ELECTRONIC HEALTH RECORD AND PATIENT SATISFACTION IN PUBLIC HOSPITALS: MODERATING ROLE OF OPERATIONAL EFFICIENCY

GUMUS, Micah Adamu
Department of Management Studies
College of Business and Management Studies, Kaduna Polytechnic
adamumicah203@gmail.com

ANDAH, Ruth Angbazo
Department of Business Administration
Nasarawa State University, Keffi
ruthandah68@gmail.com

MUHAMMAD, Mallami Keffi
Department of Entrepreneurship Studies
Faculty of Administration
Nasarawa State University, Keffi
easylifefor4real98@gmail.com

ABSTRACT

Patient satisfaction is considered is the degree to which patients are satisfied with the quality of healthcare provided by their provider. Unfortunately, most hospitals in Nigeria are lagging in embracing contemporary healthcare technology. Most hospitals around the world are re-strategizing to deliver quality healthcare and remain competitive through the usage of electronic health records systems (EHR). This study examined the relationship between EHR and patient satisfaction under the moderating influence of operational efficiency. Data was collected from the patients of public hospitals in north–central states of Nigeria using questionnaire. Two public hospitals were chosen to represent each state with the use of a convenience sampling technique. 440 samples were drawn via Taro Yamani formula. Partial Least Square Structural Equation Modeling (PLS-SEM) using smart-PLS version 4.0 as an inferential statistical tool for data analysis was employed. The study found strong positive and statistically significant relationship exists between direct function and operational efficiency. The study also found that information infrastructure and operational efficiency have a negative significant relationship, while supportive function and operational efficiency have positive insignificant relationship. Operational efficiency has strong, positive, and significant moderating effect on the relationship between EHR systems and patient satisfaction. Based on the findings, the study recommends that governments at all levels should endeavor to install sustainable and improved EHR systems in public hospitals in north central Nigeria. Such is expected to provide improved efficient operation that enhance patients' satisfaction in public hospitals.

Keywords: Electronic health record, patient satisfaction, public hospital, operational efficiency

INTRODUCTION

A growing interest in applied research in various service settings has been observed in the field of service marketing. Health marketing is no exception since public and private health providers compete for patients. Patients are more curious and apprehensive about receiving healthcare services as a result of global rivalry in a developing sector. Growing health concerns and contemporary civilization's rising income levels have boosted healthcare demand and moved demographic patterns toward a healthier lifestyle (Li et al., 2015).

A rise in global service rivalry has generated a tense climate that affects the inhabited business, notably medical services. As a result of increased competition among hospitals, healthcare relationships have come to emphasize outstanding healthcare delivery. This presentation has persuaded patients to make the best decision when choosing a hospital (Bleustein et al., Jones, 2014). In order to achieve necessary satisfaction, most Nigerian elites go on medical vacations to Europe, Asia, and North and South America to seek better and quality healthcare. Patient satisfaction is now an essential and widely used metric for assessing healthcare quality. Clinical outcomes, patient retention, and medical malpractice lawsuits are all influenced by patient dissatisfaction. It has an impact on delivery of high-quality health care in a timely, efficient, and patient-centered manner (Prakash, 2010).

Hospitals that are committed to providing excellent healthcare, including patient satisfaction, implement programmes and initiatives, including use of a hospital information system (HIS) and automation of clinical tasks/activities, which have long been used by most Chinese hospitals to achieve their objectives (Bleustein et al., 2014). Measuring performance is an essential task in monitoring results of ongoing efforts to improve quality care and ensuring that hospitals strive towards excellence. Recently, satisfaction metrics have been established and are being used to assess and enhance hospital performance, treatment quality, and physician practice (Anna et al., 2013).

In order to guide improvement measures, it is vital to assess both individual and organizational aspects that influence patients' perceptions of care. For example, President Bush advocated for the universal use of electronic health record (EHR) within ten years in 2004. Moving from paper to EHRs, which allow hospitals to collect patient information, diagnose data, write prescriptions, administer drugs, and collect money, among other things. Hospitals could achieve this and many more if direct and supportive functions and information infrastructure activities of EHR are properly implemented with suitable efficient measure put in place.

However, most hospitals in Nigeria are lagging in embracing contemporary healthcare technology, while most hospitals around the world are re-strategizing to deliver quality healthcare and remain competitive through the usage of EHR. This explains why patient satisfaction in Nigeria is still low, as most in-patients interviewed in public hospitals in North Central Nigeria reported that EHR implementation was between 15 and 21 per cent in physicians' offices.

EHR use in any format in hospital settings was estimated to be between I8 and 23 percent, and the use of computerized physician order entry (CPOE) was around 15 percent, and EHR use in rural hospitals was less comprehensible than in urban hospitals (Alobo et al., 2020). Elikwu et al. (2020) states that public hospitals rely heavily on traditional paper-based record systems. However, the study found that adopting EHR reduces the risk of treatment errors, reduces patient waiting time, improves timely communication among practitioners, protects patient information from unauthorised personnel, and improves healthcare service delivery.

Most public hospitals in Nigeria have been slow to adopt global trend of information systems to move away from healthcare delivery marked by inefficiencies and poor management practices, as evidenced by the continued use of traditional paper record system in most public health facilities in Nigeria, forcing most Nigerian elites to seek alternative hospitals abroad, indicating a failure in Nigerian health facilities.

EHR has a considerable impact on patient satisfaction, according to studies conducted by (Ondieki, 2017; Uluc, & Ferman, 2016; Umar, 2015), EHR reduces patient waiting time, improves clinical documentation, increases patient privacy, and improves quality care. Waithera et al. (2017), Vesna (2014), and Zayyad and Toycan (2018) states that the relationship between EHR and patient satisfaction is insufficient to ensure quality of health care that will satisfy patients. There are still variations in the research findings on the association between EHR and patient satisfaction.

Baron and Kenny (1986) posit that when there is unexpectedly weak or inconsistent relation between a predictor and criterion variable, a moderator should be introduced; while Adedeji and Komolafe (2018) advised that a moderating variable should be included to improve the link between EHR and patient satisfaction. Consequently, this proposed to introduce operational efficiency of EHR to moderate the relationship between EHR and patient satisfaction. Thus, the main aim of this study is to determine the moderating role of operational efficiency on the relationship between EHR and patient satisfaction. Two public hospitals were selected from each state of North-central Nigeria to provide data.

LITERATURE REVIEW

Electronic Health Records
Scholars offer multiple definition of EHR. However, the International Standard Organization (ISO) provided an internationally acknowledged definition of HER. They defined it as "a store of information regarding the health of a subject of care, in computer *processable* form. This definition focuses solely on the structure of EHR systems. Hayrinen et al. (2008) argue that EHRs should be viewed as a collection of retrospective, contemporaneous, and prospective data with the primary goal of facilitating continuous, efficient, and high-quality healthcare delivery. Luo (2006) on the other hand, states that EHR encompasses the entire management of data, essential for patients' care, not just the electronic version of the paper-based record.

Patient demographics, progress notes, issues, prescriptions, vital signs, past medical history, vaccines, laboratory data, and radiological reports are all included in EHR. EHR also streamlines and automates workflow and create a complete record of clinical patient interaction, as well as support additional care-related activities such as evidence-based decision support, quality monitoring, and outcomes reporting directly or indirectly via an interface (Allen et al., 2007). In this study, the impact of EHR on patient satisfaction is measured from three perspectives proposed by Dickinson et al. (2004). These are direct function, supportive function, and information infrastructure of EHR.

Patient Satisfaction
Patient satisfaction has no commonly accepted definition. It can however, be defined as patients' subjective assessment of the care they received, taking into account care facts and patient characteristics. The condition of pleasure or enjoyment that patients feel when using a health service is referred to as patient satisfaction. Every healthcare provider's primary responsibility is to offer patient care (Li et al., 2012). Patient satisfaction is a well-known metric for assessing the effectiveness of hospital health services. Patient satisfaction is a key metric used to assess the quality of healthcare services provided (Ganasegeran et al., 2015).

Patients' opinions are now regarded a crucial role in treatment decisions and the delivery of healthcare services (Joosten et al., 2008). As a result, the evaluation of health service delivery from the perspective of patients has gotten more attention and has become a core attribute of any health system, as it acts as a valuable indicator of service provision performance, particularly in public sector institutions (Mohd & Chakravarty, 2014). As a result, adopting and implementing an effective EHR system in both public and private hospitals in Nigeria is a better way to ensure patient satisfaction.

Direct Function of EHR and Patient Satisfaction
Direct care function of every EHR system is concerned with performing functions connected to general clinical responsibilities (Dickinson et al., 2004). It also entails the collection, storage, management, retrieval, and communication of health data that directly relates to healthcare delivery. Direct care function of HER ensures the delivery of everyday healthcare to patients (Dickinson et al., 2004). Diagnosing, defining patient care goals, planning and carrying out interventions, examine and evaluating results are all examples of these functions (Bernstein et al., 2005).

Direct functions offer stand-alone reminders that warn patients about contraindications and incorrect pharmaceutical prescriptions (Vesely et al., 2006). Also, direct care capabilities of EHR provide task tracking to ensure timely provision of quality care, which reduces patient waiting time and improves patient satisfaction (Dickinson et al., 2004). Referral, patient current complaints and past medical history, physical examination, diagnosis, tests, procedures, treatment, medication, and discharge are some generally known direct care activities of EHR (Hayes & Barnett, 2008).

Boudreaux and O'Hea (2004) found that EHR tailored to provide daily healthcare to patients have considerable impact on patient satisfaction. Consequently, hypothesize that:
Ho$_1$: There is no significant relationship between direct EHR function and patients' satisfaction in public hospitals in north-central Nigeria.

Supportive Function and Patient Satisfaction
Supporting functions of EHR systems are those that are not directly related to the provision of healthcare but are necessary for the overall delivery of healthcare (Dickinson et al., 2004). Supported roles aim to improve quality of healthcare by providing inputs for medical research and public health promotion. It also helps with administrative and financial management in general (Dickinson et al., 2004).

Optimal patient bed assignments, provision of health standards and resources, administrative and financial code assignments, and provision of physicians' placement in institutions are all examples of supportive tasks (Grimson, 2001). Sammon et al. (2014) found that using EHR platform to pay hospital fees, identify patient beds and wards, receive guides, and subscribe to drugs has significant impact on patient satisfaction. Thus, we hypothesized that:
Ho$_2$: There is no significant relationship between supportive EHR function and patients' satisfaction in public hospitals in north-central Nigeria.

EHR Information Infrastructure and Patient Satisfaction
The role of EHR as information infrastructure is to provide technical foundation for successful implementation of direct care and supportive services. Hence, EHR infrastructure becomes the driving force behind the smooth operation of both direct and support services. It involves security, which entails limiting data access and privacy (Coeira & Clarke, 2018). It also entails interoperability (the exchange of clinical and administrative data using standard-based solutions), and data sharing between management and other departments (Dickinson et al., 2004).

Although results from studies on EHR as an information infrastructure have been mixed, Wilcke (2018), Woodside (2017) and Gillies and Howard (2015) contend that managing patient data with utmost confidentiality within the health facility using an EHR solution improves patient satisfaction. Afolabi (2019) and Chinyemba and Ngulube (2015) found that information infrastructure has no substantial impact on patient satisfaction. In view of the foregoing, the following hypothesis was formulated:

Ho₃: There is no significant relationship between EHR information infrastructure and patients' satisfaction in public hospitals in north–central Nigeria.

EHR and Patient Satisfaction: Moderating Role of Operational Efficiency
Operational efficiency refers to an organization's capacity to minimize waste in terms of time, effort, and materials while delivering high-quality service. Apruebo (2010) argue that operational efficiency occurs when suitable and right people, procedures, and technology are coupled to offer services to clients by arranging fundamental activities in response to market pressures. Operational efficiency is measured in terms of flexibility, consistency, productivity, and cycle time and focuses on improving (internal and external) customer satisfaction.

Business process flexibility is described as ability to adapt to changing business situations in order to meet current and emerging consumer needs. Healthcare Management Systems (HMS), Hospital Information Systems (HIS), Electronic Medical Records (EMR), and Electronic Health Records (EHR) are examples of computer-integrated systems that allow hospitals to adopt a more flexible way of providing quality service that improve customer responsiveness (Barlan-Espino, 2017). One of the most basic requirements for an automated system to fulfill its goal is for it to be efficient. Woodside (2017) reports that the effectiveness of an organization's technology improves consumers' satisfaction with banking services.

Barlan-Espino (2017) looked at restaurant operational efficiency and customer satisfaction as a foundation for improving business operations. In view of evidence linking organizational efficiency and patient satisfaction, this study investigates the moderating effect of organizational efficiency on the relationship between EHR and patient satisfaction. Consequent on the above, the following hypothesis was formulated:

Ho₄: Operational efficiency does not significantly moderate the relationship between EHR (direct function, supportive function and information infrastructure) and patient satisfaction in public hospitals in north–central Nigeria.

METHODOLOGY

This research fundamentally covered relationship between EHR system and patient satisfaction in Nigeria using, operational efficiency as moderating variable. The specific variables that this work focused on are direct function, supportive function, and information infrastructure of HER

systems. The study employed a survey research design. The population of the study comprised patients in the six north–central states of Nigeria from March–August 2022. Two public hospitals were chosen to represent each state with the use of a convenience sampling technique. In determining the sample size, Taro Yamani formula was used. The study arrived at a sample size of 400. However, to minimize error in sampling and to take care of none response issue, 10% was added to the sample size, therefore, 440 was the total number of questionnaire administered. This decision is founded in the argument of Aldrich and Settle (1995) that a higher sample size increases accuracy of results.

The study collected primary data using a five-point Likert scaling structured questionnaire. The data was analyzed using the structural equation modeling and partial least square (SEM-PLS) techniques in order to achieve all set objectives. The Statistical Package for the Social Science (SPSS) version 25.0 aided the data analyses. The data gathered from the survey was screened, missing values and outliers were checked and then data was coded properly in the SPSS software. No missing values or outlier cases were discovered. The SEM-PLS was for structural equation modeling techniques. It was used to check the reliability and validity of the instrument used as well as analyzing the relationship between independent and the dependent variables via bootstrapping techniques. The SEM-PLS model is as follows.
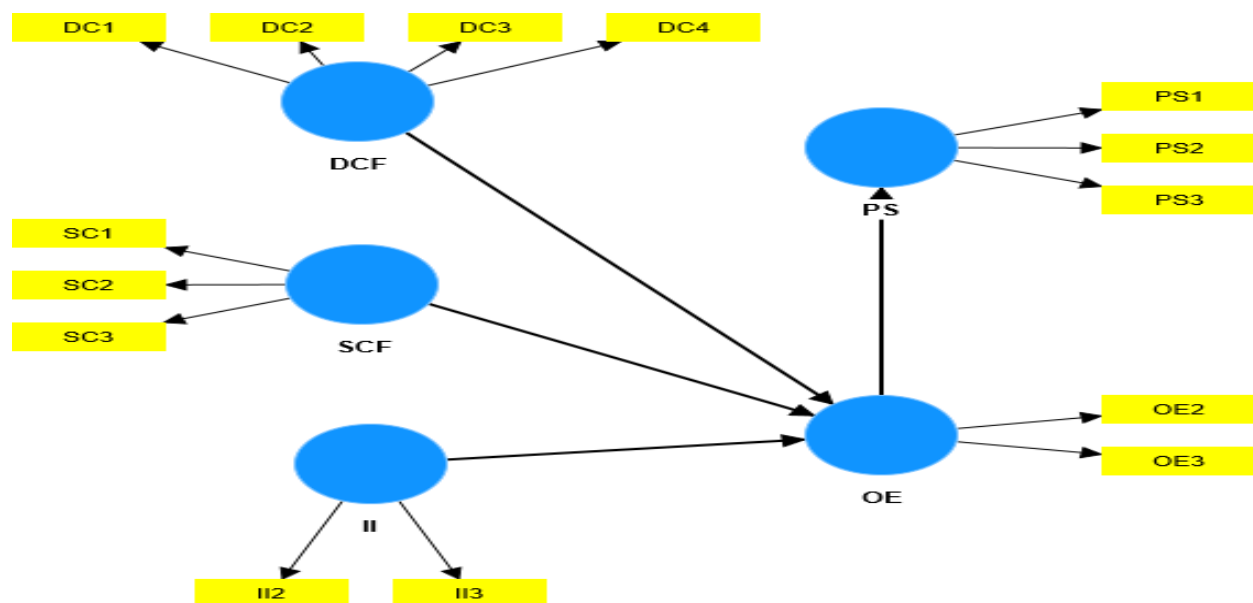

Fig. 1: Model of relationship between HER and patients' satisfaction
Source: SPSS output of data analyses (2022).

The model above depicted the relationship between EHR and patient satisfaction. Fig. 1 also depicted how operational efficiency moderates the relationship between HER and patient satisfaction. HER systems was proxied by direct function, supportive function and HER information infrastructure.
The specific variables in the model are:
EHR= Electronic Health Records
DCF= Direct Function
SCF= Supportive Function
II= Information Infrastructure

OE= Operational Efficiency
PS= Patient Satisfaction

RESULT AND DISCUSSION OF FINDINGS

In the measurement model of all the variables' scale, the Cronbach's alpha is above 0.80, and the factor loadings of the individual assessment items has a significance value; the CR and AVE are all above 0.7 and 0.5. Therefore, the result of this analysis shows that both the Cronbach's alpha and the convergent validity of all the variables (direct function, supportive function, information infrastructure, operational efficiency and patient satisfaction) are within the recognized value. The result is shown in Table 1.

Table 1: Reliable Test of the Variables

	Measurement	Cronbach's alpha	Composite Reliability	AVE
Direct Function	Ordinal	0.860	0.875	0.705
Information Infrastructure	Ordinal	0.834	0.857	0.856
Operational Efficiency	Ordinal	0.808	0.810	0.839
Patient Satisfaction	Ordinal	0.770	0.798	0.685
Supportive Function	Ordinal	0.833	0.839	0.749

Source: SPSS output of data analyses (2022).

Based on the present study, items loaded effectively on their individual constructs and are all above the suggested value of 0.5 (Hair et al., 2010). Only 4 items were deleted for low loading. As indicated in Table 2 all the indicators loaded on their respective constructs.

Table 2: Factor Loadings and Cross Loadings

	DCF	II	OE	PS	SCF
DC1	**0.869**	-0.546	0.676	0.723	0.531
DC2	**0.768**	-0.450	0.526	0.629	0.730
DC3	**0.898**	-0.459	0.729	0.685	0.608
DC4	**0.818**	-0.489	0.609	0.701	0.722
II2	-0.524	**0.910**	-0.558	-0.582	-0.542
II3	-0.544	**0.940**	-0.681	-0.634	-0.466
OE2	0.663	-0.655	**0.911**	0.730	0.503
OE3	0.733	-0.584	**0.921**	0.794	0.631
PS1	0.691	-0.552	0.684	**0.837**	0.528
PS2	0.552	-0.492	0.563	**0.743**	0.759
PS3	0.759	-0.588	0.797	**0.896**	0.590
SC1	0.726	-0.514	0.562	**0.674**	0.883
SC2	0.651	-0.467	0.560	0.676	**0.890**
SC3	0.586	-0.416	0.486	0.560	**0.823**

Source: SPSS output of data analyses (2022).

In an attempt to examine the main relationship effects within the constructs, SEM PLS analysis was conducted. The individual role of each independent variable was represented by the standardized beta values within the PLS structural model (Chin, 1998). All the relationships are

represented by standardized beta values. In testing the structural model relationships, the significance level was set at p<.05 and p<.01 (Hair et al., 2011).

Table 3: Results for Exogenous Construct, and Patient Satisfaction

Path Coefficient	Beta β	Standard Error	T statistics	P values
DCF -> OE	0.549	0.049	11.180	0.000
II -> OE	-0.350	0.037	9.499	0.000
OE -> PS	0.833	0.014	59.566	0.000
SCF -> OE	0.016	0.044	0.362	0.718

Source: SPSS output of data analyses (2022).

The result reveals that path coefficient from direct function to operational efficiency (DCF ->OE) is statistically and positively significant with a beta (β) value and strong t-value of more than 1.96 (β = 0.549, t = 11.180, p = 0.000). The finding is line with the work of Dickinson, Fischetti, and Heard (2004) and Dickinson et al. (2004) but contradict the work of Vesely et al. (2006).

The path coefficient from information infrastructure to operational efficiency (II ->OE) depicted negative and statistically significant relationship with a beta (β) value and strong t-value of more than 1.96 (β = -0.350, t = 9.499, p = 0.000).This work is in line with the work of Coeira and Clarke (2018) but disagrees with the work of Woodside (2017).

Also, the result of the path coefficient from supportive function to operational efficiency (SCF -> OE) however, depicted positive but in significant relationship with a beta (β) value and strong t-value of more than 1.96 (β = 0.016, t = 0.362, p = 0.718). This finding is in line with the report of Sammon et al. (2014) and that of Grimson (2001).

Finally, the path coefficient from operational efficiency to patients' satisfaction (OE -> PS) revealed positive and statistically significant result with a beta (β) value and strong t-value of more than 1.96 (β = 0.833, t = 59.566, p = 0.000). The result agrees with the findings of Apruebo (2010), Barlan-Espino (2017) and Woodside (2017) which also showed positive and statistically significant relationship between operational efficiency and patients' satisfaction. However, the work contradicts the findings of Barlan-Espino (2017).

CONCLUSION AND RECOMMENDATIONS

The finding of this study reveals a positive significant relationship between HER systems (direct function, supportive function and information infrastructure) and patients' satisfaction. The results also showed that operational efficiency moderates the relationship between EHR and patient satisfaction. However, the nature of the relationship varies, three variables are significant while one is insignificant. Specifically, the direct relationship between direct function and operational efficiency is strongly positive and significant, information infrastructure and operational efficiency has negative and significant relationship, supportive function and operational efficiency also have positive but insignificant relationship. Finally, operational efficiency has strong, positive and significant moderating effect in the relationship between HER systems and patient satisfaction.

Therefore, this work concludes that increase in direct function leads to a drastic increase in operational efficiency, increase in information infrastructure leads to drastic decrease in

operational efficiency and increase in supportive function leads to little increase in operational efficiency. Finally, an increase in operational efficiency leads to a drastic increase in patient satisfaction. Impliedly, the direct function of EHR increased tremendously the operational efficiency in hospitals in north-central Nigeria. The supportive function of EHR increases operational efficiency in hospitals of north central states. However, the information infrastructure of EHR did not increase the operational efficiency in hospitals in north-central Nigeria. Finally, the operational efficiency generally increases the patient satisfaction in hospitals in north-central Nigeria.

Based on the above findings, therefore, government of all levels should endeavor to install a sustainable and improved electronic health records system of public hospitals in north central states which is capable of providing improved and efficient operation that can enhance the satisfaction of their patients. This is because customers are expected to be placed at the center of the strategy and operation of these public hospitals for them to be able to satisfy their need using the electronic health records system. Specifically, the study recommends that:

(i)   Attempt should be made to ensure further improvement in terms of the direct function of the electronic health records system due to the fact that it can tremendously improve the operational capacity of the staff so as to enhance patient satisfaction.

(ii)   Measures have to be taken in order install qualitative information infrastructure that can effectively and efficiently improve the operational efficiency that can good enough to facilitate a sustainable improvement in patient satisfaction.

(iii)   Effort has to be intensified (e.g through training) to provide efficient supportive function that is capable of enhancing the operational capabilities of those who are usually handling the information infrastructure of electronic health records system for the purpose of patient satisfaction.

(iv)   Provision has to be made concerning how to improve operational efficiency of all the component of electronic health records system so as to ensure that they work in synergy effectively and efficiently for maximum satisfaction of their patients.

REFERENCES

Adedeji, P. &Komolafe, A. (2018) Factors influencing the use of electronic health records among nurses in a teaching hospital in Nigeria: *Journal of Health Informatics in Developing Countries*; *12*(2), 1-20.

Allen, M. K., Ceolin, R., Ouellette, S., Plante, J., & Vaillancourt, C. (2007). Educating health workers*: A statistical portrait 2000 to 2004.* Retrieved March 29, 2008, from http://www.statcan.ca/english/research/81-595-MIE/81-595-MIE2007049

Alobo, I. J., Soyannwo, T., Ukponwan G., Akogu, S., Akpa, A. M. &Ayankola, K (2020). Implementing electronic health system in Nigeria: perspective assessment in a specialist hospital: *African Health Sciences, 20*(2), 948-954.

Anna, J., Kone, P., & Walter, P. W. (2013). Organizational performance impacting patient satisfaction in Ontario hospitals: A multilevel analysis: *BMC Research Notes*, 6:509

Apruebo, X. (2010). Operational efficiency and customer satisfaction in selected fast food industry. *Unpublished Master's Thesis*, LP University, Batangas.

Barlan-Espino, A. G. (2017). Operational efficiency and customer satisfaction of restaurants: Basis for business operation enhancement: *Asia Pacific Journal of Multidisciplinary Research*, *5*(1), 122-132.

Elikwu, I. M., Igbokwe, A. C., &Emokhare, G. (2020). Effect of electronic health information system on medical records management in public healthcare institutions. *Unizik Journal of Business, 3*(1), 23-56.

Ganasegeran, K., Perianayagam, W., Abdul, M. R., Jadoo, A., Ahmed, S., & Al-Dubai, S. A. R. (2015). Patient satisfaction in Malaysia's busiest outpatient medical care. *Science World Journal*, *7*(1), 47-54.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152.

Joosten, E. A., DeFuentes-Merillas, L., DeWeert, G., SenskyK, T., Van Der Staak, C., & De Jong, C.A. (2008). Systematic review of the arts of shared decision-making on patient satisfaction, treatment adherence and health status. *Psychother of Psychosom*, *77*(2), 219-226.

Li, M., Lowrie, D. B., Huang, C. Y., Lu, X. C., Zhu, Y. C., Wu, X. H., Shayiti, M., Tan, Q. Z., Yang, H.-L., & Chen, S. Y (2015). Evaluating patients' perception of service quality at hospitals in nine Chinese cities by use of the ServQual scale. *Asian Pacific Journal Tropical Biomedical*, *5*(1), 497–504.

Li, Z., Hou, J., Lu, L., Tang, S. & Ma, J. (2011). On residents' satisfaction with community health services after healthcare system reform in Shanghai, China, *BMC Public Health Journal*, *2*(2), 421-481.

Mohd, K. A., & Chakravarty, A. (2014). Patient satisfaction with services of the outpatient department. *Medical Journal of Armed Forces of India*, *70*(1), 237–242.

Mulla, M., Isaac, O., Alrajawy, I., & Bhaumik, A. (2019). Impact of operational efficiency and customer satisfaction on banking performance: Empirical examination on UAE Islamic banking: *International Journal of Recent Technology and Engineering*, *8*(10), 2277-3878.

Naumann, S., & Miles, J. (2001). Managing waiting patients' perceptions: The role of process control. *Journal of Management in Medicine, 15*(5), 376–386.

Ondieki, F. (2017) Effects of health records management on service delivery: A case study of Kisii teaching and referral hospital. *Journal of Hospital & Medical Management*. Vol. *3*(16), 1-5

Prakash, B (2010). Patient satisfaction. *Journal of Cutaneous and Aesthetic Surgery*, *3*(3), 45-68.

Uluc, N. C., & Ferman, M. (2016). A comparative analysis of user insights for e-health development challenges in Turkey, Kingdom of Saudi Arabia, Egypt and United Arab Emirates. *Journal of Management and Logistics, 3*(2), 176–18

Umar, F. A. (2015). Health information systems in a developing country: Case study of e-health system in a Nigerian hospital. *European Scientific Journal, 3*, 173-182.

Vesna, P. P. (2014). Medical data in the work of the court and privacy pacietov in practice Inc. Milena, M., Ed., University, Psychiatric Clinic, Ljubljana, 70-77.

Waithera, L., Muhia, J., & Songole, R. (2017). Impact of electronic medical records on healthcare delivery in Kisii teaching and referral hospital: *Medical & Clinical Reviews,* *3*(4), 1-7.

Zayyad, M. A., & Toycan, M. (2018). Factors affecting sustainable adoption of e-health technology in developing countries: An exploratory survey of Nigerian hospitals from the perspective of healthcare professionals. *Journal of Medical Science and Information, 4*(2), 112-213.