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EASE, AVAILABILITY, ACCESSIBILITY, RELIABILITY AND USER FRIENDLINESS OF INTERNET TO ONLINE BANKING CUSTOMERS

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ABSTRACT

The objective of the present research was to minimize the gap between customer and service provider by inquiring about infrastructural challenges from customer across gender and availability of internet access. This empirical research study was carried out in Karachi, Pakistan. Survey as embraced from literature and 5 point likert scale was chosen as dimension scale. Information was gathered by using Google kind which was sent out by e-mails to the participants. 300 legitimate questionnaire samples were gathered and taken into SPSS and MS succeed for the evaluation. Information evaluation included straightforward frequency distribution, mean+SD and mode of different variables. Data existed in the form of tables. Results indicated that male respondents who had not internet access gave the neutral response (3=neutral) across all the variables at the other hand, male and female respondents who had internet access agreed (111(37%)), (42(14%)) for easy accessibility of website respectively; easy services (113(37.67%)), (39(13%)); user-friendly (104(34.67%)), (40(13.33%)); reasonable system (120(40%)), (36(12%)) and reliable (124(41.33%)), (36(12%)) respectively. This research study can be conducted at the bigger sample dimension (with diverse demographics in terms of geographical locations) for more accurate outcomes and final thought.

Keywords: Online Banking; Internet Banking; Infrastructure; Challenges; Gender.

I. INTRODUCTION

In the current time, the growth in technological advances has affected business in numerous methods, most especially in terms of monitoring and control; advertising and marketing and study; operations and decision making [1]. The banking industry worldwide provides Internet banking to offer customers easy access to banking services [2]. Opening an online bank account is valuable for many reasons [3]. Bill Gates announced "banking is essential, banks are not". This quotation means, the traditional branch banking is going to vanish in order to be surrogated by Electronic Banking (E-banking) which continues to attract new users [4]. Monetary system plays an important function in the financial growth of the nation [5]. The conventional setting of providing products and services by banks to the customers' is through a single circulation channel which is physical financial institution branches [6]. In order to cope with the quick changes in the business situation, financial institutions began to depend on distribution networks as an alternative approach for differentiation and gaining more competitive advantage [6]. Internet banking is the equivalent of accessing a bank's services via the Internet. Internet banking does not exist single-handedly but as a part of electronic banking [7]. Banks boost technological advances investment costs strongly to deal with profits, price and competitiveness worries [1]. In a globe, which is coming to be significantly open as a result of the Net and the Net (WWW), Internet banking has been picking up speed around the globe [8].

Financial solutions industry is developing because of the introduction of internet, fast technical advancements, deregulation, globalization in addition to the impact of altering competitive and regulatory pressures [6]. Application of internet in banking system has actually updated the banks [5]. In banking sector, InfoTech is the significant aspect for future advancement of monetary solutions market. It is based upon sharing of details,



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which generally depends on information and communication innovation for obtaining, evaluating and supplying files to all relevant users [9]. E- Banking is knowledge based and mostly scientific in using the electronic tools of the computer resolution through the considerable use of IT without direct resources to the bank by the clients [5]. E-banking refers to economic tasks that are performed utilizing digital technology [10]. E-banking means any user with a desktop computer and a web browser can get connected to his banks web site to execute any of the digital banking features. In E- banking system the bank has a central data source that is web-enabled [6]. The intro of e-banking solutions is taken into consideration a development of the financial sector, bringing different advantages to both consumers and banks [11]. Among the advantages that financial institutions experience when using e- financial is increased customer satisfaction [1]. It provides enormous benefits to consumers in terms of the convenience and price of deals [12]. Online banking has provision networks that changes and replicated various activities currently carrying out by the financial institution [13]. E-banking add in advertising and marketing, promotion and market research of the products [8]. It has highly impacted the strategic organization considerations for financial institutions by considerably lowering costs of distribution and deals [1]. Hence e-banking now plays a crucial role to accomplish the person in addition to corporate monetary activities implementation [13]. Because of the introduction of information innovation there is a change in the financial sector which has paved means for the introduction of retail digital repayment system and has actually advanced in the current years in different countries [5]. It has to be noted, nonetheless, that while e-banking supplies numerous benefits to clients and financial institutions, it likewise worsens typical financial dangers [1]. In this age of modern technology, the implementation of e-banking solutions plays a substantial part in aiding banks to remain competitive and adapt to the current modifications of the market [11]. The financial services and products have appeared online, which has hence come to be a crucial distribution channel for a number of financial institutions [1]. The success of Internet banking relies on the maturity, honesty and dedication of individuals. Electronic banking system has actually shown to be a lot more functional than a male [8].

E-Banking is not something brand-new to Pakistan [14], [15]. Infotech (IT) has been playing a spectacular role in the handling, estimation and access of files in banking industry. Using latest technological advances leads to the boosted performance, expense effectiveness and increased performance [16][17]-[20]. Establishments are required to innovate the banking processes as well as techniques on the development of new technological advances [15][21][22]-[25]. The first ever ATM was installed in 1987 in Pakistan. Till late 1990s, the installment and growth rate of Automated Teller Machine were remained low and slow-moving [13]. The progress of monetary deals by technological advances has been driven by variations in spreading networks as shown by ATM MACHINE (automated cashier machine), Mobile Phone-banking, Pc-banking, Telebanking and most just recently internet banking [13]. Queue formation is common event in various routine activities of life and it excessive wait in queue may cause stress, anger and dissatisfaction [26]-[28]. The use of electronic banking has actually proliferated in the last decade, along with the Internet [29]. In 2017, 64% of the complete deals were carried out by ATM, 0.40% were conducted via mobile financial, and 4% of them were performed using internet in Pakistan [13]. One among customers experienced issue with Internet and electronic banking is personal privacy; that makes the protection in purchases necessary [29]. These findings show that what the respondents have most to complain about concerning Internet banking is the security [29].

Studies has shown that younger sections are more willing to take risks than the older segments Pertaining to internet banking, the older sections are a lot more careful than usual, [29]. The solution encounters as easy to use, fast, easily accessible etc., but although the participants discovered the usage favorable, lots of located the safety unfavorable [29]. Aggression is caused by anger and rashness during the various operations [30]-[32]. Kalhoro et al. (2019a) and Kalhoro et al. (2019b) discussed the role of IT in the customer satisfaction of banking industry of Pakistan [33], [34]. Also e-banking activities based on the internet or digital exclusive networks own by the financial institution, therefore communication channel, circulation network and purchases channel need to be protected [13]. Among one of the most important lawful obstacles for the e-banking system seems to be whether the general guidelines of contracts provide sufficient assurances for the credibility and necessity of electronic contracts [10].



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II. LITERATURE REVIEW

There has actually been a lot of study is performed on the online banking in terms of challenges encountered by company. One of the descriptive researches was carried out by Beatrice (2017) in Kenya, in which survey was utilized for data collection. Study explored the obstacles dealt with by the internet banking. Obstacles were indicated by the research were i.e. inadequate net speed, consumer recognition, absence of notifies of electronic banking, less infiltration in the marketplace and the reception of electronic banking services. Study likewise highlighted the transaction protection issues in the financial institutions. It was concluded that the level of understanding among the consumer concerning internet banking is quite less; that's why it was advised to train the financial institutions' employees to ensure that they could hand down the gotten expertise of online banking towards the consumers [35]. Study was conducted by Rahman et al. (2017) with the goal to examine the present circumstance, prospects and trouble of electronic banking (Dutch-Bangla Bank Limited) in Bangladesh. Information was collected by conducting meetings. There were 11 inquiries in the interview and 100 interviews were performed from the registered clients of the financial institution. It was ended that customers of the bank had inadequate knowledge regarding the e-banking services [9].

Online banking is getting popularity due to location independence i.e. available all the time [36]. Online banking and e-commerce have begun to shape our world today. People can now make purchases and pay for goods and services online [37]. Deep literature evaluation was carried out in Iran by Alikhani and Zare (2018) in which the issues and difficulties of online banking guidelines are highlighted. In the study, legal challenges are examined for the development of electronic banking systems to make sure that service of those problems can be suggested. It was ended that, the regulations for the customer security were insufficient in terms of online banking and on the exact same time, there was no clear judicial treatment thereof [10]. Phuong Nam (2014) conducted research study on the execution procedure of electronic banking services in Vietnam. There were two purposes in the research study: 1) to uncover the factors and stimulations for the implementation of online banking services; 2) to explore the application process and highlight the obstacles faced during the process. It was ended that the expansion of market and the satisfaction of clients were the major inspirations behind the application of the online banking; and the significant obstacle was the lack of expertise (regarding the web banking) among client and their aversion [11].

Farooqui and Rajani (2017) carried out as research with the objective of taking a look at development of Indian financial institutions in the context of internet banking. On the exact same time, challenges dealt with by Indian banks were also highlighted. The electronic banking users enhance from 193204330 (in 2013) to 462124989 (in 2016); which indicated that there was successful execution of electronic banking in Indian banks. Highlighted elements were; i.e. protection threat, depend on factor, customer understanding, privacy danger, enhancing the public support, accessibility of personnel services, competition, implementation of global innovation etc. [5]. Hussain et al. (2017) suggested net access in banking industry as a reason for customer reluctance to access their savings account online in Pakistan. Due to the fact that unavailability of cyber safety and security, clients' count on its substantially affected by the use of online banking. In addition, writers highlighted the problems of online banking i.e. technical problems, ATM web link network concerns, safety and security issues, non-technical employees [13]. Al-Weshah (2013) ended that internet banking offers lots of offered chances to financial institution improvement such as simple and quick financial solutions, economical interaction tools with customers, new banking services and products to financial institution consumers, and reliable control about financial system errors. On the other hand, electronic banking encounters several possible obstacles in bank renovation such as absence of clients' trust and security, lack of staff members' participation in banking industry enhancement, and absence of appropriate workers' skills and capacities in web applications as a result of lack of efficient training for bank employees [38].

Ashoka and Vinay (2016) carried out survey in Mysore District disclose that the equivalent percentage in respect of rural client is just 60 percent with the total example size of 179 the percent for E- Financial in the accumulated group counts for 80 percentage the main factor for non-patronization of E-Banking is illiteracy and worry of shedding cash when E-Banking is practiced [39]. The association in between demographic features and the complete satisfaction of customers for electronic banking was examined by Kumbhar (2011); furthermore, organization in between service quality and consumer's complete satisfaction was also explored



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he additionally investigate the connection between solution high quality and customers' complete satisfaction and complete satisfaction in internet banking solution supplied by the public industry financial institution and economic sector banks. The research study learnt that total complete satisfaction of employees, business owners and professionals are higher in electronic banking solution. Likewise it was found that there is substantial distinction in the clients' perception in electronic banking services given by the public and economic sector financial institutions [40]. According to Ravi and Paul (2001), in every service, the way the business is conducted is being changed by ecommerce. Obsolete organization designs are changed by the brand-new ones. On the same time, organizations are pondering over the modification of techniques of customer relationship management and business process design.

Financial institutions are not jeopardizing on this change. In the present research, sights of lenders are examined on the provision of banking solutions via site. Outcomes of the research suggested that internet banking in its early stage age and its supplied by much less variety of banks; complete electronic banking advantages are remaining to be understood by variety of financial institutions for its application [41]. Malhotra and Singh (2009), briefly suggested today condition of electronic banking in India. The challenge lies in what is the most effective way to train customers [42]. This research study was carried out to look for the connection between internet banking adoption and efficiency of bank and the risk. It has been suggested by the research study that, electronic banking has the significant and unfavorable organization with the threat; from which it becomes clear that risk account of banks is not increased by the internet banking adoption in banks [43].

III. RESEARCH GAP

With the introduction of technical enhancement, it was needed for the financial institutions therefore the customer to move in the direction of the electronic banking [44]. E-Banking is sensation whereby the products and services are automatically delivered to consumers with digital platform [44]. Recently, due the development in the field of infotech and the Net benefits, financial institutions have actually been seeking for the arrangement of variety of services for their customers. Unavoidable obstacles are being available in the means of development and development of e-banking [10]. Apart from the benefits of, online banking; there are lots of difficulties in the sector of online banking; which are significant for both i.e. company and the end customer that runs efficiently from the banks. It is required for them to be aware of those challenges so that they can be conquered successfully [45]. In the here and now circumstance, it is required to recognize the concerns of banking through internet on the side of clients to identify the challenges which are been dealt with by provider.

In this way, hesitation relating to the utilization of online banking amongst completion customer as it may be minimized for the good of both clients and company. There has actually been a great deal of looks into, who focus on the challenges encountered by the service providers i.e. banks however an extremely few of them have concentrated on the obstacles with end user (customer) viewpoint. Beatrice in 2017 performed a research study on the difficulties dealt with by the electronic banking in which the data was gathered from branch supervisors, branch supervisors, client service policemen, cashiers and credit police officers. Given that, the data was collected from the officials of financial institutions and in that situation, customers were not considered. In the gravity of pointed out point, the author has left the suggestions for future that this job can be more expanded by performing the same research study in the customers 'viewpoint [35]. This study is the extension of Beatrice's function.

IV. RESEARCH OBJECTIVE

An information systems (IS) success model has been validated in high-income countries, but research in low-income countries is still lacking [46]. The aim of the present research was to bridge the gap between customer and banks in terms of infrastructural challenges faced by customers. In this regard, two objectives were initiated to pursue the aim i.e.

- 1) To highlight the infrastructural challenges faced by the banks on the way to online banking and
- 2) To analyze the infrastructural challenges of internet banking as per gender and availability of internet access from customers' perspective.



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V. METHODOLOGY

Research method is the subject of methods which have actually been used in the conducted research. In this area, research strategy, research design, population, specimen dimension, sampling method, research instrument and dimension range are talked about briefly.

5.1 Research Philosophy

Three major ideologies of science are there i.e. empiricism, clinical realism and social constructionism [47]. This study based upon the realism philosophy. It is pointed out that McMurray conducted the study in 2004 about the realism ideology, truth and ideas that exist in the atmosphere are focused [48]. Yin (1989) as mentioned by [49] showed that realism standard intends to generalize to academic recommendations and not to populaces. There are two branches of realism viewpoint i.e. critical and direct realism. Sekaran and Bougie conducted the study in 2013 which is cited by [48] clarified direct realism is what an individual really feels, sees, hears, etc. On the other hand, in crucial realism, the people discuss their experience in specific situations.

5.2 Research Approach

Classification shows 3 sorts of research approaches i.e. qualitative, quantitative and the combined approach of both. Quantitative research describes the quantification and evaluation of variables for getting outcomes [50]. By the assistance of various statistical strategies, the records (numerical data) is evaluated in order to respond to the interrogations like, just how much, who, what, the number of, where and when [35]. According to a study conducted by Aliaga and Gunderson in 2002, which is cited by [50] discusses the quantitative research methods as explaining a problem by via collection of records in numbers and analyzing it with the help of mathematical techniques. Statistical approach to research design constitutes the quantitative research method. It starts with the statement of the research trouble and includes the theory development, testimonial of literature and quantitative analysis of records [51]. This research method emerged around the duration of 1250 A.D.; it was used by the researchers for the quantification of details. Considering that, in this research author has accumulated the data and used various statistical methods to examine it; hence this research utilizes the quantitative study viewpoint.

5.3 Research Design

Design of research is framework, research plan and analysis are assembled in order to study the research issues [35]. According to Cooper & Schindler (2006) as mentioned by [35]. The detailed research is utilized for addressing the question like what, where and just how of an occurrence. Survey research is called the typical sort of detailed research; in survey research, questionings are asked from the specimen (standing for the group (s)) of individuals to be examined [52]. Essential details regarding the population are provided by the use descriptive research design. Detailed research assistance research to define the important things which are common in the populace (Swatzell and Jennings 2007).

5.4 Research Instrument

Survey was made use of the research tool in the research. It was consisted of five sections. First area was based upon 6 issues regarding the info of respondent i.e. age, gender, bank name and education level, Have you done any computer system programs? And do you have access to internet? 2nd section was contained 4 questions relating to the leads of electronic banking as embraced from [9]. 3rd section was based on 9 variables regarding infrastructural concerns which were adopted from [35].

5.5 Measurement Scale

Since, the thought of individuals relating to anything are an abstract noun; which cannot be determined by physical numbers; hence, for measurement of viewpoints and attitudes, likert ranges are developed [54]. These ranges are been composed on the different choices in a repaired style. In today research, 5-point likert scale ("Highly Differ = 1" to "Strongly Agree = 5") was utilized in order to gauge the various variables.

5.6 Data Collection

In research language, population is the total sum of items from the details specimen can be taken [55]. Research populace in this research is the number of people who have accounts in any one of the bank in Karachi, Sindh, Pakistan. The customers of a minimum of five banks (operating in Karachi) were approached for the records



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collection (by Google kind) and details were accumulated from 300 respondents. Convenient tasting method was made use of for the details collection.

5.7 Data Analysis

Details were taken into MS stand out and statistical package for social sciences for analysis. Data analysis included simple frequency distribution, means, standard deviations and modes of different variables. The details existed in the form of tables. Analysis of the each of the issue was carried out independently according to the two demographic characteristics i.e. sex and age.

VI. RESULTS

Result is based upon the in-depth evaluation of various variables of infrastructural challenges of online banking across gender and internet access to the participants. The evaluation includes the in-depth frequency distribution in addition to mean and standard deviations of the variables. The results exist in the tabular style.

6.1 Bank's website is very easily accessible

The analysis of the present variable was based on three central tendencies i.e. mean, standard deviation and mode. Table 1 presents the analysis of Q1 across the participants' responses on the question i.e. do you have access to internet? The response of male respondents who had and had not access to internet was calculated to be 3.60+0.86, 4 and 3.00+0.91, 4 respectively. Moreover, there were no female respondents who had not internet access; the response of female respondents who had access to internet was calculated to be 4.00+0.86, 4 as can be seen in Table 1.

Table 1. Responses of the participants about 'Bank's website is very easily accessible'

	Do you have	Ba	nk's websi	te is very ea	isily accessib	le		Mean+SD,
Gender	access to internet?	1 n(%)	2 n(%)	3 n(%)	4 n(%)	5 n(%)	Total	Mode
Male	Voc	8	16	79	111	36	250	3.60+0.86,
Male	Yes	(2.67%)	(5.33%)	(26.33%)	(37%)	(12%)	(83.33%)	4
Male	No	-	-	8	-	-	8	3.00+0.91,
Male				(2.67%)			(2.67%)	4
Female	Yes	-			42	-	42	4.00+0.86,
remaie			-	_	(14%)		(14%)	4
Female	No	-	-	-	-	-	-	
Total		8	16	87	153	36	300	
		(2.67%)	(5.33%)	(29%)	(51%)	(12%)	(100%)	

6.2 Accessing internet banking Services is very easy

The analysis of the present variable was based on three central tendencies i.e. mean, standard deviation and mode. Table 2 presents the analysis of Q2 across the participants' responses on the question i.e. do you have access to internet? The response of male respondents who had and had not access to internet was calculated to be 3.66+1.12, 4 and 3.00+1.01, 4 respectively. Moreover, there were no female respondents who had not internet access; the response of female respondents who had access to internet was calculated to be 2.86+1.13, 4 as can be seen in Table 2.

Table 2. Responses of the participants about 'Accessing internet banking Service is very easy'

Gender	Do you	Acces	sing inter	net banking	Service is ve	ery easy		Mean+SD,
	have access to internet?	1 n(%)	2 n(%)	3 n(%)	4 n(%)	5 n(%)	Total	Mode
Male	Yes	6 (2%)	20 (6.67%)	73 (24.33%)	113 (37.67%)	38 (12.67%)	250 (83.33%)	3.63+0.90, 4



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Male	No			8	_		8	3.00+0.91,
Male	INO	_	-	(2.67%)	-	-	(2.67%)	4
Female	Yes	3			39		42	3.79+0.90,
remaie	res	(1%)	-	-	(13%)	-	(14%)	4
Female	No	-	-	-	-	-	-	
Total		9	20	81	152	38	300	
		(3%)	(6.67%)	(27%)	(50.67%)	(12.67%)	(100%)	

6.3 Online banking services are very user friendly

The analysis of the present variable was based on three central tendencies i.e. mean, standard deviation and mode. Table 3 presents the analysis of Q3 across the participants` responses on the question i.e. do you have access to internet? The response of male respondents who had and had not access to internet was calculated to be 3.11+0.88, 4 and 3.50+0.88, 3 respectively. Moreover, there were no female respondents who had not internet access; the response of female respondents who had access to internet was calculated to be 3.88+0.88, 4 as can be seen in Table 3.

Table 3. Responses of the participants about 'Online banking services are very user friendly'

	Do you have	Online	banking s	services are	very user fri	endly		Mean+SD,
Gender	access to internet?	1 n(%)	2 n(%)	3 n(%)	4 n(%)	5 n(%)	Total	Mode
Male	Yes	8	20	88	104	30	250	3.51+0.87,
Male	165	(2.67%)	(6.67%)	(29.33%)	(34.67%)	(10%)	(83.33%)	4
Male	No			8	-	-	8	3.00+0.91,
Male		-	-	(2.67%)			(2.67%)	4
Female	Yes	1		1	40		42	3.90+0.88,
remaie	res	(0.33%)	-	(0.33%)	(13.33%)	-	(14%)	4
Female	No	-	-	-	-	-	-	
Total		9	20	97	144	30	300	
	Total		(6.67%)	(32.33%)	(48%)	(10%)	(100%)	

6.4 The response time of internet banking system is very reasonable

The analysis of the present variable was based on three central tendencies i.e. mean, standard deviation and mode. Table 4 presents the analysis of Q4 across the participants` responses on the question i.e. do you have access to internet? The response of male respondents who had and had not access to internet was calculated to be 3.64+1.05, 4 and 3.00+1.12, 4 respectively. Moreover, there were no female respondents who had not internet access; the response of female respondents who had access to internet was calculated to be 3.38+1.06, 4 as can be seen in Table 4.

Table 4. Responses of the participants about 'The response time of internet banking system is very reasonable'

	Do you have	The r						
Gender	access to interne t?	1 n(%)	2 n(%)	reasonab	4 n(%)	Total 5 n(%)		Mean+S D, Mode
Male	Yes	8 (2.67%)	20 (6.67%)	67 (22.33%)	120 (40%)	35 (11.67%)	250 (83.33%)	3.62+0.8 7, 4



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Male	No	-	-	8 (2.67%)	-	-	8 (2.67%)	3.00+0.9 3, 4
Female	Yes	-	-	6 (2%)	36 (12%)	-	42(14%)	3.86+0.8 8, 4
Female	No	-	-	-	-	-	-	
Total		8 (2.67%)	20 (6.67%)	81 (27%)	156 (52%)	35 (11.67%)	300 (100%)	

6.5 Internet banking system is very reliable

The analysis of the present variable was based on three central tendencies i.e. mean, standard deviation and mode. Table 5 presents the analysis of Q5 across the participants` responses on the question i.e. do you have access to internet? The response of male respondents who had and had not access to internet was calculated to be 3.55+0.79, 4 and 3.00+0.83, 4 respectively. Moreover, there were no female respondents who had not internet access; the response of female respondents who had access to internet was calculated to be 3.38+0.80, 4 as can be seen in Table 5.

Table 5. Responses of the participants about 'Internet banking system is very reliable'

	Do you	In	ternet ban	king systen	n is very relia	able.		Mean+SD, Mode
Gender	have access to internet?	1 n(%)	2 n(%)	3 n(%)	4 n(%)	5 n(%)	Total	
Male	Yes	6	19	69	124	32	250	3.63+0.83,
Male	res	(2%)	(6.33%)	(23%)	(41.33%)	(10.67%)	(83.33%)	4
Male	No	-	-	8(8	3.00+0.88,
Male				2.67%)	-	-	(2.67%)	4
Female	Yes	-	-	6	36		42	3.86+0.84,
remale	res			(2%)	(12%)	-	(14%)	4
Female	No	-	-	-	-	-	-	
Total		6	19	83	160	32	300	
		(2%)	(6.33%)	(27.67%)	(53.33%)	(10.67%)	(100%)	

VII. DISCUSSION

The idea of banking tasks began in 18th century BC [56]. This occurrence has the capacity to basically enhance the financial institutions therefore the financial sector and supposition from the uncompromising sights have actually appeared that this occurrence will eliminate the designs and the way exactly how bank services were developed and used [43]. On the top, the advantage of e-banking is the increased customer satisfaction [1]. Esther and Rajasekaran indicated that there were many people that don't learn about the e-banking and they suggested to financial institutions that the customers need to be ensured the security and safety of their transfers [57]. Yang et al. (2007) concluded that there were much less number consumers of E-banking in Georgia not because of absence of awareness however because lack of effective promotional approaches [58]. Enterprises are compelled to innovate their processes and practices on the introduction of brand-new technological innovations [59]–[61]. Narware (2016) indicated E-banking the optimal future financial mode and it will get over the typical banking unquestionably [62].

The better use of internet services has actually promoted the entrepreneurs given that so long to sell their products anywhere by utilizing web [56]. The banks offering the platform of on the internet transaction were classified as bigger, a lot more lucrative and efficient banks [43]. Ingle and Pardeshi (2016) reviewed the advertising approaches for electronic banking; strategies consisted of competitors, expense effectiveness, geographical reach, branding, consumer demographics, comfort, obliquity, exchange speed, exchange speed,



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efficiency and performance [56]. Bahl (2012) recommended policy ramifications for E-banking: that included licensing, validating an individual's identification, security, capacity preparation, customer education and learning, adaption, legalization, harmonization and integration [12]. Alikhani and Zare concluded numerous obstacles in the way to implementation of e-banking i.e. legal and financial regulative problems, process concerns, organizational culture issues, system and infrastructural problems and above all the legal obstacle was reported in Iran [10]. Gurme (2011) performed an evaluation and concluded that the major challenge for the fostering of e-banking by the client was the security of economic system because anybody could conveniently operate it [63].

Identified factors [64], [65], improved HR Architecture [66], Green HR practices [67], effective emotional intelligence [68], effective Day and Night shift management [69], modern HR practices [70], healthy Organizational Culture with less work stress [71], [72], competitive fringe benefits [73] can contribute to improve the job satisfaction of employees. The lack of funds is found as the major barriers in the implementation of MIS [74] and these issues resolved to improve productivity of employees and the better performance of the various administrative activities. Effective use of MIS can improve the overall business performance and customer satisfaction [33], [34] of the modern competitive banking industry. ICT applications are equally beneficial & effectively for the service industries also [75]-[77] and banking industry has no exception. The people follow the different patterns for exploring the information [78], [79] and it is very essential for the banking industry to understand the customers' Information seeking behavior to remain competitive. The businesses are transformed after Covid-19 [80] and banking industry should be ready to face post Covid-19 scenario because the customers can only be retained through providing the better service quality attributes [81]. Productivity Improvement is the concern for service sector also [66], [86]-[91] and banking industry should continuously explore the use of IT to improve the overall productivity. Performance evaluation is necessary for the competitive organizations [92], [93] and the banking industry should continuously update the performance evaluation criteria also with the changing business environment. The social media and TV advertisements can be used for educating the good behavior of general public during, before and after office timings [82], [83]. The web 2.0 tools i.e. Facebook, Twitter, Wikis, RSS, linkedin, blogging, YouTube and email groups are being used for promoting products & services [84][85] and banking industry should use them too effectively.

Kazmi and Hashim reported e-banking problems in Pakistan as; IT telecommunication infrastructural issue, ability problem, web site layout concern, security issue, depend on problem and cash laundering issue [94]. Lekshmi Bhai (2018) evaluated the issues of e-banking as: confidentiality, honesty, verification, consumer fulfillment, availability of employees services, competition, managing technology, safety risk, personal privacy danger, trust aspect, customer recognition and much less net infiltration in Indian context [95]. Rahman et al. (2017) when asked the inquiries from the participants with his currently established questionnaire that "web banking is very easy to run" then 64% of them replied indeed and remainder of 36% replied no [9]. Lusaya and Kalumba (2018) asked the concern from his respondents concerning the E-banking use; 42% addressed no and rest of 28% participants responded to indeed: additionally, from that 58%, 8% of them make use of e-banking for funds transfer, 2% for costs repayment and remainder of 48% utilized it for various other cash exchanges [44]. Yahiya performed a research in which he offered the outcomes as: 74.4% customers of e-banking were individuals, 11.2% were little and medium ventures and rest of 14.4% were corporate [55]. Male respondents who had not internet access gave the neutral response (3=neutral) across all the variables at the other hand, male and female respondents who had internet access agreed (111(37%)), (42(14%)) for easy accessibility of website respectively; easy services (113(37.67%)), (39(13%)); user-friendly (104(34.67%)), (40(13.33%)); reasonable system (120(40%)), (36(12%)) and reliable (124(41.33%)), (36(12%)) respectively.

VIII. CONCLUSION

People are appreciating the online banking who knows its benefits; since there is the gap of awareness it will decrease by time. In conventional banking, there was variety of operational issues i.e. slow retrieval of data, better possibility of fraudulence, higher efforts of consumer for purchase. Due to these problems, internet banking was presented right into the financial industry. There are varieties of advantages of web banking and on the exact same time, there are varieties of concerns in the way of e-banking to be completely taken on by the



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consumers. The customers maintain their funds and money in bank for the future requirements, services and for possessions and they intend to be guaranteed in terms of safety of their reservoirs. Considering that, many of the scientists has actually reported the security concern in the method to successful adoption of e-banking by the consumers [95]. This is because, it is of greatest demand to concentrate the transactional security on the e-banking phenomenon. There is number of customers who are using the solutions of electronic banking so it when there is the question of challenges regarding e-banking; customer recognition ought to not be located in the response yet the lack of promotional events pertaining to the e-banking.

IX. FUTURE IMPLICATIONS

This research study can be conducted at the bigger sample dimension (with diverse demographics in terms of geographical locations) for more accurate outcomes and final thought.

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X. CONFLICT OF INTEREST

There was no conflict of interest among the authors of the present research paper.

XI. REFERENCES

- [1] J. Chavan, "Internet Banking- Benefits and Challenges in an Emerging Economy," Int. J. Res. Bus. Manag., vol. 1, no. 1, pp. 19–26, 2013.
- [2] T. C. Ramavhona and S. Mokwena, "Factors influencing internet banking adoption in south African rural areas," South African J. Inf. Manag., vol. 18, no. 2, pp. 642–649, 2016, doi: 10.2224/sbp.2016.44.9.1443.
- [3] A. Faccia and L. P. L. Cavaliere, "Online Banking in Italy. 'Widiba Bank' Case Study, PESTLE and DEA Analysis," Financ. Mark. Institutions Risks, vol. 5, no. 1, pp. 87–97, 2021, doi: 10.21272/fmir.5(1).87-97.2021.
- [4] M. B. Uddin, A. Haque, M. M. Rahman, M. A. Al Mamun, and M. M. Hossain, "Electronic Banking Products and Services of Private Commercial Banks in Bangladesh: Present status and Challenges," Int. J. Bus. Manag. Rev., vol. 4, no. 8, pp. 44–55, 2016.
- [5] A. Farooqui and P. Rajani, "E-Banking Issues & Challenges," IOSR J. Bus. Manag., vol. 19, no. 10, pp. 31–39, 2017, doi: 10.9790/487X-1910063139.
- [6] N. M. Anand, "E-Banking Trends in India: Evolution, Challenges and Opportunities," Shanlax Int. J. Manag., vol. 3, no. 2, pp. 107–117, 2015.
- [7] T. S. Szopiński, "Factors affecting the adoption of online banking in Poland," J. Bus. Res., vol. 69, no. 11, 2016, doi: 10.1016/j.jbusres.2016.04.027.
- [8] I. D. Adewuyi, "The Challenges of Internet Banking in Developing Countries," Niger. Acad. Forum, vol. 9, no. 2, pp. 2–5, 2005.
- [9] M. Rahman, N. K. Saha, M. N. I. Sarker, A. Sultana, and A. S. Prodhan, "Problems and Prospects of Electronic Banking in Bangladesh: A Case Study on Dutch-Bangla Bank Limited," Am. J. Oper. Manag. Inf. Syst., vol. 2, no. 1, pp. 42–53, 2017, doi: 10.11648/j.ajomis.20170201.17.
- [10] M. Alikhani and A. Zare, "Reviewing the Issues and Challenges of Electronic Banking Regime in Iran," Economics, vol. 7, no. 1, pp. 1–9, 2018, doi: 10.11648/j.eco.20180701.11.
- [11] P. N. Dao, "Implementation of E-banking in Vietnam: Motivations and challenges-Case Company A," 2014.
- [12] S. Bahl, "E-Banking: Challenges & Policy Implications," 2012.
- [13] Z. Hussain, D. Das, Z. A. Bhutto, M. Hammad-u-Salam, F. Talpur, and G. Rai, "E-Banking Challenges in Pakistan: An Empirical Study," J. Comput. Commun., vol. 05, no. 02, pp. 1–6, 2017.
- [14] M. Ali, M. A. Khan, and M. A. Kalwar, "Challenges for Online Banking in Customers' Perspective: A Review," Int. J. Bus. Educ. Manag. Stud., vol. 5, no. 1, pp. 37–57, 2021.
- [15] M. Ali, M. A. Khan, and M. A. Kalwar, "Infrastructural Challenges of E-Banking as Per Customers'



International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Refereed International Journal)

Volume:04/Issue:10/October-2022 Impact Factor- 6.752 www.irjmets.com

- Perspective: Detailed Analysis Across Participants` Gender and Age," Int. J. Bus. Educ. Manag. Stud., vol. 5, no. 1, pp. 58–77, 2021.
- [16] M. A. Kalwar and M. A. Khan, "Increasing performance of footwear stitching line by installation of autotrim stitching machines," J. Appl. Res. Technol. Eng., vol. 1, no. 1, p. 31, 2020.
- [17] A. K. Chaudhry, M. A. Kalwar, M. A. Khan, and S. A. Shaikh, "Improving the Efficiency of Small Management Information System by Using VBA," Int. J. Sci. Eng. Investig., vol. 10, no. 111, pp. 7–13, 2021.
- [18] M. A. Khan, M. A. Kalwar, and A. K. Chaudhry, "Optimization of material delivery time analysis by using Visual Basic for applications in Excel," J. Appl. Res. Technol. Eng., vol. 2, no. 2, p. 89, 2021.
- [19] M. A. Kalwar, M. F. Shahzad, M. H. Wadho, M. A. Khan, and S. A. Shaikh, "Automation of order costing analysis by using Visual Basic for applications in Microsoft Excel," J. Appl. Res. Technol. Eng., vol. 3, no. 1, pp. 29–59, 2022.
- [20] M. A. Kalwar, S. A. Shaikh, M. A. Khan, and T. S. Malik, "Optimization of Vendor Rate Analysis Report Preparation Method by Using Visual Basic for Applications in Excel (Case Study of Footwear Company of Lahore)," Proc. Int. Conf. Ind. Eng. Oper. Manag. (IEOM, Dhaka, Bangladesh, December 26-27., 2020.
- [21] S. Kalhoro, L. A. Rahoo, M. Kalhoro, and M. A. K. Nagar, "The Meaning and Role of Management Information System in the Telecom Companies in Sindh Province," Comput. Eng. Intell. Syst., vol. 10, no. 3, pp. 9–13, 2019.
- [22] M. A. Gul, Z. K. Imran, M. A. Khan, and M. A. Kalwar, "Analysis of Legal and Security Issues of Internet Banking: Case Study of Karachi," Int. Res. J. Mod. Eng. Technol. Sci., vol. 4, no. 4, pp. 2572–2584, 2022.
- [23] M. A. Gul, Z. K. Imran, M. A. Khan, and M. A. Kalwar, "Analysis of Computer Awareness Across and Gender in Internet Banking and its Infrastructural Challenges," Int. J. Bus. Educ. Manag. Stud., vol. 4, no. 1, pp. 43–63, 2022.
- [24] M. A. Gul, Z. K. Imran, M. A. Khan, and M. A. Kalwar, "Analysis of Infrastructural Challenges of E-Banking as Reported by Customers," Proc. 1st Cent. Am. Caribb. Int. Conf. Ind. Eng. Oper. Manag. (IEOM), Portau-Prince, Haiti, June 15-16., pp. 396–408, 2021.
- [25] M. A. Gul, M. A. Imran, Zartasha Kiran; Wadho, Muzamil Hussain; Kalwar, L. A. Khan, Muhammad Ali; Rahoo, and S. A. Shaikh, "Investigation of E-Banking Challenges from Customers' Perspective on the Basis of Gender & Qualification," Int. Res. J. Mod. Eng. Technol. Sci., vol. 4, no. 6, pp. 5884–5901, 2022.
- [26] M. A. Kalwar et al., "Association of Comfortable Waiting Times of Patients in Queue with Diverse Demographics at Large Hospital's Out Patient Department (OPD)," Int. J. Sci. Eng. Investig., vol. 11, no. 127, pp. 24–33, 2022.
- [27] M. A. Khan, S. A. Khaskheli, H. A. Kalwar, M. A. Kalwar, H. B. Marri, and M. Nebhwani, "Improving the Performance of Reception and OPD by Using Multi-Server Queuing Model in Covid-19 Pandemic," Int. J. Sci. Eng. Investig., vol. 10, no. 113, pp. 20–29, 2021.
- [28] S. A. Khaskheli, H. B. Marri, M. Nebhwani, M. A. Khan, and M. Ahmed, "Compartive study of queuing systems of medical out patient departments of two public hospitals," Proc. Int. Conf. Ind. Eng. Oper. Manag., vol. 0, no. March, pp. 2702–2720, 2020.
- [29] T. Josefsson, "Challenges with Internet banking," pp. 1–11, 2017.
- [30] S. A. Khaskheli, M. A. Kalwar, A. A. Siddiqui, M. A. Khan, and T. H. Wadho, "Impatience Among Drivers with Varyign Demographics," in Proceeding of International conference on Professional Trends in Industrial and Systems Engineering (PTISE), Peshawar, Pakistan, April 24-25., 2018, no. April, pp. 465–469.
- [31] M. A. Kalwar, M. A. Khan, S. A. Shaikh, A. S. Soomro, M. S. Memon, and S. A. Khaskheli, "Aggressive driving behavior: A case study of Mehran UET, Jamshoro, Sindh, Pakistan," in Proceedings of the International Conference on Industrial Engineering and Operations Management (IEOM), Dubai, UAE, March 10-12., 2020, vol. 0, no. March, pp. 2350–2359.
- [32] M. A. Kalwar, S. A. Shaikh, M. H. Wadho, M. A. Khan, S. A. Khaskheli, and T. H. Wadho, "Violence and



International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Refereed International Journal)

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- Irritation in Driving Behaviour on the Road During Routine Traffic Situations: A Case Study," Int. Res. J. Mod. Eng. Technol. Sci., vol. 4, no. 5, pp. 6077–6088, 2022.
- [33] M. Kalhoro, M. A. Khan, S. Kalhoro, and L. A. Rahoo, "Customer satisfaction in commercial bank of Sindh province a case study of bank Al Falah," J. Libr. Philos. Pract., vol. 2331, no. May, pp. 1–13, 2019.
- [34] M. Kalhoro et al., "Customer satisfaction in commercial bank of Sindh province a case study of bank Al Falah," 2018.
- [35] C. Beatrice, "Challenges Facing Internet Banking: A Case Study of Family Bank Limited in Nairobi," United States International University-Africa, 2017.
- [36] P. C. Mondal, R. Deb, and M. N. Huda, "Transaction authorization from know your customer (KYC) information in online banking," in Proceedings of 9th International Conference on Electrical and Computer Engineering, ICECE 2016, 2016, pp. 523–526, doi: 10.1109/ICECE.2016.7853972.
- [37] N. O. Ogini, "Issues and challenges of online banking," Int. J. Inf. Res. Rev., vol. 05, no. 5, pp. 5430–5435, 2018.
- [38] G. A. Al-Weshah, "The role of internet banking in continuous improvement areas: Quantitative evidence from Jordanian banks," Int. J. Bus. Perform. Manag., vol. 14, no. 2, pp. 181–196, 2013.
- [39] A. M. L. and V. S., "Problems And Prospects Of E-banking Services An Empirical Study in Mysore District," J. Chem. Inf. Model., vol. 2, no. 2, pp. 14–23, 2016, doi: 10.1017/CB09781107415324.004.
- [40] V. M. Kumbhar, "Service Quality Perception and Customers' Satisfaction in Internet Banking Service: A Case Study of Public and Private Sector Banks," Cyber Lit. Int. Online J., vol. 4, no. 2, pp. 21–30, 2011.
- [41] N. Ravi and P. Schrick, "Bankers Perspective on Internet Banking," E-Service J., vol. 1, no. 1, pp. 21–36, 2001.
- [42] J. Jansen and R. Leukfeldt, "Phishing and malware attacks on online banking customers in the Netherlands: A qualitative analysis of factors leading to victimization," Int. J. Cyber Criminol., vol. 10, no. 1, pp. 79–91, 2016, doi: 10.5281/zenodo.58523.
- [43] P. MALHOTRA and B. SINGH, "The Impact of Internet Banking on Bank Performance and Risk: The Indian Experience," Eurasian J. Bus. Econ., vol. 2, no. 4, pp. 43–62, 2009, doi: 10.1057/palgrave.jbr.2340189.
- [44] S. Lusaya and B. Kalumba, "The Challenges of Adopting the Use of E-Banking to the Customers: The Case of Kasama District Banking Customers," Sch. J. Appl. Sci. Res., vol. 1, no. 2, pp. 26–31, 2018.
- [45] P. Revathi, "Digital Banking Challenges and Opportunities in India," EPRA Int. J. Econ. Bus. Rev., vol. 7, no. 12, pp. 20–23, 2019, doi: 10.36713/epra2985.
- [46] B. Borena and S. Negash, "IT Infrastructure Role in the Success of a Banking System: The Case of Limited Broadband Access," Inf. Technol. Dev., vol. 22, no. 2, pp. 265–278, 2015, doi: 10.1080/02681102.2014.979392.
- [47] B. D. Haig, "The philosophy of quantitative methods," in Studies in Applied Philosophy, Epistemology and Rational Ethics, 2012, pp. 6–30.
- [48] R. Andriukaitiene, J. Vveinhardt, and P. Zukauskas, "Philosophy and Paradigm of Scientific ResearchBandas, Cornelia," in Web of science, 2013, pp. 121–139.
- [49] R. Sobh and C. Perry, "Research design and data analysis in realism research," Eur. J. Mark., vol. 40, no. 11/12, pp. 1194–1209, 2006, doi: 10.1108/03090560610702777.
- [50] O. D. Apuke, "Quantitative Research Methods: A Synopsis Approach," Kuwait Chapter Arab. J. Bus. Manag. Rev., vol. 6, no. 10, pp. 40–47, 2017, doi: 10.12816/0040336.
- [51] C. Williams, "Research Methods," J. Bus. Econ. Res., vol. 5, no. 3, pp. 65-72, 2007, doi: 10.1017/9781108656184.003.
- [52] E. . Koh and W. . Owen, "Descriptive Research and Qualitative Research," in Descriptive research and qualitative research: Introduction to Nutrition and Health Research, 2000, pp. 219–248.
- [53] K. E. SWATZELL and P. R. JENNINGS, "Descriptive research: The nuts and bolts," J. Am. Acad. Physician



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International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Refereed International Journal)

Volume:04/Issue:10/October-2022 Impact Factor- 6.752

Assist., vol. 20, no. 7, p. 1, 2007, doi: 10.1097/01720610-200707000-00098.

- [54] L. Rensis, "A technique for the measurement of attitudes," Arch. Psychol., vol. 22, no. 140, p. 55, 1932.
- [55] S. Yahiya, "Prospects and Challenges of Electronic Banking in Ghana- A Case Stdy of the SG-SSB Limited," Institute of Distance Learning, Kwame Nkrumah University of Science and Technology, 2011.
- [56] A. Ingle and R. Pardeshi, "Internet Banking in India: Challenges and Opportunities," IBMRD's J. Manag. Res., vol. 1, no. 1, pp. 13–18, 2012, doi: 10.1017/CB09781107415324.004.
- [57] M. Esther and R. Rajasekaran, "Commerce A Study on Customer Awareness Towards E-Banking Services in Coimbatore City," Indian J. Res., vol. 4, no. 9, pp. 230–233, 2015.
- [58] J. Yang, M. Whitefield, and K. Boehme, "New issues and challenges facing e-banking in rural areas: an empirical study," Int. J. Electron. Financ., vol. 1, no. 3, pp. 336–354, 2007.
- [59] M. A. Khan, M. A. Kalwar, A. J. Malik, T. S. Malik, and A. K. Chaudhry, "Automation of Supplier Price Evaluation Report in MS Excel by Using Visual Basic for Applications: A Case of Footwear Industry," Int. J. Sci. Eng. Investig., vol. 10, no. 113, pp. 49–60, 2021.
- [60] M. S. Arain, M. A. Khan, and M. A. Kalwar, "Optimization of Target Calculation Method for Leather Skiving and Stamping: Case of Leather Footwear Industry," Int. J. Bus. Educ. Manag. Stud., vol. 7, no. 1, pp. 15–30, 2020.
- [61] M. A. Kalwar and khan, "Optimization of Procurement & Purchase Order Process in Foot Wear Industry by Using VBA in Ms Excel," Int. J. Bus. Educ. Manag. Stud., vol. 6, no. 1, pp. 213–220, 2020.
- [62] P. Narware, "E-Banking Challenges & Policy Implications," Int. J. Enterp. Comput. Bus. Syst., vol. 6, no. 2, 2016.
- [63] V. M. Gurme, "Issues and Challenges in Mobile Banking In India: A Customers' Perspective," Int. Res. J. Eng. Technol., vol. 6, no. 1, pp. 161–163, 2011.
- [64] A. A. Shahani, M. A. Korai, M. A. Khan, and D. K. Soomro, Abdul Salam; Kakepoto, "Factors Influencing Job Satisfaction of Faculty Members in Public Sectors Engineering Universities of Sindh Province," 2018.
- [65] A. A. Shahani, A. Tanwari, H. B. Marri, M. A. Korai, and M. A. Khan, "Job satisfaction analysis of faculty members in public sector engineering universities: An empirical investigation," Mehran Univ. Res. J. Eng. Technol., vol. 36, no. 3, pp. 649–660, 2017.
- [66] K. Khan, M. A. Khan, J. A. Thebo, T. Ahmed, and L. A. Rahoo, "Examining The Human Resource Architecture Relationship With Employee Productivity Of Chemical Industries," J. Contemp. Issues Bus. Gov., vol. 27, no. 2, pp. 5847–5856, 2021.
- [67] L. A. Rahoo, S. A. Khan, M. A. Khan, K. Khan, and M. Memon, "Analysis of green HR practices in information technology industries of Pakistan," Int. J. Disaster Recover. Bus. Contin., vol. 11, no. 1, pp. 2105–2113, 2020.
- [68] N. Arain, Muhammad Waqas; Rahoo, J. A. Thebo, M. A. Khan, and L. A. Rahoo, "Emotional Intelligence and Job Satisfaction among Faculty Members of Higher Education Institutions of Pakistan," J. Contemp. Issues Bus. Gov., vol. 27, no. 6, pp. 509–515, 2021.
- [69] A. A. Siddiqui, S. Jumani, Muhammad Saleh; Shaikh, Shakeel Ahmed; Memon, Muhammad Saad; Marri, and M. A. Khan, Muhammad Ali; Shaikh, "Comparing the effects of Day and Night shift on employees job satisfaction A case study at Cement Industry," 2017.
- [70] M. A. Khan, "Critical Study of Human Resources Management of Pakistan International Airlines Corporation (PIAC)," Bachelor of Engineering (Thesis), Department of Industrial Engineering & Management, Mehran University of Engineering & Technology, Jamshoro, Sindh, Pakistan., 2003.
- [71] L. A. Rahoo, P. Hasnain, A. M. Abbasi, T. Ahmed, and M. A. Khan, "THE RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY AND ORGANIZATIONAL CULTURE IN THE UNIVERSITY LIBRARIES OF SINDH, PAKISTAN," J. Contemp. Issues Bus. Gov. Vol. vol. 27, no. 2, 2021.
- [72] L. A. Rahoo, P. B. Channar, and M. A. Khan, "Analysis of Stress on the Employees of Software Development Industries of Pakistan," Int. Res. J. Comput. Sci. Technol., vol. 1, no. 1, pp. 6–12, 2020.



International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Refereed International Journal)

Volume:04/Issue:10/October-2022 Impact Factor- 6.752 www.irjmets.com

- [73] S. A. Soomro, H. B. Marri, A. A. Shah, and M. . Kalwar, "Investigation of Salary, Pension and Satisfaction of Employees: Case Study of Public Sector Organization," Int. Res. J. Mod. Eng. Technol. Sci., vol. 4, no. 5, pp. 6062–6076, 2022.
- [74] M. A. K. Nagar, L. A. Rahoo, H. A. Rehman, and S. Arshad, "Education management information systems in the primary schools of sindh a case study of hyderabad division," in 2018 IEEE 5th International Conference on Engineering Technologies and Applied Sciences (ICETAS), 2018.
- [75] M. Kalhoro, Q.-A. Abro, S. Kalhoro, L. A. Rahoo, and M. A. Khan, "ICT Integration in Teaching and Learning at Secondary Schools A Case of Sindh Province Pakistan," Proc. Int. Conf. Innov. Teach. Learn. (ICITL), 25-26 June, 2018, Virtual Univ., 2018.
- [76] S. Arshad, H. A. Rehman, L. A. Rahoo, and M. A. K. Nagar, "Information Communication Technology Applications used to Enhance Knowledge Management in the University Libraries of Pakistan," in Proceedings of IEEE 5th International Conference on Engineering Technologies and Applied Sciences (ICETAS), 2018.
- [77] M. Memon, M. A. Khan, and L. A. Rahoo, "Usage and Availability of Information and Communication Technology Applications Facilities at Central Library," Int. Res. J. Comput. Sci. Technol., vol. 1, no. 1, pp. 86–92, 2020.
- [78] M. A. K. Nagar, M. Kalhoro, and S. Kalhoro, "Information Seeking Behavior of Research Scholars at MUET Library & Online Information Center, Jamshoro: A Study," J. Libr. Philos. Pract., no. August, pp. 1–8, 2018.
- [79] M. A. K. Nagar, Q.-A. Abro, M. Kalhoro, L. A. Rahoo, and S. Kalhoro, "Information Seeking Behavior of Research Scholars at MUET Library & Online Information Center, Jamshoro: A Study," 2018.
- [80] L. A. Rahoo, B. Ramejo, and M. A. Naqvi, Syed Sohail Abbas Khan, Muhammad Ali Ramejo, "Analysis of Public Awareness on Adaptation to Covid-19 Vaccination during Pandemic Situation in Pakistan," Turkish J. Physiother. Rehabil., vol. 32, no. 3, pp. 21156–21163, 2021.
- [81] N. Baladi, P. B. Channar, L. A. Rahoo, T. Ahmed, and M. A. Khan, "Improve Customer Retention through Service Quality Attributes in the Restaurant Industry of Pakistan," J. Contemp. Issues Bus. Gov., vol. 27, no. 6, pp. 331–340, 2021.
- [82] M. A. Khan, M. Kalhoro, Q.-A. Abro, L. A. Rahoo, and S. Kalhoro, "Impact of TV Advertisement on the Life Style of Pakistani Youth: A Case Study of Sindh Province," J. New Media Mass Commun., vol. 70, no. 3, pp. 7–12, 2018.
- [83] A. Rahoo, Liaquat Ali; Kalhoro, Mariam; Kalhoro, Shadab; Sahito, Uroosa; Nagar, Muhammad Ali Khan; Bhutto, "Analysis of TV Advertisement on the Life Style of Pakistani Youth: A Case Study of Sindh Province," 2018.
- [84] L. A. Rahoo, Z. H. Baladi, S. Arshad, M. A. K. Nagar, and S. Rustamani, "Use of web 2.0 tools for marketing and promotion of library services in higher education institutes of Sindh," in 2018 IEEE 5th International Conference on Engineering Technologies and Applied Sciences (ICETAS), 2018.
- [85] M. A. Buriro, L. A. Rahoo, M. Nagar, Muhammad Ali Khan; Kalhoro, S. Kalhoro, and A. A. Halepota, "Social Media used for promoting the Libraries and Information Resources and services at University Libraries of Sindh Province," 2018.
- [86] S. Rajput, M. A. Khan, S. Samejo, G. Murtaza, and R. A. Ali, "Productivity Improvement by the Implementation of lean manufacturing practice (takt time) in an automobile assembling plant," in Proceedings of the International Conference on Industrial Engineering and Operations Management Dubai, UAE, March 10-12, 2020.
- [87] Z. Iftikhar et al., "Productivity Improvement of Assembly Line in Textile Stitching Unit by Lean Techniques of Line Balancing and Time and Motion Study," Int. J. Sci. Eng. Investig., vol. 11, no. 127, pp. 51–60, 2022.
- [88] Z. Iftikhar, M. A. Khan, R. Kumar, K. Bux, and A. Haseeb, "Productivity Improvement of Garments Industry by Assembly Line Technique of Lean Manufacturing," in Proceedings (Abstract) of the

[1683]



International Research Journal of Modernization in Engineering Technology and Science (Peer-Reviewed, Open Access, Fully Refereed International Journal)

- International Conference on Industrial & Mechanical Engineering and Operations Management Dhaka, Bangladesh, December 26-27, 2021.
- [89] M. Bukhsh et al., "Productivity Improvement in Textile Industry using Lean Manufacturing Practice of Single Minute Die Exchange (SMED)," 2021.
- [90] N. Jaleel, M. A. Khan, M. Jamal, M. Safeeruddin, M. M. Shajee, and U. Mughal, "Productivity Improvement by Lean Methodologies at Dyeing & Printing Plant," in Proceedings (Abstract) of the International Conference on Industrial & Mechanical Engineering and Operations Management Dhaka, Bangladesh, December 26-27, 2021.
- [91] Z. Iftikhar et al., "Lean Manufacturing Tools and Techniques for the Productivity Improvement in Assembly Lines Operations of Industries," Int. Res. J. Mod. Eng. Technol. Sci., vol. 4, no. 7, pp. 4554–4562, 2022.
- [92] S. Kumar, M. A. Khan, S. Ahmed, A. Rehman, and E. Luhar, "A Case Study for Performance Evaluation of Motorcycle Assembly Line through the Lean Manufacturing Practice of Overall Equipment Effectiveness (OEE)," in Proceedings of the International Conference on Industrial Engineering and Operations Management Dubai, UAE, March 10-12, 2020.
- [93] M. A. Kalwar, M. A. Khan, Z. Phul, M. H. Wadho, M. F. Shahzad, and H. B. Marri, "The analysis of performance before and after ERP implementation: a case of a manufacturing company," J. Appl. Res. Technol. Eng., vol. 3, no. 2, pp. 115–121, 2022, doi: 10.4995/jarte.2022.17789.
- [94] S. S. A. Kazmi and M. Hashim, "E-Banking in Pakistan: Issues and Challenges," Int. J. Acad. Res. Bus. Soc. Sci., vol. 5, no. 3, pp. 50–54, 2015, doi: 10.6007/ijarbss/v5-i3/1498.
- [95] P. S. Lekshmi Bhai, "E-Banking in India Problems and Prospects," Tech. Res. Organ. India, vol. 5, no. 1, pp. 77–81, 2018.