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# ORGANIZATIONAL PRODUCTIVITY AND MANAGEMENT INFORMATION SYSTEM IN RIVERS STATE'S MANUFACTURING INDUSTRIES

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## ABSTRACT

*This study investigates the connection between the productivity of the industrial businesses in Rivers State and the management information system. The cross-sectional survey research design was employed. 58 managers from 16 manufacturing companies in Rivers State made up the study's population. A systematic questionnaire was used to collect primary data. The study tool was verified through experiment and adherence, and its reliability was established through the use of the Cronbach Alpha coefficient, with all of the items scoring over 0.70. The Spearman Rank Order Correlation Coefficient was used to test the hypotheses. The tests were run at a significance level of 0.05 and a 95% confidence interval. The results indicated that in Rivers State, manufacturing companies' office productivity and management information system have a high correlation. Information systems were advised to be implemented at the management and operational levels of every organization, and organizations must adopt MIS to close the communication gap between top-level management, middle-level management, and lower-level management in order to improve the company's capacity for effective operation with the expectation of high profitability.*

**Keywords:** Management Information System, Office Productivity, Operational Efficiency, Profitability

## 1. Introduction

Organizations see the effective implementation of information technology (IT) as a way to achieve success by boosting productivity, profitability, and the level of information, which is a common benefit staked by nearly all businesses regardless of their disposition because it is a fundamental component of any business entity regardless of their ownership structure as it allows assessment and formation of newly discovered products and services.

Making informed decisions and comprehensive decisions about every aspect of their authority is made easier with the use of information. Resources cannot be wisely sorted and transformed into final products targeted at a certain market point for profit unless they are well informed because a firm cannot survive or function effectively. In order to benefit from the maximum amount of expertise, company data should be continually conducted, examined, evaluated, put together, held, and ultimately made accessible. In order to complete those objectives, a computerized system is created, enhanced, used, and managed.

If information is carefully sourced, collated, arranged, and documented to comply with organizational requirements, the information it has stored will still be accessible to those who demand it. Any information system should have the ability to access, recover, and archive data, as well as to maintain the archived information as current as feasible (Moga, 2007). The information system is the method used to ensure that managers have information readily available whenever they require it and in the sequence that they decide on regarding it. By providing relevant data to aid their taking decisions, it is designed to help their work. Organizations adopt innovations to improve the quality of services provided to a variety of people as well as out of a strong desire to grow their profitability and market share. In an assortment of industries, there is a growing level of concern about the adoption of innovations and the attributes of creative companies (Boyne et al. 2005; Rashman & Radnor 2005; Walker 2008).

Contrarily, prior research on whether innovations similar to MIS that have been embraced can genuinely produce favourable results is still in the development stage. Results of qualitative and quantitative research in the developing literature do not always agree or suggest a good connection (Walker & Damanpour 2008). But unlike studies of business organizations, where the focus has been on how innovations in products affect performance, the significance in banks has been on how changes in facilities affect performance. A more advanced and competitive corporate environment has been created as a result of the fast growth of IT and the advancement of computer-based information systems. In fact, IT has changed how organizations operate, moving from a purely supporting function in the background to one that is timeless. Computer technology advancements have made it possible for managers to select the information they need, in the format that best suits their needs, and at the time they want. In most circumstances, the majority of individuals require this information at the same time and it has to be recent. Accordingly, it must be precise, succinct, timely, thorough, well-dispersed, and storable.

Most businesses today rely on IT. PCs, however, cannot improve organizational productivity on their own; this can only happen if they are used effectively. Businesses can benefit significantly from the analysis of data by computer systems to produce accurate, thoroughly researched, current, and cost-effective information. While the summation, applicability, timeliness, and completeness of the information presented will largely depend on the skills of the individuals involved in its construction and preference in 2003, Harizonova.

Recent years have seen an increase in the number of research looking at MIS procurement as

proof with one notable exception (Bharadwaj et al. 1999, Devaraj & Kohli 2000, Sohal Moss & Ng 2001). As a result, the relationship between MIS suppositions and their effect on organizational performance has been examined in the literature on MIS adoption. However, because of the nature of the research methods employed, this line of inquiry has not conclusively inferred the effect of usage and influence of certain technologies on organizational performance, given that most businesses struggle to endure for an extended period of time. According to De Gevs (1997), a company of any size has a 12.5-year average life expectancy globally.

Though nearly all IT-related decisions are crucial to the growth and continuation of a business. As inventive activity increases, a successful organization must be able to control and adapt quickly. their ability to survive despite all odds, especially in the rapidly changing environment of the twenty-first century. Additionally, a related line of inquiry investigates the issue of technology adoption (Lucas & Spitler 1999). A contentious issue in information systems research is the similarity between self-reported usage and uncompromised or real utilization (Venkatesh & Davis 2000). Because similar complainants are asked similar questions on their comprehension of the IT and its rationality, self-reported usage may introduce biases. Additionally, there is evidence that suggests recognized usage and substantiated usage could not be compliant. There is a norm for looking at an objective, independently monitored measure of technology usage because the majority of recent studies have been conducted in experiment settings with student subjects. This study elaborates on this idea. Assessing the problem of technology use within the context of a bank network is a method of research. This study investigates the role of the management information system (MIS) as a tool for organizational performance in the Nigerian manufacturing sector.

## **1.2 Definition of the Issue**

The term "management information systems" (MIS) refers to a wide range of resources and business processes that are used to compile data from functional or tactical systems. The information is then displayed quickly and easily so that mid-level and upper-level managers may use it to make the best choice. The entire system is set up to help the business achieve its strategic and tactical objectives. The main source of management issues in Nigerian organizations. These show up in Poor decision-making, inadequate resource management, and lack of organizational synergy. Our human limitations make this evident. By enabling organizations to cut managerial and labour costs while improving the efficiency and accuracy of their operations, management information systems become helpful. When it comes to precision, completeness, and relevance in the allocation of resources, management information systems assist in making the information available that is required to make efficient and effective judgments. Information also extends the efficiency of such decisions, which improves performance (Al Tai, 2005). Multiple functional systems exist in organizations. Typically, these consist of many systems such as inventory management, call centre, financial, and logistical ones. Without a management information system, coordination of these various departments or functions will continue to be ineffective and difficult. Information from many systems is integrated by MIS. This helps management staff members understand their own department's contributions better. A manager may often make the best decision to meet the needs of the client with the support of a combination of facts, such as sales numbers combined with existing records.

Any organization's power source is information, and one without reliable information will always fall short in the market's fierce competition. "Therefore, in order for any organization to perform exceptionally well and achieve set objectives, the organization must have

adequate information systems so that it can be aware of competitors' activities in the market, timely plan ahead to outperform them in the industry, identify its target market (customers), and understand how to meet their desired needs and demand, when all these goals are met with the aid of an information system, the business organization survives the test of time and performance is successfully and successfully realized. The purpose of Delone & Mclean's study, "Information System Success Revisited," published in 1992, was to review, re-examine, and reformulate the IS (Information System) success model and IS measurement practices. The study focused on theoretical and empirical IS research conducted by a number of researchers in the 1970s and 1980s. Mojisola et al.'s (2008) study examined, via the use of case studies, the effects of information systems on company performance and profitability. The project's goal is to examine Beale and Cole's information system and consider the best course of action. The steps taken to implement alternatives to the current IS procedures and to share the lessons and experiences learned from the replacement process and the impact on the organization's performance.

In order to manage organizational productivity and the industrial sector in Rivers State, this study aims to do so. It also aims to address the following research queries:

### **1.3 Research Concerns**

- i. How do management information systems and improved operational efficiency in Rivers State's manufacturing companies relate to one another?
- ii. How has Rivers State's manufacturing industry's increasing profitability and diligence been correlated with management information systems?

### **1.4 Theorization**

Ho1: Does the increasing operational efficiency of manufacturing enterprises in Rivers State have any significant correlation with management information systems?

Ho2: Nothing exists There is a strong correlation between management information systems and manufacturing enterprises' increasing profitability and ethical behavior in Rivers State.

## **2.0 Literature Review**

### **System of Management Information**

(Lucey, 2005) states that "MIS is a system that transforms data from internal and external sources into information and communicates that information in a suitable manner to managers at every management level in all area of function to help them make prompt and effective decisions for planning, directing, and controlling the organizations activities for which they are responsible." Over time, the conceptualization of MIS has developed and now includes a wide range of organizational function elements (Gabriel, 2012).

"An information system that utilizes data collected by proceedings, transforms system, and utilizes such data into reports for managers to make standard business decisions in reciprocation to organized problems," according to Parson's definition of MIS in 2012. In other words, "MIS is distinguished by the creation of frequent reports used by managers in their standard and procedural tasks. One of the key objectives of MIS is to increase the effectiveness of managerial tasks; different levels of management have different expectations or needs, and MIS can produce pre-planned reports as well as impromptu reports.

According to Lucey (2005), the term "management information systems," which is often abbreviated as "MIS," has come to be synonymous with "computer," but the two concepts are

actually distinct because management information systems predated the development of computer technology and were a part of the operations of premodern organizations. This claim is supported by the fact that traditional and manual information management methods were used by businesses when records were preserved. But it's essential, because it simplifies and expedites data processing and opens up new perspectives on exciting career opportunities in MIS, it is clear that the computer deserves credit for the rising interest in management information systems (Ottih, 2005).

Managers are better able to make rapid and efficient decisions for their firms with regard to investments, hiring, new products, and many other areas thanks to MIS's speedier access to necessary information. We refer to the process of selecting specific actions from a range of choices as decision-making. Every level of management, including top management, middle management, and lower management, as well as every department, including marketing, accounting, human resources, and production, make decisions (Lucey, 2005).

For a key taking everything into account, Management Information Systems is a very complicated and delicate field that demands a lot of caution from its managers. For this reason, it is advised that businesses ensure they carefully select the people who will be in charge of managing their systems. A person's certainty of favourable possibilities for a MIS with regard to decision-making and other related business areas is improved by how cautious and professional they are (Lingham, 2006).

Systems for managing information are essential for enhancing corporate security (Davenport & Short, 2008). For instance, the owner may frequently easily program the majority of management information systems to carry out specific tasks at specific times. In practice, managers configure the system to do a few regular checks that can help a business become more efficient by quickly identifying faults or other issues. Additionally, the majority of MIS may be programmed to save a ton of important time and resources. Consequently, company managers can program the systems to automatically detect specific restrictions and even provide solutions to them thanks to their programmability.

### **2.1.1 Management information system components**

#### **• Hardware**

Information system hardware refers to the tangible, material components of the technology that make up a system for information. Information technology hardware includes things like desktops, laptops, hard drives, tablets, and flash drives.

#### **• Software**

A set of instructions known as software tells hardware what to do. Software cannot be touched; they essentially type out a set of instructions that tells the hardware what to perform when they construct software applications. The two most important components of software are the operating system, which makes the hardware usable, and the application, which performs a useful function. Microsoft Windows for personal computers and Android, developed by Google, for smartphones are two examples of operating systems. Microsoft Excel is one example of application software.

#### **• Data**

Data is the third component. A compilation of facts can be thought of as data. Pieces of data rarely have much value on their own. But when collected, organized, and organised into a database, data may be made into a useful tool for enterprises. Organizations compiled all of

the various types of data and employ it in decision-making. The organization can then be enhanced by looking at these decisions' effects on the organization.

**• People**

When considering information systems, it is simple to become preoccupied with the technology side and forget that there is a need to go beyond these to better grasp how they integrate into an organization. The following section provides a central perspective on those involved with information systems. The people who are involved with information systems, from the front-line help-desk staff up to the chief information officer (CIO), are a crucial element that cannot be overlooked.

**• Process**

Process is the final element of information systems. A procedure is a series of steps taken to achieve a target or intended outcome. Information systems are increasingly being integrated with organizational procedures, improving productivity and giving procedures more control. However, organizations that seek to successfully employ information systems outperform those that merely engage in self-regulatory activities using technology. The overarching objective is to utilize technology to manage and enhance processes, both internally within a business and outside with suppliers and clients. Technology buzzwords like "business process reengineering," "business process management," and "enterprise resource planning" all refer to how these business patterns' performance is always improving as a result of combining technology with them. This aspect of information systems is heavily targeted by companies looking to obtain an advantage over their rivals.

**Office Productivity One Concept** The issue of organizational productivity is one of the most important issues that management must address. High productivity results in higher capital gains (Yadav & Marwa, 2015); productivity is defined as the ratio of total output to one unit of total input. A further way to think about productivity is as the effectiveness and efficiency with which value (output) is created from inputs (such as hardware, software, people, process, data, technology, and so on). Productivity growth is important to a company because it controls the actual income resources needed to meet obligations to stakeholders, including shareholders, customers, suppliers, employees, and government agencies (through taxes and regulations). As a result, productivity is described as a measure of the intent behind production. Productivity gains can result in better revenues for people and organizations (Lumen, 2018). Productivity increases, Resources can be turned into revenue, which can then be used to pay off creditors and keep cash flow for expansion and further growth. Productivity promotes competition and potentially advantageous competitive positions. Productivity has a key role in how well businesses and countries produce. A higher national production can raise living standards because people have more money to spend on leisure activities, housing, education, and social and environmental programs in addition to buying products and services. Increased productivity aids firms in making more money. The ability to generate a good or service is fully measured by productivity. More specifically, productivity is a gauge of how well a resource is used to meet time-sensitive goals that are expressed in terms of quantity and quality. Organizations can use this in a variety of ways: worker productivity, equipment productivity, capital productivity, energy productivity, and a lot more. It is possible to create a productivity ratio for a single activity, a department, a facility, an organization, or even an entire nation. Productivity can be conceptualized objectively. It can be evaluated as an objective idea, especially in comparison to an international standard. As a result, businesses can keep an eye on productivity for tactical purposes like corporate planning, organization development, or rivalry analysis. It can also be

applied for strategic purposes like project management oversight or budgetary control. Because productivity is a scientific notion, it can be rationally explained and scientifically examined. It qualifies as a variable because it can also be quantified and measured. Because of this Both an absolute and a relative phrase can be used to define and quantify productivity. It is considerably more useful as a notion addressing relative productivity or as a productivity factor; nonetheless, an absolute definition of productivity is not very useful. Productivity is helpful as a comparative indicator of the actual production output vs the actual resource input, assessed over time or in comparison to similar entities.

### **Measures of Office Productivity 2.1.2**

#### **Operational efficiency theory**

The term "operational efficiency" is made up of the phrase's "operations" and "efficiency," therefore it can be described as a measure of goals or a task. Its goal is to provide clients with the best possible advantage (product/service). Resource use, production, distribution, and inventory control are all fundamental concepts. Operational efficiency is primarily comprised of the following elements: resource consumption, production, distribution, and inventory management (Timothy, Coelli, Prasada, Christopher, & George, 2015). Efficiency is a key concept in all businesses. The cost of input for the product produced is considered when efficiency is conceptualized.

The reduction of waste and the optimum use of resources are related to operational efficiency in the production of high-quality goods and services for consumers. Profitability of the business increases as operational efficiency does.

Operational effectiveness reveals how companies handle their revenue and use it to increase profits. Every organization has a different way of maximizing operational effectiveness, and each business uses a different set of strategies to reduce waste and inefficiencies and enhance the productivity that can lead to higher growth or profits. a company's effectiveness on the job need skills to maximize the usage of the available resources.

#### **2.1.3 Organizational Performance**

The length of time that organizations were viewed as social systems accomplishing their goals was the definition of organization performance in the early 1950s (McNamara 2010). Organizational performance was defined as an organizational ability to discover its business environment in order to have access to and use the limited resources between the years 1960 and 1970 after early 1950s, as a result of which organizations had begun to find new patterns to achieve their performance (Yuchtsman & Seashore, 1967). Directors started to realize that an organization is only successful if it is effective in achieving its goals while using few resources.

There are two key indicators of a company's performance. Financial is the first, while emotional is the second. non-financial. A measure of the company's overall financial health over a specific time period is called financial performance. The firm's profitability, the ratios, and the total balance sheet performance make up financial measurements. Non-financial (qualitative) metrics are the other way to assess an organization's performance. These metrics are intangible. The prior financial performance measurements, according to Pearson and Robinson (2002), convey erroneous information about the size of the company and its capacity for future growth. They contend that a business should always look for ways to expand and improve its qualitative standards. Customers, employees, a branch network, customer happiness, and customers are a few examples of non-financial performance standards. Both Kaplan and Norton (2008) concur that quality development and Performance

and development must be ongoing processes. Every organization strives to achieve performance. Strategic planning focuses on developing these outcomes, whereas it refers to the outcome of actions and predetermined goals.

#### **2.1.4 Corporate Performance Metrics**

There are several business performance measures but profitability and market share are the key performance indicators for this study.

##### **Higher Profitability**

Profitability is the ability of a business to make money using the resources at its disposal. Profit maximization is the aim of the majority of organizations (Niresh & Velnampy, 2014). According to Muya and Gathogo (2016), profitability is the ability of a company, organization, firm, or business to generate a profit from all of its business operations. usually, profitable serves as a return on investment for the business owner. Actually, an entrepreneur's primary driving force behind whatever they do is to make money. According to Ogbadu (2009), profit is another metric used to assess how well a company is performing. Profit is the difference between sales income and total costs, which include things like labor costs, material costs, and so on (Stierwald, 2010). A corporate entity's main objective is to be profitable, which can be expressed as either accounting profits or economic profits (Anene, 2014). According to Muya and Gathogo (2016), profitability demonstrates the management team's effectiveness in converting the firm's resources into profits. Because of this, businesses can benefit greatly from greater profitability (Niresh & Velnampy, 2014). Long-term survival and success of any kind require careful consideration of Profitability determines a company's success. Profitability is what attracts investors, and a profitable company has a good chance of thriving and enduring for a very long time (Farah & Nina, 2016). Many businesses work hard to boost their profits, and they spend endless hours in meetings attempting to come up with novel ways to lower operational expenses and a variety of techniques to boost sales (Schreibfeder, 2006).

A bigger market share is the percentage of sales that a company generates in a certain market over a specified time period. Profits increase when the market share increases. An offensive or attack strategy to strengthen the company's position in the market is to increase or build market share (Sarkissian & Schill, 2010). Measured by market share, the choice of a product by consumers over competing goods. Typically, a larger market share translates into higher sales, less work to sell more, and a high barrier to entrance for rival businesses. If the market grows, the leader will benefit more than the rest if they have a larger market share.

In general, sales growth brought on by primary demand (total market growth) is less expensive and more profitable than sales growth made possible by stealing market share from rivals. Losses in market share, on the other hand, can indicate significant long-term issues that call for tactical changes. Businesses may not be viable if their market shares fall below a specific threshold. Similar to this, market share trends for specific products within a company's product line are viewed as preliminary signs of potential future possibilities or issues (Armstrong and Greene, 2007).

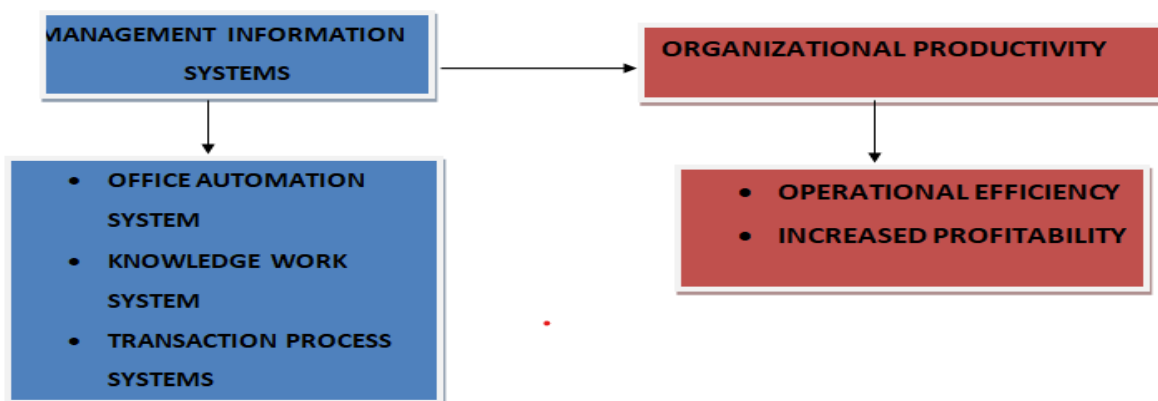
#### **2.2 Leadership Performance of Organizations and Information Systems**

Information System (IS) has significantly improved organizational performance. Information systems essentially manage the flow and upkeep of data concerning crucial individuals, locations, and objects within a commercial setting and organization (Jackson, 1997). Note that good organizational performance depends in part on IS improvements in output, effective decision-making, and strategic planning. These technologies enable businesses to recognize



how information systems (IS) contribute to high standards of performance. Additionally, companies must adopt new technology innovations that help them get greater advantages, particularly in the field of economic orientations, which has emerged as one of the most important technologies and has been stated to be what IS is made up of. More than 70% of capital was put into the service sector (Mathis, 2006). As a result, there is a widely held notion that IS (Information System) is necessary for organizational survival and progress as a result of the rapid rise of IS and the reflections on organizations, markets, and sectors that have followed (Ahed & Louis, 2008).

To determine the underlying relationship between information systems and organizational performance, researchers are currently working hard. Consequently, IS is an example of a pragmatic reaction by enterprises to meet these difficulties (Akata, 2003). From a practical standpoint, the importance of IS to companies cannot be overstated, particularly when it comes to how it influences organizational processes, procedures, and methods of operation. This crucial process highlights the need for enterprises to adopt digital transformation in order to respond to external surroundings more quickly than they could with previous methods organizations more adaptability to thrive in the volatile commercial climate.



**Fig.1 Conceptual Framework for the relationship between management information system and productivity**  
Source: Author's Desk Research, 2021

### 2.3.1 Theoretical foundation

#### 2.3.1 The Constructivism Theory of John Dewey (1859–1952)

Constructivism is an epistemological theory of knowledge that contests the idea that people acquire knowledge and explanations through a combination of their experiences and presumptions. The constructivism hypothesis was first developed by John Dewey (Mascolol & Fischer, 2005). Dewey discussed constructivism theory, arguing that if students do not have prior related experiences in order to fully complete the learning process, learning will not be effective. He had the opinion that knowledge must be formed via experiences by students. Their mental notions can be developed thanks to these experiences. He also clarified how new data can be patterned. Three different types of cognitive processes, assimilation, accommodation, and equilibration, take place in the learner's brain. When learning new material, students assimilate it into their own ideas. When a learner makes an accommodation, they choose a new idea to introduce to the classroom in place of an outdated one. Equilibrium requires assimilation and accommodation and is a high-level mental growth process.

It is recognized that students can develop new knowledge through novel experiences, in accordance with John Dewey's Theory of Constructivism. An area where the student can truly acquire new knowledge is the information system. Information system components, as examples: The Management Information System (MIS) is a computer-based system that promotes flexible and quick access to exact data.

An additional component of an information system is a system for automating offices that consists of computers, communication devices, and staff members to carry out administrative tasks. The Decision Support System (DSS), which is also regarded as a component of information systems, is a computer-based information system that works in concert and is used at the management level of an organization, much like MIS. The ability to switch from outdated methods of carrying out office tasks to new methods utilizing information technology can be characterized as accommodation in the learner. The delivery of office tasks, objectives, and goals becomes better and more efficient at a certain point when both employees and supervisors start to become faster and more efficient thanks to new information system technologies. The capacity and development of the mental faculties of the degree of the new technology is now being embraced by the workforce.

### 3.0 METHODOLOGY

The cross-sectional survey study design was chosen. 58 managers from 16 industrial enterprises in Port Harcourt, Rivers State, made up the study's population. Through the use of a standardized questionnaire, primary data was acquired. The dependability of the research instrument was determined using the Cronbach Alpha coefficient, with all the items scoring over 0.70. The research instrument was validated through evaluation and acceptance. Using the Spearman Rank Order Correlation Coefficient, the hypotheses were evaluated. The tests were run with a 0.05 threshold of significance and a 95% confidence interval.

### 4.0 ANALYSIS OF THE DATA AND RESULTS

Analysis of Null Hypothesis 1: In Rivers State, manufacturing enterprises' operational efficiency is not significantly impacted by management information systems.

**Table 1: Correlation between Management Information System and Operational Efficiency.**

<b>Information System Operational Efficiency</b>			
<b>Management Information System</b>	Pearson Correlation	1	0.598
	N	50	50
<b>Operational Efficiency</b>	Pearson Correlation	0.598	1

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

System has little to no impact on how effectively manufacturing businesses in Rivers State operate.

According to the outcome of the statistical analysis above, which is demonstrated by the Pearson correlation coefficient,  $r = 0.598$ , there is an average, positive association between management information system and operational efficiency of industrial enterprises in Rivers State.

**Table 2: Z-r transformation demonstrating the degree to which management information systems affect profitability**

S/N	Variable	Mean	Std.	Obsv. N	Df	Pearson Correlation Coefficient	Z-r	Relationship
1.	<b>Management Information System</b>	3.11	0.10	50	48	0.598	0.241	Relationship is significant
2.	<b>Operational Efficiency</b>	3.07	0.11	50				

Additionally, the z-r modification table below demonstrates that there is a substantial association between the management information system and operational efficiency (z-r value = 0.241, which is smaller than the z-critical value of 1.96). As a result, the null hypothesis is disproved, and the findings show that management information system has a notable impact on operational efficiency of industrial enterprises in Rivers State.

Analysis of Null Hypothesis 2: The operational effectiveness of manufacturing enterprises in Rivers State is not significantly impacted by decision support systems.

**Table 3: Profitability and the management information system are correlated.**

<b>Management Information System</b>		<b>Operational Efficiency</b>	
<b>Decision support system</b>	Pearson Correlation	1	0.818
	N	50	50
<b>Operational Efficiency</b>	Pearson Correlation	0.818	1

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

According to the outcome of the statistical analysis above, there is a very high positive association between management information system and profitability of manufacturing enterprises in Rivers State, as shown by the Pearson correlation coefficient,  $r = -0.818$ .

**Table 4: Z-r transformation demonstrating the degree of relationship between profitability and the management information system**

S/N	Variable	Mean	Std.	Obsv. N	Df	Pearson Correlation Coefficient	Z-r	Relationship
1.	<b>Management Information System</b>	3.08	0.11	50	48	0.818	0.107	Relationship is significant
2.	<b>Operational Efficiency</b>	2.95	0.15	50				

Since the z-r value of 0.107 is less than the z-critical value of 1.96, the relationship between the management information system and profitability is considerable, as shown by the z-r transformation table above. The null hypothesis is rejected as a result, and the conclusion is

that the management information system significantly affects the profitability of manufacturing enterprises in Rivers State.

## **DISCUSSION AND FINDINGS**

According to the study's findings, management information systems and office productivity in Rivers State's manufacturing enterprises are significantly correlated. This conclusion was further supported by the findings of Perez-mendez and Cabezas (2015), who revealed that MIS enables junior management staff to work with maximum performance by making operational data available for planning, scheduling, and control, and helps them better in decision-making at the operations level to correct an out-of-control situation. The planning, target-setting, and control of corporate operations are additional tasks that MIS helps middle management with, according to Adebayo (2014).

The research of Mithas, Ramasubbu, and Sambamurthy (2012), which noted that as a result of their larger investments in the companies get higher profitability with less financial loss thanks to management information systems and better opportunities to learn from random failures in their general information system portfolio. A second, learning-based explanation is put forth to support the study's findings, arguing that years of continuous investments in management information systems and experience in managing these systems have affected businesses' capacity to support information and fortify other organizational capabilities to generate profits (Grover and Ramanlal 2011; Mithas et al. 2012). Several empirical studies also supported this theory by demonstrating that businesses can use management information systems to boost customer satisfaction while also boosting profitability thanks to the advantages of customer loyalty, cross-selling, and lower marketing and selling expenses (Fornell et al. al. 2015; Fornell et al. 2016; Grover and Ramanlal 2011; Mithas and Jones 2017; Mithas et al. 2015).

## **CONCLUSION AND RECOMMENDATIONS**

The researcher has concluded from the study's findings that firms must implement management information systems in their operations to achieve optimal productivity. The study came to the conclusion that in order to achieve operational efficiency, businesses must develop modern work processes that make use of information systems technology to enhance productivity, profitability, and efficiency.

However, the study found that increased operational efficiency has a fundamental impact on the organizations' profit margins. In conclusion, there is a link between the organizational efficiency of manufacturing organizations and management information systems.

The study suggests that:

- i. Management information systems should be offered and utilised, not only in manufacturing organizations but also in other enterprises that require the usage of emerging technology. This is thought to improve these companies' performance in a cutthroat industry.
- ii. To improve their operational effectiveness and financial success, manufacturing enterprises and other businesses and organizations should be encouraged to employ office computerization systems including computers, websites, scanners, and other tools.
- iii. To compete in the tough and competitive climate of today, organizations must implement management information systems.
- iv. Organizations must adopt management information systems across all departments in order to fully computerize because everyone within the organization could utilize information to make decisions based on such knowledge at various levels, make an informed conclusion.

- v. In order to close the communication gap between upper-level management, middle-level management, and lower-level management, organizations must implement MIS.
- vi. To ensure that there is no communication gap, MIS develops explicit organizational policies and procedures.

## REFERENCES

- Agarwarl (2005). The information system identify crisis: Focusing on high-visibility and high impact research, *MIS Quarterly*, 29(3).
- Agarwarl, (2005). The information system identify crisis: Focusing on high-visibility and high- impact research, *MIS Quarterly*, 29(3).
- Abbott (2000) Training Teachers in Computer-based Management Information Systems. *Journal of Computer Assisted Learning*, 16 (1), 27–40.
- Obi, E. (2003). *Educational Management: Theory and Practice*.
- Adebayo, F.A. (2014). *Management information system for managers*. Ado-Ekiti: Green Line Publishers.
- Al al-Bait University, Faculty of Economics and Administrative Sciences, Jordan.
- Al Fawzan, & Rashid, M. (2003), modern information system and their impact on the performance of employees, a survey on the General Customs Authority, Saudi Arabia, Master theses, NaifArabe University for Security Sciences, Graduate School, Department of Administrative Sciences, Saudi Arabia.
- Al Meetani, Yousef Abdul Rahman Yousef (2004), the impact of management information systems to improve the efficiency and effectiveness of the Jordanian Commercial Banks: A Case Study of Arab Bank, Master,
- Aral (2010), *Assessing Three-Way Complementarities: Performance Pay, Monitoring and Information Technology*, Sloan School of Management.
- Armstrong, M. (2009). *Handbook of Performance Management an Evidence-based Guide to Delivering High Performance*, 4<sup>th</sup> edition, London, Kogan Page, e-Book.
- Awan, A.G. & Asia, K. (2015) “Determination of the Role of Branch Managers in Promotion of innovations in Commercial Banks of Pakistan”, *International Journal of African and Asian Studies*, 14, 21-28.
- Awan, A.G. & Ayesha, J. (2015) “Impact of Innovation on Employees performance” *International Journal of Management and Information Technology*, 10 (11).
- Awan, A.G. & Rana Ejaz A.Khan (2014) “The Engima of US Productivity Slowdown: A Theoretical Analysis”, *American Journal of Trade and Policy*, 1 (1), 7-15.
- Awan, A.G. & Syeda Zurait-ul Zahra (2014) “Impact of Innovation on Consumers’ behavior: A case study of Pak Electron Ltd”, *European Journal of Business and Innovation Research*, 2(6), 93-108.
- Awan, A. G., Shaukat, M., & Shehla, M. (2015) “Impact of Management Support and Training of IT employees on productivity of an organization: Evidences from Textile sector in Pakistan” *Science International*, 27 (6).
- Barney (1991). Firm Resources and Sustained competitive advantages, *Journal of Management* 17(1), 99-120.
- Barney. (1991). Firm Resources and Sustained competitive advantages, *Journal of Management*, 17(1), 99-120.
- Beef (1999). *Management information system and statistic*. Trowbridge: Crown Well Press.
- Bell, P., & Winn, W. (2000). Distributed cognitions, by nature and by design. In D. Jonassen, & L. S.
- Belleflamme, P. (2001). Oligopolistic competition, IT use for product differentiation, and the productivity paradox. *International Journal of Industrial Organization*, 19(10), 227-

- 248.
- Birkinshaw (2006). How management innovation happens. *MIT Sloan Management Review*, 47, 81–8.
- Bober (2001). School information systems and their effect on school operations and culture. *Journal of Research on Technology in Education*, 33(5), 1–11.
- Bo-Hanson (2003), Company-based Determinants of Training and the Impact of Training on Company Performance: Results from an International HRM Survey, Organization for Economic Co-Operation and Development (OECD) - Directorate for Education (EDU).
- Brau, B. (2015). *Constructivism*. Retrieved from <https://educationresearch.pressbooks.com>. On 20<sup>th</sup> June, 2019.
- Brynjolfsson (1995). Productivity, business profitability, and consumer surplus: Three different measures of information technology value. *MIS Quart.* 20(2) 121–142.
- Brynjolfsson (1996). The contribution of information technology to consumer welfare. *Inform. Systems Res.* 7(3), 281–300.
- Buvitsk (1995). The potential impact of information technology on the high school principal: a preliminary exploration, *Journal of Research on Computing in Education*, 27 (3), 281–297.
- Campbell (2002), Using the Balanced Scorecard as a Control System for Monitoring and Revising Corporate Strategy, Harvard Business School.
- Carnoy (2004). ICT in education: Possibilities and challenges. Inaugural lecture of the Universitat Oberta de Catalunya (UOC) 2004–2005 Academic Year, Barcelona.
- Castells (1996). *The Rise of the Network Society*. London: Blackwell.
- Castells (2001). *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford; New York: Oxford University Press.
- Cavaye (1997). Personal computing acceptance factors in small firms: A structural equation model. *MIS Quart.* 21(3) 279–305.
- Chambers, J. M., Carbonaro, M., & Rex, M. (2007). Scaffolding knowledge construction through robotic technology: a middle school case study. *Electronic Journal for the Integration of Technology in Education*, 6, 55-70.
- Dehning, B., & Richardson. (2002) Return of Investment Technology: A Research Synthesis, *Journal of Information System*, 16(1), 7 -30.
- Dennis, C. (2002), Using the Balanced Scorecard as a Control System for Monitoring and Revising Corporate Strategy, Harvard Business School.
- Erik, B. O. (2010), *Assessing Three-Way Complementarities: Performance Pay, Monitoring and Information Technology*: NBER.
- Fornell, C., Mithas, S., Forrest, & Morgeson, V. (2016). Krishnan customer satisfaction and stock prices: high returns, low risk. *Journal of Marketing* 70(1), 3–14.
- Goh, G. (2013). *The difference between effectiveness and efficiency explained*. Retrieved from <https://www.insightsquared.com/2013/08/effectiveness-vs-efficiency-whats-the-difference> . on 13<sup>th</sup> August, 2019.
- Hofstrand, D. (2015). *Understanding profitability*. Retrieved from <https://www.extension.iastate.edu> on 13<sup>th</sup> August, 2019.
- Honey, M., Mandinach, E., & McMillan, K. C. (2003). A retrospective on twenty years of education technology policy. Education Development Center, Center for Children and Technology, U.S. Department of Education, Office of Educational Technology.
- Jehad S. B., Nazem, M. M., & Fayez J.A.J. (2016). The impact of management information systems on organizations performance: field study at Jordanian Universities. *Review of Business Research*, 2(9), 127-140.
- John A Martin & Overman, E.S (1988), *Management and cognitive hierarchies, what is*

- the role of management information system? Publish by M E sharp Inc.
- Jonassen, D. H. (1992). *Evaluating constructivistic learning. Constructivism and the technology of instruction: A conversation*, 137-148). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Karim, A.J. (2011). The significance of management information systems for enhancing strategic and tactical planning. *Journal of Information Systems and Technology Management* 8(2), 11-31.
- Kasasbeh, Abdel Karim (2007), the role of information technology in improving corporate performance, A Case Study Jordanian Free Zones Corporation, Arab University for Graduate Studies, Faculty of Management Studies and Senior Finance, Department of Management, Jordan.
- Kevin K. Ykuan, & Patrick, (2001). A perception base-model for EDI adoption in small businesses using technology-organization –environment framework, *Information and Management*, 38(8).
- Kokemuller, N. (2019). *What is the definition of print media?* Retrieved from <https://bizfluent.com> on 13<sup>th</sup> August, 2019.
- Kroenke, David M. (2011), *Using MIS*, third edition, New Jersey: prentice hall.
- Laudon, K. C., and Laudon, J. P. (2013), *Essentials of Business Information Systems*, 11th ed., Prentice-Hall, Inc., Upper Saddle River, New Jersey.
- Manish Kumar, (2008). *Management information system*, M S Rahmaiah Institute of Technology Bangalore, Faculty member. [www.slideshare.net/himanshulove3/management-information-system-1176769](http://www.slideshare.net/himanshulove3/management-information-system-1176769).
- Martin J.Eppler and jeans Ming's, (2004),The concept of information overload: A review literature from organization science, Accounting, marketing, management information system and related discipline, *the information society*, 20(5).
- Mascolo, M. F., & Fischer, K. W. (2005). *Constructivist theories*. Cambridge encyclopedia of child development. Cambridge, England: Cambridge University Press.
- Melanie K. Jones, (2004), *Training, Job Satisfaction and Workplace Performance in Britain: Evidence from WERS 2004*, University of Wales Swansea.
- Mithas, S., Jones, J.L., & Mitchell, W. (2004). *Determinants of governance choice in business-to-business electronic markets: an empirical analysis*, working paper, Ross School of Business, University of Michigan: University Press.
- Mithas, S., Krishnan, M. S., & Fornell, C. (2015). Why do customer relationship management applications affect customer satisfaction? *Journal of Marketing* 69(4), 201-209.
- Mithas, S., Tafti, A.R., Bardan, I., & Goh, J.M. (2012). Information technology and firm profitability: mechanisms and empirical evidence. *MIS Quarterly*, 36, (1),205-22.
- Nigel Melville, Kenneth L, (2004). *Information Technology and organization performance: An integrative model of IT business value*. *MIS Quarterly*.
- Olumuyiwa, O. S., Adelaja, A.S., & Chukwuemeka, E.O. (2012). Effective planning and organisational productivity. (A Case Study of Sterling Bank Nigeria Plc). *Journal of Humanities and Social Science*, 5(5), 31-39.
- Perez-mendez, J.A., & Cabezas, A.M. (2015). *Relationship between management information systems and corporate performance*.
- Sarvdevaraj and Rajiv kohl, (2003). Performance Impact the information technology: Is actual usage the missing link, *Management Science*, 49(3).
- Sinan Aral, (2010), *Assessing Three-Way Complementarities: Performance Pay, Monitoring and Information Technology*, Sloan School of Management.

- Singh, D.A., & Hardik, V. (2012). *Impact of operational efficiency on overall profitability-a case study of gipcl*, Working Paper No. 136/2012, Amrita School of Business, Tamilnadu, p. 7.
- Stone, Robert W; Good, David J and Baker-Eveleth Lori (2007), the impact of information technology on individual and firm marketing performance, *Behaviour & Information Technology*, Vol.26, No.6, November-December, 465-482.
- Summit Sircar and Joe L. Turnbow (2000). A framework for assessing the relationship between information technology investment and firm performance, *Journal of Management information system*, vol. 16, issue 4.
- Technical Research (IJETR)*, 3(5), 192-197.
- Timothy, J., Coelli, D.S., Prasada R., Christopher, J. O'D., & George, E. B. (2015). *An introduction to efficiency and productivity analysis*. Navas: Springer Publication.
- Turban, Efraim and Volonino, Linda (2010). *Information Technology for Management, Transforming Organizations in the Digital Economy*, 7th edition, Asia, John Wiley & Sons Ltd.
- Vinod Kumar, (2006), *Performance Measurement System in Hotel Industry: An Empirical Study of Select Indian Companies*, HBTI.
- Weston, J.F., & Brigham, E.F. (2012). *Managerial Finance*. Homewood, Illinois: 123 Dryden Press.
- Yadav, P. & Marwa, S. (2015). The Concept of Productivity. *International Journal of Engineering and*