement of ERP software, it may still encounter problems during the implementation phase. The adoption and acquisition phase of the implementation, the market intricacy and procedure of installation can step-up the failure rates during execution [41]. Technical knowledge, corporate, and human attributes are notable for the accomplishment of the program. Top management devotion and employees support is paramount to issue on outstanding ERP implementation, as it involves many reforms in the organization. Also, effectual transmission, sound program evaluation and steering team are required during discharge of the scheme so as to join the numerous enterprise tasks uniformly [42].

Strategic business plan, financial resources availability, project management group, employee-related factors, communication and business process re-engineering, are adopted as possible critical success factors in this research.

2.5.2 Business plan

Reduced internal and external transaction costs, decreased information asymmetry among information consumers, and a lower cost of capital are all strategic benefits of ERP systems that managers must factor into their business plans. The ERP system enables the organisation to develop policies and plans that provide a better understanding of the overall business picture, generate reports, and make better decisions that improve the organization's performance by integrating its business processes that span multiple business functions, divisions, or geographical locations. Before implementing an ERP system in an organisation or project, is a business plan document that explains the why, what, when, where, who, and how of the project is required. This would allow for effective monitoring of the implementation's progress. It would also allow the implementation parties to develop an implementation strategy, schedule, and organise the implementation team by ensuring that all tasks are interconnected and coordinated. To ensure effective implementation, the business plan should address all concerns about existing procedures, their effects on employees, the organization's work environment, and the awareness and provisions of the ERP user manuals.

2.5.3 Employees' support

Top management and employee's support are critical during ERP system implementation. Their active participation would help to ensure that the project receives the necessary budget and resources for software implementation. They can also assist the organisation in making recommendations and providing feedback at each stage of the system's use.

2.5.4 Financial resources availiability

ERP software implementation is a capital-intensive process that can have an impact on the organization's financial resources. During the implementation stage, the organisational culture, timeframe, implementation cost, and infrastructure must frequently be available and adequate. In the long run, a successful ERP project can reduce operational costs, generate more accurate demand forecasts, shorten the production cycle, and greatly improve customer service. Furthermore, the ERP project entails procuring vendors and consultants, equipment requirements, and workforce availability, all of which have a high budget that may affect the financial performance of the organisation, but can yield profit after two to five years of operation for the organisation.

2.5.5 Business process re-engineering

ERP is the result of a modern enterprise's understanding of how to configure an information system for the demanding environments of new business opportunities. However, simply putting in place an information system is insufficient. Every organisation that plans to implement ERP must reengineer its processes in some way. This is referred to as business process reengineering (BPR).

An organisation must be able to restructure its business processes by aligning its system processes with the centrally managed ERP system, as well as speed up its response time to supplier and customer requests, in order to meet its information efficiency and decision-making needs. Business process re-engineering entails fundamentally rethinking and radical redesigning business processes in order to achieve dramatic improvements in critical contemporary performance measures such as cost, quality, service, and speed [65]. This process is also required for analysing previous ERP

implementations and ensuring that all business process requirements are taken into account in a well-planned project plan prior to implementation.

2.5.6 Communication

At all times, project managers must be able to communicate effectively and efficiently to top management and other employees within the organisation about the importance and utility of applying ERP software to operations. Many ERP implementation organisations develop a communication plan to share updates about the various projects, activities, tasks, or responsibilities that employees can carry out with the software's implementation because they recognise the importance and opportunities that communication brings during project implementation. At all times, project managers must be able to communicate effectively and efficiently to top management and other employees within the organisation about the importance and utility of applying ERP software to operations. Many ERP implementation organisations develop a communication plan to share updates about the various projects, activities, tasks, or responsibilities that employees can carry out with the software's implementation because they recognise the importance and opportunities that communication brings during project implementation. Most organisations strive for a communication culture that allows for effective coordination among departments and their interests. Professional communication is also required within the project team, particularly when upgrading their ERP system.

2.5.7 Project management

A thorough evaluation of the project management process must be carried out, including all of its components, such as an exact project chapter, detailed planning, the appointment of a project manager and project team, a well-defined work structure for project participants, and a control mechanism. The planning stage is critical during ERP implementation because it is necessary to define fallback scenarios, appoint personnel who will be in charge of the implementation, and assess the benefits of implementing the system. Furthermore, each system functionality must be thoroughly discussed and weighed against the cost and benefit that it provides. Project review and evaluation must also be performed on a regular basis to ensure that the project is on track [65].

Furthermore, each system functionality must be thoroughly discussed and weighed against the cost and benefit that it provides. Project review and evaluation must also be performed on a regular basis to ensure that the project is on track and to identify any areas for improvement and changes that can improve its operation. At the end of the project, there must be checks to observe the effect of project execution, expectations met or exceeded, compatibility of the system application with user response, or if there are measures that must be implemented in the near future to benefit more from prolonging the system's implementation [43].

2.6 Organizational Performance

There are diverse views in management research on the appropriate outcomes that could influence the quality and success of ERP implementation. Organizational performance could be viewed from the financial perspective involving profit, return on assets and investment, sales growth, increase in market share and shareholders return [44,45]. Organization performance could also be viewed through operational efficiency involving cost reduction and production, useful resources utilization and increased productivity [46,47]. Similarly, enterprise activities can also be evaluated with attainment approach (also referred to as non-objective performance measure) that is analysed through parameters set by the management using a Likert scale [48].

Another approach to measuring ERP success is by operational process change/outcomes on its cost, resource management and productivity [46,49-51]. This research tends to adopt a subjective measure by adopting perspectives or reviews from employees. Previous researches reveals fewer investigation had been carried out in the telecommunicatio industry, particularly in Nigeria where information and communication is a great source for revenue generation.

It is against this knowlegd that the intent of this inquisition is to measure the importance of software taking into consideration the key determinants that can improve organizational performance.

2.7 Empirical Literature

Ayogeboh & Oludayo [52] carried out a research to identify the critical success factor for ERP system implementation to support financial functions from 127 studies through content analysis method. 20 dominant factors were identified to applicable to financial systems. Among these factors are top management, project team competence, business vision and plan, commitment to business process engineering identified to improve organisational performance.

Astuty, Pratama, Bashir & Harahap [53] in their study to discover if enterprise resource planning can lead to the quality of the management accounting information system (MAIS) by taking into consideration three dimensions- reliability, efficiency and flexibility in Indonesian firm. A survey was carried through a cross-sectional data collected at one point in time among the public-owned enterprises, 180 valid responses were returned and analysed by using partial least square (PLS) structural equation modeling. The hypotheses results reveal the direct effect that ERP has an important role of ERP at enhancing the quality of MAIS among Indonesian public-owned enterprises.

In the study of Christian and Stephen [54] that focuses on the critical success factors for the ERP upgraded projects. A literature review, qualitative content analysis and expert interview with CEOs, CIOs, ERP consultants and project managers who recently carried out ERP upgrade projects in their respective organisations. The paper identifies 14 critical success factors for ERP upgrade projects, amongst which are project management, external support, ERP team, multiple system landscape, system testing, communication, key user integration, lesson learned, stick to standard, top management support, resource and focus, change management, data & code cleansing and user of new potentials plays a key role for the success of the ERP grade.

The research of Rossella, Tommaso & Rafaella [55] focuses on the impact of Industry 4.0 technologies, critical success factors, and improvements in manufacturing firms. The Internet of Things (IoT), horizontal and vertical systems, integration, simulations, autonomous robots, big data and analytics, augmented reality, additive manufacturing, cloud computing, and cyber security are the nine pillars of Industry 4.0. Traditional systems are being transformed by these pillars. To supplement the existing literature, their study employs a case study of eight implementations of Industry 4.0 technologies in Italy. Following a well-defined research protocol that included plant visits and structured interviews with selected cases involving Italian plants or international companies with a presence in Italy that had at least one successful adoption initiative, an original data set was created. The findings indicate that there are factors influencing the effective deployment of industry 4.0, AMT, and incremental versus radical improvement initiatives related to technological adoption. It also reveals that there are positive correlations between contextual and adoption-related factors and the successful implementation of Industry 4.0 technologies.

Senem, Gozukara, Bedir & Cagatay [56] investigated the challenges and solutions associated with on-premise enterprise resource planning systems. The SLR method was used in the study to identify and synthesise relevant information, and 62 papers were chosen as primary studies to provide the answers. Lock-in, conflict of interest, difficulty measuring and meeting return on investment, lack of change in ERP module management, a lack of in-house skills, a lack of a balanced project team, and organisational misfit are among the obstacles and solutions identified. Others include business process adaptation, significant upfront financial investments, a lack of expressiveness, and compromising business processes to align with generic ERP modules.

Sumit, Syed, Mohd, Sanjoy & Golam [57]. Carried out a study to examine the critical success factors (CSFs) for sustainability in the Bangladeshi wood industry by engaging the help of supply chain managers on achieving sustainable development goals. To uncover the interdependencies a development methodology that integrate a literature review and analyses on principal component analysis (PCA), interpretive structural modelling (ISM) and matriced impacts croises multiplication appliqué aunclassement (MIMAC) techniques. PCA (n=150) was used to identify and rank the CSFs to sustainability in the Blangladeshi wood industry, while ISM (n=9) and MIMAC were used to determine the driving and dependence power of the CSFs. The findings reveal that research and development, supplier relations and using eco-friendly technology are the most significant CSFs of the Bangladeshi wood industry.

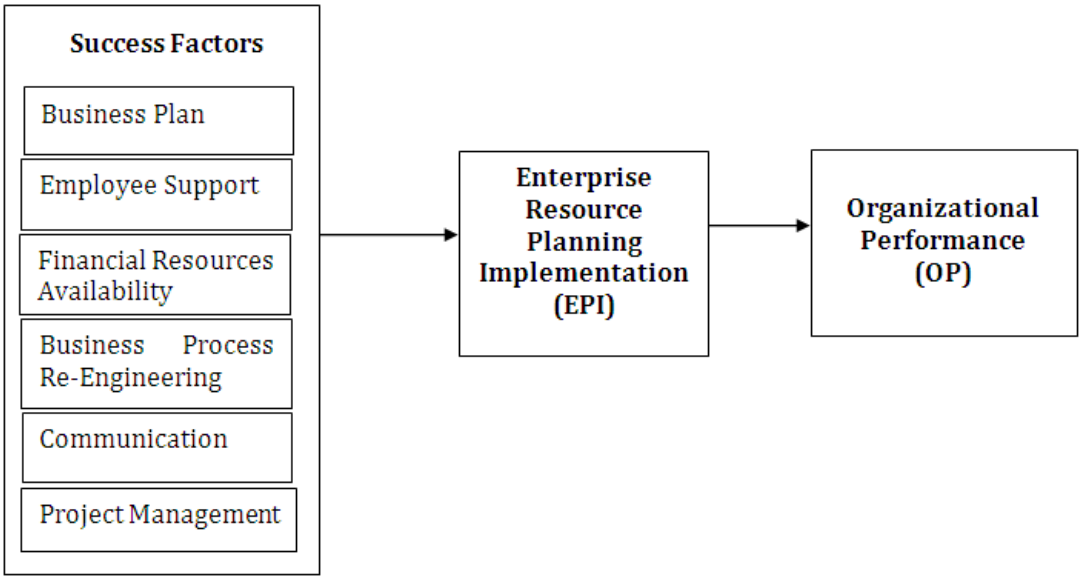

Fig. 1. Research Conceptual Framework and Model Specification

Conceptual model adopted from Asamoah [30] and modified by the researcher to include Karimu et al (2007), Business process re-engineering, communication project management review and Business Plan from Afaneh, AlHadid and Almalahmeh [58], and Employee support and Financial resource availability from Njihia and Nwirigi [59].

Hypothesis 1: The identified factors do not result to successful implementation of the ERP software.

Between Critical Success Factors and ERP Implementation

$CSF = \alpha + \beta_1 BUP + \beta_2 EMS + \beta_3 FRA + \beta_4 BPR + \beta_5 COM + \beta_5 PRM$ **+ ε**
$CSF = \alpha + \beta_1 ERP + \varepsilon$

Hypothesis 2: Factors identified during implementation cannot improve organizational performance.
$ORP = \alpha + \beta_1 CSF + \beta_2 ERP + \varepsilon$

3. METHODOLOGY

A pragmatic exploration of the study was done to ascertain the effect of the identified factors on ERP implementation in the telecommunication industry, specifically survey report from MTN Nigeria was selected purposely for the research. The survey was carried out by personal administration of questionnaire to employees working in five selected departments . The items on the questionnaire; critical success factor, ERP and organizational performance were related using the scale point of 1-5 (strongly disagree to strongly agree). As the critical success factor is itself a function of many sub-variable, therefore business plan, employee support, financial resources availability, business process re-engineering, and communication were incorporated into the research.

The questionnaire was distributed among one hundred and twenty respondents. The completed responses were collected randomly from respondents in the organization. One hundred responses valid for the study after exclusion of incomplete questionnaire were processed, resulting in 83.3% administering success.

To test the primary data collected, factor analysis and structural equation modeling using analysis of moment structure (AMOS) were used to test the hypothesis. Tables was used for categorization of data, regression and covariance approach for estimation of the dependent variable (Y) and independent variable X, 'α' = constant, $\beta_1, \beta_2, \beta_3$ estimate of parameter and e= error term

4. RESULTS

4.1 Descriptive Statistics

The table shows the illustration of the demographic information of the respondents surveyed.

The gender distribution reveals that 54% were Male and 46% Female. Respondents age distribution shows 16% were below 30 years, 38% were between 30-40 years, and 46% were from 41 years and above, a higher representation where from the matured and energetic workforce.

Distribution of respondents by position at work reveals that 23% were junior level management staff, 46% senior level management staff and 31% at top level management staff, a higher representation of management staff were at the senior level.

The table also reveals that 47% of the respondents had below 11 years working experience and 53% had worked in the firm above 11 years. Educational background of respondent shows that 45(45%) had M. Sc./M.A/MBA, while 45(45%) had HND/B.Sc. /B.A. education. 10 (10%) had Ph.D. education; this shows that 55% of the respondents had higher academic degrees.

Distribution based on department shows that (30) 30% of respondents were working in the Quality management and Sales and distribution, (16) 16% in Human Resources, (26) 26% in Finance and (28) 28% in Management decision support. Respondent level of computer experienced reveals that 26% had between 1-5 years experience, and 28% had close to 10 years computer experience. While 46% had over ten years computer experience, this shows that the respondent was knowledgeable in computer application.

4.2 Factorial Analysis

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Barlett's test of Sphericity were also used to test the data collected.

The results reveal the critical factors selected contributed about 67% to support the software implementation, 33% of the factor explaining critical factors are unknown. From the above analysis, the values supporting the organization critical success factors are good.

The Confirmatory Factor Analysis was run with SPSS software 25 by dimension reduction of the items with Principal Component Analysis (PCA) and Varimax rotation.

Table 1. Demographics profiles of respondents

Biographic Information	Frequency	Percentage (%)n = 100
Age		
≤ 30 yrs	16	16.0
30 -40 yrs	38	38.0
41 – 50yrs	46	46.0
Gender		
Male	54	54.0
Female	46	46.0
Departments/ Units		
HR	16	16.0
Finance/Account	26	26.0
Sales & Distribution	15	15.0
Quality Management	15	15.0
Management Decision Support	28	28.0
Work Experience		
1-5 Years	21	21.0
6-10 Years	26	26.0
11-15 Years	28	28.0
16 Years & Above	25	25.0
Education		
HND/B.Sc./B.A	45	45.0
M.Sc./M.A/MBA.	45	45.0
PHD	10	10.0
Position at Work		
Junior Manager	23	23.0
Senior Manager	46	46.0
Top Level Manager	31	31.0

Biographic Information	Frequency	Percentage (%)n = 100
Computer Experience		
Under 1 Year	2	2.0
1-5 Year	24	24.0
6-10 Years	28	28.0
Over 10 Years	46	46.0

Source: Field Survey, 2021

Result of statistics above depict out of the 28 items selected in measuring critical success factors, 12 factors were extracted to contribute about 71.72% of factor required to explained the items. The first factors contribute 17.35%, the second 9.53%, the third 8.45% while the fourth 6.30%. In addition, the fifth factor contribute 5.36%, the sixth 4.56%, the seventh 4.06%, while the eighth, ninth, tenth, eleventh and twelfth contribute 3.73%, 3.39%, 3.14%, 2.97% and 2.85% respectively. On the whole, the entire factor selected contributes about 71.72%. This implies that 28.28% of the factor explaining the critical success factor is not known.

Table 2. Factor analysis of critical success factors on ERP implementation and organizational performance using KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.670
Bartlett's Test of Sphericity	Approx. Chi-Square	1061.185
	Df	378
	Sig.	.000

Source: Field Survey, 2021

Table 3. Confirmatory factor analysis result on the critical success factors that influences ERP implementation and organizational performance

Total Variance Explained						
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	6.248	17.355	17.355	6.248	17.355	17.355
2	3.431	9.531	26.886	3.431	9.531	26.886
3	3.044	8.457	35.342	3.044	8.457	35.342
4	2.268	6.300	41.642	2.268	6.300	41.642
5	1.930	5.362	47.004	1.930	5.362	47.004
6	1.642	4.560	51.564	1.642	4.560	51.564
7	1.463	4.064	55.628	1.463	4.064	55.628
8	1.343	3.730	59.359	1.343	3.730	59.359
9	1.223	3.396	62.755	1.223	3.396	62.755
10	1.131	3.141	65.896	1.131	3.141	65.896
11	1.069	2.969	68.865	1.069	2.969	68.865
12	1.029	2.858	71.723	1.029	2.858	71.723
13	.926	2.573	74.296			
14	.893	2.481	76.777			
15	.794	2.206	78.982			
16	.732	2.034	81.016			
17	.682	1.893	82.909			
18	.644	1.789	84.698			
19	.571	1.586	86.284			
20	.531	1.476	87.760			

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
21	.518	1.439	89.198			
22	.473	1.315	90.514			
23	.417	1.158	91.671			
24	.373	1.035	92.706			
25	.344	.955	93.661			
26	.339	.940	94.601			
27	.307	.853	95.454			
28	.265	.737	96.191			
29	.242	.671	96.862			
30	.227	.632	97.494			
31	.197	.546	98.040			
32	.180	.501	98.541			
33	.160	.445	98.986			
34	.147	.409	99.395			
35	.124	.345	99.740			
36	.094	.260	100.000			
Extraction Method: Principal Component Analysis.						

Source: Field Survey, 2021

4.2.1 Structural equation modeling (SEM) using AMOS Software

This is a statistical package that test the representation of a theoretical concept in an equation model. The hypothesis tests the relationship between the observed(measured indicator) and unobserved variables (latent variable) through a combination regression, factor analysis, and path analysis. Using the AMOS software to construct the model allows for estimation and errors reduction. The hypothesis was tested using a covariance approach of structural equation model.

4.3 Tests of Hypotheses

H1a. Business Plan on ERP Implementation (See Fig 2, Table 4 in Appendix)

The model fit estimate is summarized shows that;

The Chi-Square and probability value of ($\chi 2$= 93.955 (df= 52, P= 0.000) shows that the model is significant. The root mean square error of approximation (RMSEA) is 0.90, Goodness of Fit Index (GFI) of 0.881 which is above the level of acceptance, show that it has an absolute model fit.

The Adjusted Goodness of Fit (AGFI) index is 0.821, the Normed Fit Index (NFI), Tucker Lewis index (TLI) and Comparative Fit Index (CFI) 0.821, 0.435, 0.469 and 0.581 respectively are slightly close to the level of acceptance of ≥ 0.9, taking into consideration other parameters, the incremental fit can be accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 1.807, lower than 5.0 is a perfect fit. Model variances show a range of estimate of -0.001- 1.931, the standard error at 0.005-0.275, The standard estimate (S.E) which reflect the parameter precision estimate ranges from 0.005 - 0.275. The standard significance of parameter(C.R) which represent the parameter estimate divided by its standard error as Z-Statistics ranges form -0.295 – 7.033 and P value at 0.000.

The result shows that Business Plan as a critical factor can improve organizational performance through ERP implementation.

H1b. Financial Resources Availability on Organizational Performance (See Fig 3, Table 5 in Appendix)

Chi- Square and probability value of ($\chi 2$= 30.026(df= 19, p= 0.51) shows that the model is

not significant. RMSEA is 0.077 and GFI of 0.860 which is close to the level of acceptance, show that it has an absolute model fit.

The AGFI is 0.821, NFI, TLI and CFI 0.821, 0.435, 0.469 and 0.581 respectively are slightly close to the level of acceptance of ≥ 0.9, taking into consideration other parameters, the incremental fit can be accepted.

The Chi-Square minimum discrepancy of 1.807, lower than 5.0 is a perfect fit. Model variances shows a range of estimate of -0.004- 1.414 standard error at 0.005-0.275. The standard estimate (S.E) ranges from 0.012 - 0.382, C.R ranges form -0.035 – 6.995.

The model shows that financial resources availability will improve the performance of organization during implementation of the software suit.

H1c. Employees Support and ERP Implementation (see Fig 4 and Table 6 in Appendix)

The Chi- Square and probability value of ($\chi 2$= 37.496(df= 19, p= 0.00) shows that the model is highly significant. RMSEA is 0.099 shows a close fit and GFI of 0.850 which is close to the level of acceptance, show that it is an absolute model fit.

AGFI, NFI, TLI and CFI 0.850, 0.627, 0.624, and 0.745 respectively are close to the level of acceptance of ≥ 0.9, taking into consideration other parameters; the incremental fit can be accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 1.973, lower than 5.0 is a perfect fit.

The variance estimate ranges from -0.187 – 1.635. The standard estimate (S.E) ranges from 0.106 – 0.262. The C.R ranges from -1.112 – 6.991. The model shows that employee support is identified during successful implementation of the software.

H1d. Business Process Re-Engineering and ERP Implementation (See Fig 5 and Table 7 in Appendix)

The Chi- Square and probability value of ($\chi 2$= 51.737 (df= 19, p= 0.00) shows that the model is highly significant. The RMSEA is 0.0132 shows a close fit and GFI of 0.850 is close to the level of acceptance, show that it is not an absolute model fit.

The AGFI, NFI, TLI and CFI of 0.783, 0.448, 0.267, and 0.502 respectively are close to the level of acceptance of ≥ 0.9, taking into consideration that theses values may be due to sensitivity of the indicators in the estimate, the incremental fit is accepted.
The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 2.723, lower than 5.0 is a perfect fit.

The variance estimate ranges from -0.022 – 1. 449. The standard estimate ranges from 0.047 – 0.285. The C.R ranges form -0.333 – 7.043.
The model shows that business process re-engineering/ redesign can influence implementation of the system software.

H1e. Communication and ERP Implementation (See Fig 6 and Table 8 in Appendix)

The Chi- Square and probability value of ($\chi 2$= 24.713 (df= 19, p= 0.170) shows that the model is not significant. The RMSEA of 0.55 shows a poor fit and GFI of 0.850 which is close to the level of acceptance, show that it is not an absolute model fit.

The AGFI, NFI, TLI and CFI 0.893, 0.645, 0.797, and 0.863 respectively are close to the level of acceptance of ≥ 0.9, taking into consideration that these values may be due to the sensitivity of the indicators to the number of parameters estimated and the sample size, the incremental fit can be accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 1.301, lower than 5.0 is a perfect fit. The variance estimate ranges from -0.001 – 1. 241. The standard estimate ranges from 0.007 – 0.502. The C.R ranges form -0.220 – 7.037. The model shows that communication cannot influence the successful implementation of the software.

H1f. Project Management and ERP Implementation (See Fig 7 and Table 9 in Appendix)

The Chi- Square and probability value of ($\chi 2$= 48.111 (df= 19, p= 0.000) shows that the model is significant. The RMSEA is 0.124 shows a poor

fit and GFI of 0.896 which is within the level of acceptance, show that has an absolute model fit.

The AGFI, NFI, TLI and CFI 0.804, 0.611, 0.552, and 0.692 respectively are close to the level of acceptance of ≥ 0.9, taking into consideration that these values may be due to the sensitivity of the indicators estimates, the incremental fit is accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 2.532, lower than 5.0 is a perfect fit. There are 8 variance estimate ranges from 0.933 – 1. 439. The standard estimate ranges from 0.133 – 0.238. The C.R ranges form 6.036 – 7.035. The model shows that project review management team is of great influence during implementation of the system software.

Hypothesis 2a: Relationship between the Critical Success Factors on ERP Implementation (See Fig 8, Table 10in Appendix).

The Chi- Square and probability value of ($\chi 2$= 256.643 (df= 98, p= 0.00) shows that the model is highly significant. The RMSEA is 0.0128 shows a mediocre (Average) fit and GFI of 0.758 is close to the level of acceptance (threshold of 0.90, show that it is a good fit model.

The AGFI,NFI, TLI and CFI 0.664, 0.365 0.316, and 0.441 respectively are not close to the level of acceptance ≥ 0.9, taking into consideration that theses values may be due to sensitivity of the indicators to the parameters estimated and sample size, the incremental fit can be accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 2.619, lower than 5.0 is a perfect fit. The model shows that the identified factors can be integrated during the application of the system software.

Regression estimate and Analysis of Covariance of Critical Success factors on ERP Implementation (also see Fig 8, Table 10in Appendix)

Six covariance estimate was identified in the model; the estimates are, between Employee support and Financial Resource Availability is 0.64, Employee Support and Business Process Re-engineering is -0.154, and Employee Support and Business Plan -0.217. Financial resources Availability and Business process Re-engineering 0.229. Financial resources Availability and Business Plan -0.206 and Business Process Re-engineering and Business plan is 0.043. The standard estimate ranges from 0.045, 0.124. The C.R ranges from -2.121-1.778.

Hypothesis 2b: Relationship among the identified factors for ERP implementation and Organizational performance (See Fig 9, Table 11in Appendix).

The Chi- Square and probability value of ($\chi 2$= 377.048 (df= 160, p= 0.00) shows that the model is highly significant. The RMSEA is 0.0117 shows a mediocre (Average) fit and The GFI of 0.720 which is close to the level of acceptance threshold of 0.90, show that it has that it is a good fit model.

The AGFI, NFI, TLI and CFI 0.633, 0.368 0.366, and 0.466 respectively are not close to the level of acceptance ≥ 0.9, taking into consideration that theses values may be due to sensitivity of the indicators to the parameters estimated and sample size, the incremental fit can be accepted.

The Parsimonious adjusted measure of the model which indicate the Chi-Square minimum discrepancy of 2.357, lower than 5.0 is a perfect fit.

The model shows that the identified critical factors can successfully influence implementation and Organizational performance.

5. CONCLUSIONS

Enterprise Resource Planning implementation system links simultaneously an enterprise program, framework and operations with the information technology process. It is an indispensable infrastructure for many dominant organizations that will expand the extent of integration to reinforce business processes.

From the identified factors that are responsible for improved organization performance, some of the factors individually as in the case of communication improve performance, while a combination of factors like Employee support, financial resources, business plan and business process review/re-engineering can to a greater extent improves firm's performances.

The study focused on identifying the critical success factors that can lead to organizational performance, implementation is encouraged in firms through proper communication to employees who are involved in the execution of the software packaged. Four (4) of the critical success factors; Business plan, Financial Resources Availability, Employee Support and Business process re-engineering has an absolute effect on the implementation of the software suit, while a Business Plan is recommended for outstanding application of the software. Similarly, business process re-engineering, employee support and project review management when combined together resulted to improved system implementation and performance of the organization. The analysis of covariance of the model shows reveal six covariance among the critical success factors.

This results conform to the study of Murray and Coffin [60,64] who opine that companies ought to transform their core business to be compatible to software that can facilitate information sharing, exchange of experiences among employees and still enable the organization to manage its procurement process, reduce negotiation and contracting.

Aligning with the previous studies that proposed that software ought to be modestly personalized in order to reduce chances of inaccuracies and be adopted to changes in relation to ERP implementation of the organization that is in need of it.

The result from the research could help organizations lessen ERP Implementation risks, and create more avenues for business improvement with already identified factors for success of ERP system. Such pragmatic approach can be applied to many organizations for a better understanding and appraisement of the pre-test and post test of the application of the ERP system software by management.

The study suffers some drawbacks i.e. the respondents who answered the questionnaire instrument report supported the execution of ERP System, but failed to explain the intensity; level of implementation and how it varies across department and this is not captured in the research. Similarly, survey method used to gather data depended solely on the responses of executives in the organization; the possibility of respondent's bias is also present.

The sampling proportion of this research is quite small it focused on the respondents at the MTN head office and two branches on the Island as against the population in Lagos State or taking from south-west region. Other critical success factors which are also important and highly recommended during ERP implementation could be also be co-opted into further research.

6. LIMITATION OF THE STUDY

During the data collection phase, the chosen methodology imposed some limitations on this study. It was carried out at MTN Telecommunication Company in Lagos State, Nigeria; this is a small sample size when compared to the total number of telecommunications companies in the country. In comparison to the number of telecommunications firms in the country, this is a relatively small representation. Furthermore, the number of participants in this study is a small representation of the organization's total workforce.

Cross-sectional studies and historical data could be used in research to evaluate the performance of ERP projects in other industries such as construction, manufacturing, government parastatals, and private service firms. Despite these limitations, the researchers ensured that the study's outcome was unaffected. The study's practical empirical analysis was limited to employees at the managerial level and may not have included all employees across departments. The research was conducted over a short period of time; ideally, a longitudinal study would reveal a deeper understanding of the ERP system's operations. As a result, the findings are limited to managers' perceptions at a specific point in time.

7. SUGGESTIONS FOR FURTHER STUDIES

Further research on ERP implementation can be conducted by combining the task-technology fit (TTF) model, which focuses on compatibility, meaning, adequacy, and IT support, with the technology acceptance model (TAM), which focuses on quality integration, correctness, response time, and reliability to evaluate user performance of the ERP system. Large manufacturing and consumer goods production companies could also conduct research to evaluate the effect of the ERP system as a support to their administrative and operational activities.

Other research on ERP system implementation can incorporate other critical success factors such as top management support, training and education, software development and testing, project champion roles, vendor support, use of a steering committee, customization, change management, and IT legacy systems. Dimensions of the ERP system such as system quality, information quality, individual and organisational impact can be taken into account when identifying the barriers that can affect the performance of ERP system implementation.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX 1

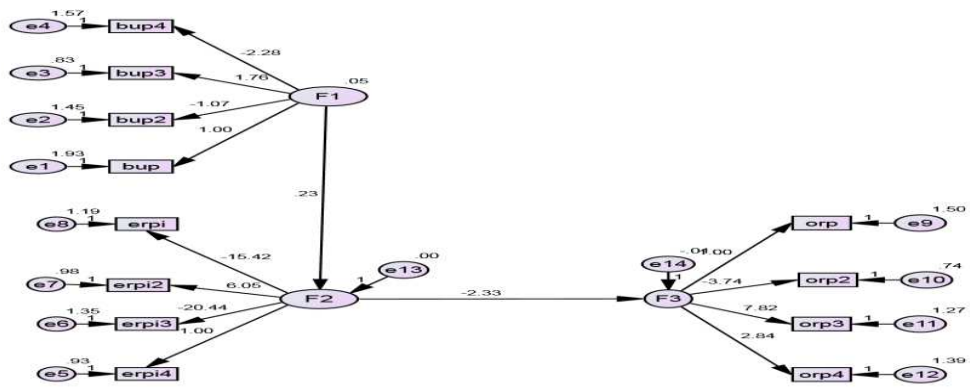

Fig. 2. AMOS Graphic on Business Plan

Table 4. Numerical Value of Amos Graphic on Business Plan

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df RMSEA GFI	93.955 (df=52, p=0.000) 0.090 0.881	P >0.05 ≤ 0.05~ 0.08 ≥0.8~ 0.9	Highly Significant Close Fit Absolute Fit	Carmine and McLver, 1981. Browne and Cudeck, 1981 Hair et al. [61]
Incremental Fit	AGFI NFI TLI CFI	0.821 0.435 0.469 0.581	≤ 0.8~ 0.9 ≥ 0.8~ 0.9 ≥0.8~ 0.9 ≥ 0.8~ 0.9	It's a Close Fit	Jöreskog and Sörbom, [62] Bentler and Bonnet, 1980
Parsimonious Fit	Chi-Square/df CMIN/DF	1.807	<0.5	Highly Significant	James et al. 1982

Source: Field Survey, 2021

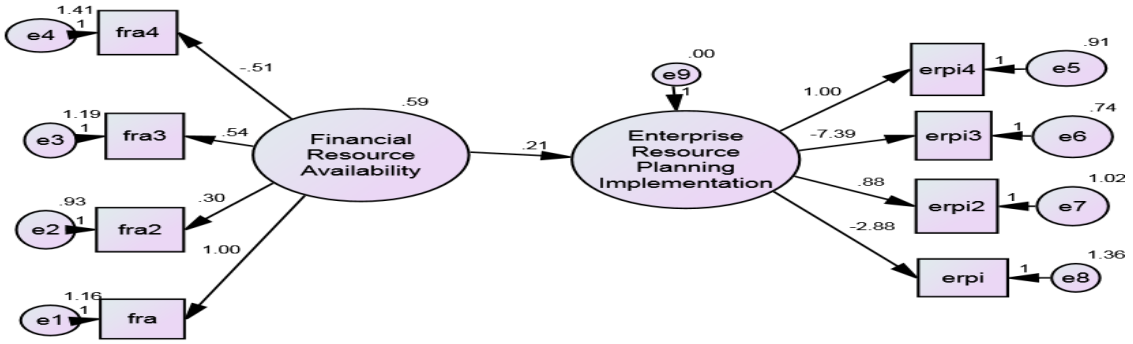

Fig. 3. AMOS Graphic on Financial Resource Availability

Table 5. Numerical Value on Financial Resource Availability

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df RMSEA GFI	30.026 (df=19, p=0.51) 0.077 0.926	P >0.05 ≤ 0.05~ 0.08 ≥0.8~ 0.9	Not Significant Perfect Fit Absolute Fit	Carmine and McLver, 1981. Browne and Cudeck, 1981 Hair et al. [61]
Incremental Fit	AGFI NFI TLI CFI	0.860 0.678 0.750 0.831	≤ 0.8~ 0.9 ≥ 0.8~ 0.9 ≥0.8~ 0.9 ≥ 0.8~ 0.9	It's a Close Fit	Jöreskog and Sörbom, [62] Bentler and Bonnet, 1980
Parsimonious Fit	Chi-Square/df CMIN/DF	1.580	<0.5	Highly Significant	James et al. 1982 James et al. 1982

Source: Field Survey, 2021

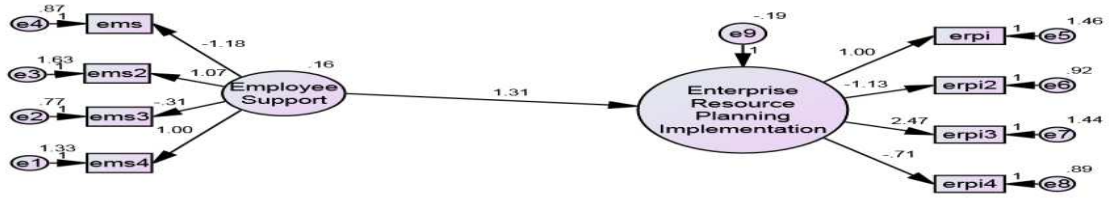

Fig. 4. AMOS Graphic on Employee Support on ERP Implementation

Table 6. Numerical Value on Employee Support on ERP Implementation

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df RMSEA GFI	37.496 (df=19, P=0.00) 0.099 0.921	P >0.05 ≤ 0.05~ 0.08 ≥0.8~ 0.9	Highly Significant Close Fit Perfect Fit	Carmine and McLver, 1981. Browne and Cudeck, 1981 Hair et al. [61]
Incremental Fit	AGFI NFI TLI CFI	0.850 0.627 0.624 0.745	≤ 0.8~ 0.9 ≥ 0.8~ 0.9 ≥0.8~ 0.9 ≥ 0.8~ 0.9	Close Fit Close fit Close Fit Close Fit	Jöreskog and Sörbom, 1984 Bentler and Bonnet, 1980
Parsimonious Fit	Chi-Square/df CMIN/DF	1.973	<0.5	Highly Significant	James et al, 1982 James et al, 1982

Source: Field Survey, 2021

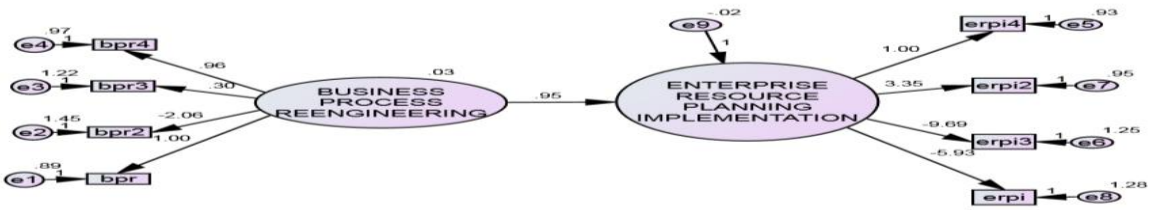

Fig. 5. AMOS Graphic on Business Process Re-Engineering

Table 7. Numerical Value on Business Process Re-Engineering

		Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df RMSEA GFI	P >0.05 ≤ 0.05~ 0.08 ≥0.8~ 0.9	Highly Significant Close Fit Perfect Fit	Carmine and McLver, 1981. Browne and Cudeck, 1981 Hair et al. [61]
Incremental Fit	AGFI NFI TLI CFI	≤ 0.8~ 0.9 ≥ 0.8~ 0.9 ≥0.8~ 0.9 ≥ 0.8~ 0.9	Close Fit Close fit Close Fit Close Fit	Jȍreskog and Sȍrbom, [62] Bentler and Bonnet, 1980
Parsimonious Fit	Chi-Square/df CMIN/DF	<0.5	Highly Significant	James et al, 1982 James et al, 1982

Source: Field Survey, 2021

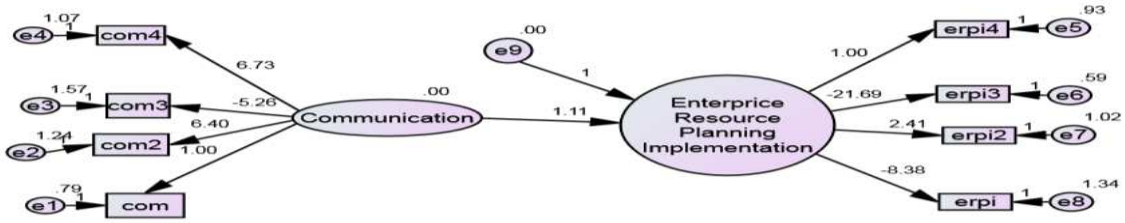

Fig. 6. AMOS Graphic on Communication

Table 8. Numerical Value on Communication And ERP Implementation

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df RMSEA GFI	24.713(df=19, P=0.170) 0. 55 0. 943	P >0.05 ≤ 0.05~ 0.08 ≥0.8~ 0.9	Not Significant Close Fit Perfect Fit	Carmine and McLver, 1981. Browne and Cudeck, 1981 Hair et al. [61]
Incremental Fit	AGFI NFI TLI CFI	0.893 0.645 0.797 0.863	≤ 0.8~ 0.9 ≥ 0.8~ 0.9 ≥0.8~ 0.9 ≥ 0.8~ 0.9	Good Fit Close fit Close Fit Good Fit	Jȍreskog and Sȍrbom, [62] Bentler and Bonnet, 1980
Parsimonious Fit	Chi-Square/df CMIN/DF	1.301	<0.5	Highly Significant	James et al, 1982 James et al, 1982

Source: Field Survey, 2021

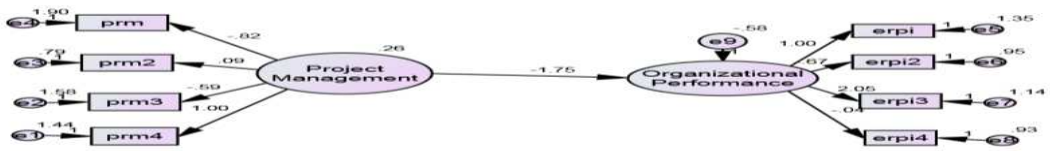

Fig. 7. AMOS Graphic on Project management

Table 9. Numerical value on Project Management and ERP Implementation

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df	48.111(df =19, P=	P >0.05	Significant	Carmine and McLver, 1981.
	RMSEA	0.00)	≤ 0.05~ 0.08	Close Fit	Browne and Cudeck,
	GFI	0.124	≥0.8~ 0.9	Perfect Fit	1981
		0. 896			Hair et al. [61]
Incremental Fit	AGFI	0.804	≤ 0.8~ 0.9	Perfect Fit	Jŏreskog and
	NFI	0.611	≥ 0.8~ 0.9	Close fit	Sŏrbom, 1984
	TLI	0.552	≥0.8~ 0.9	Close Fit	Bentler and Bonnet,
	CFI	0.692	≥ 0.8~ 0.9	Good Fit	1980
Parsimonious Fit	Chi-Square/df CMIN/DF	2.532	<0.5	Highly Significant	James et al, 1982 James et al, 1982

Source: Field Survey, 2021

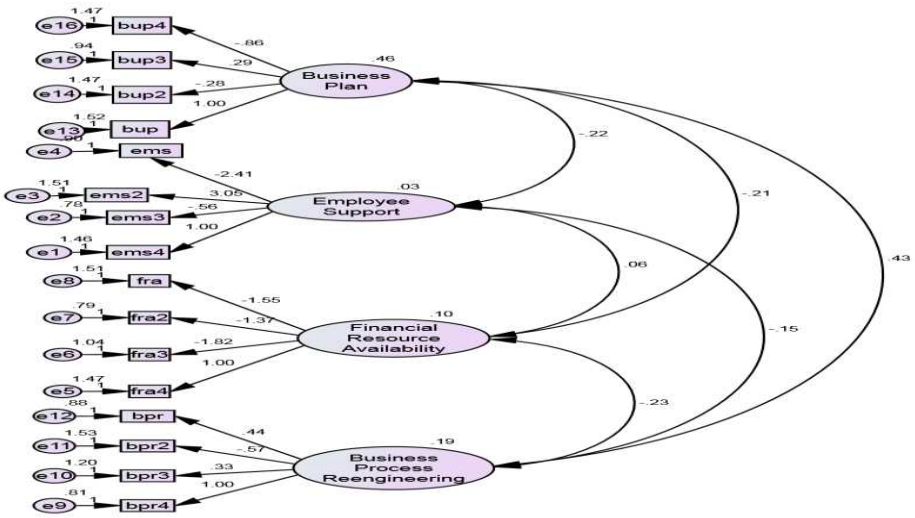

Fig. 8. AMOS Graphic on the Relationship between Critical Success Factors on ERP Implementation

Table 10. Numerical Value on the Relationship between the Critical Success Factors on ERP Implementation

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df	256.643	P >0.05	Highly	Carmine and McLver,
	RMSEA	(df=98,	≤ 0.05~ 0.08	Significant	1981.
	GFI	P=0.00)	≥0.8~ 0.9	Mediocre Fit	MacCallum et al,
		0.128		Close Fit	1996
		0.758			Hair et al. [61]
Incremental Fit	AGFI	0.664	≤ 0.8~ 0.9	Close Fit	Jŏreskog and
	NFI	0.482	≥ 0.8~ 0.9	Close fit	Sŏrbom, [62]
	TLI	0.316	≥0.8~ 0.9	Close Fit	Bentler and Bonnet,
	CFI	0.441	≥ 0.8~ 0.9	Close Fit	1980
Parsimonious Fit	Chi-Square/df CMIN/DF	2.619	<0.5	Highly Significant	James et al, 1982 James et al, 1982

Source: Field Survey, 2021

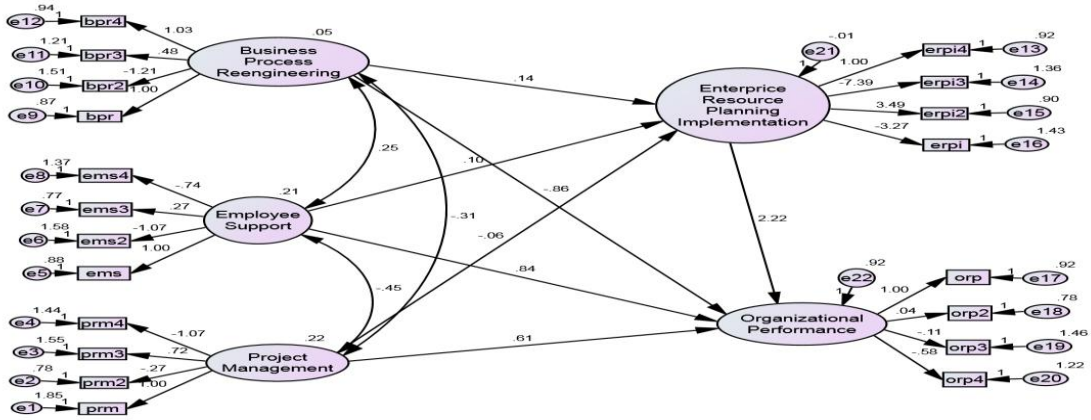

Fig. 9. AMOS Graphic on the Relationship among the Identified Factors for ERP Implementation and Organisational Performance

Table 11. Numerical Table on the Relationship among the Identified Factors for ERP Implementation and Organizational Performance

		Results	Level of Acceptance	Comment	Source
Absolute Fit	X^2/ df	377.048 (df	P >0.05	Highly	Carmine and McLver,
	RMSEA	= 160, P =	≤ 0.05~ 0.08	Significant	1981.
	GFI	0.00)	≥0.8~ 0.9	Mediocre Fit	MacCallum et al,
		0.117		Close Fit	1996
		0.720			Hair et al, [61]
Incremental	AGFI	0.635	≤ 0.8~ 0.9	Close Fit	Jŏreskog and
Fit	NFI	0. 368	≥ 0.8~ 0.9	Close fit	Sŏrbom, [62]
	TLI	0.366	≥0.8~ 0.9	Close Fit	Bentler and Bonnet,
	CFI	0.466	≥ 0.8~ 0.9	Close Fit	1980
Parsimonious	Chi-	2.357	<0.5	Highly	James et al, 1982
Fit	Square/df			Significant	James et al, 1982
	CMIN/DF				

Source: Field Survey, 2021