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From the Desk of the Editor-in-Chief

"Victory comes from finding opportunities in problems."

Sun Tzu

Since December 2019 we have seen 18 months of unpredictability. 18 months of uncertainty. 18 months of deadly Coronavirus. The resurge of Covid after invention of vaccines across the world has affected everything including industry, Socio-economic and education sector. Though GoI took many progressive decisions to save the nation from this pandemic in a war-like situation yet situation is not totally under control. Time is tough but it taught us several lessons of life. There is cascading effect of pandemic on education sector from school education to HEIs especially in assessment and evaluation of students.

It is also true that challenges are always associated with the opportunities. As always research has proven to be saviour for the society and mankind with new inventions and innovations in all the sectors.

This issue of **Amity Business Review** is a collection of such quality research papers from India and abroad.

Have a thoughtful reading. Looking forward for your continued support and constructive feedback.

Sanjeev Bansal

From the Desk of the Editor

The ongoing COVID-19 pandemic is having a profound impact on organizations across the world, leadership during the COVID-19 crisis has been brought to the fore in both political and organizational settings. Technology played an integral role and forced many organizations to undergo significant transformation, rethinking key elements of their business processes and use of technology to maintain operations whilst adhering to a changing landscape of guidelines and new procedures. Thousands of research papers have been published during pandemic on topics like online learning, digital strategy, artificial intelligence, information management, social interaction, cyber security, big data, block chain, privacy, mobile technology and strategy through the lens of the current crisis and impact on these specific areas

The purpose of ABR is to promote quality publication, build management theories and contribute to management practices. We appreciate empirical, fundamental, pedagogical research including field, laboratory and theoretical contributions in the area of management. ABR is committed to enhance the quality of research through intellectual contribution of researchers across the globe. Since the inception of the journal, we have focused upon the various components of Marketing, Finance, Human resources, Operations, economy, behavioural sciences and information technology. In the current issue of ABR, contemporary research papers have been included after the extensive review at various levels by our peer review team. A diverse subject of management has been entertained by the researchers and this issue is now before the readers for their intellectual reading.

I am sure that this issue will be another milestone in the journey of ABR.

Dr. Amit Kumar Pandey

Job Automation, Employee Turnover and Organizational Performance: A Study of Deposit Money Banks (DMBs) in Anambra State

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The study explores the interrelationship between job automation, employee turnover and organizational performance of Deposit Money Banks in Anambra State, Nigeria. The study adopted the descriptive survey research design. The population comprised of eighty (80) senior staff in eight (8) Deposit Money Banks (DMBs) in Anambra state. The study utilized the complete enumeration method; because the total identifiable respondents were less a hundred. Simple random sampling technique was used to select the respondents for the study. The study focused on primary data collected using a structured questionnaire. The questionnaire was pilot tested on a sample of 20 respondents from four DMBs. The reliability of the instrument was tested using Cronbach Alpha. The data were analyzed using Pearson Correlation, simple linear regression technique, and SEM. The results showed a significant positive relationship between job automation and employee dismissal; secondly, a significant positive relationship between job automation and customer satisfaction; and, lastly, employee dismissal mediates the relationship between job automation and customer satisfaction. Based on this, the study recommends that managers of contemporary organizations embrace technological adoption as a strategic response to competitive forces in the business environment. In this regard, managers are advised to adopt a complementary perspective during automation of business processes.

Keywords: *job automation, employee turnover, performance, Customer satisfaction*

BACKGROUND OF THE STUDY

The 21st century has witnessed tremendous developments with breakthrough technologies such as artificial intelligence (AI), data science, etc. enabling advanced applications such as robotics, virtual assistants, etc. (Vermeulen, Kesselhut, Pyka, & Saviotti, 2018). These developments led to several aspects of traditional tasks performed by humans to be replaced by machines, thus, gradually the automation of several human related tasks. According to Makridakis (2017) the revolution in AI was directed to "substitute, supplement and amplify practically all tasks currently performed by humans, becoming in effect, for the first time, a serious competitor to them". Automation mainly affected routinized work in stationary, predictable environments (Ford, 2015; Wolfgang, 2016); particularly, where tasks mainly concern executing rules rather using cognitive processes (Levy & Murnane, 2007).

Automation involves a broad range of technologies including robotics and expert systems, telemetry and communications, electro-optics, sensors, wireless applications, systems integration, and many more (International Society of Automation [ISA], 2020). In the banking sector, technological advancements caused tremendous changes, such as e-banking, etc. in the ways banks render their services (Atiku, Genty, & Akinlabi, 2011). Presently, it is estimated that over ninety percent of businesses are conducted via online platforms (Ojeka & Ikpefan, 2012).

However, the catalytic effect of automation revolves around two opposite perspectives (Martens & Tolan, 2018). The first perspective finds a complementarity between men and machines. Therefore, the labor-saving impact of automation is counterbalanced by higher wages, economic growth and more employment in other sectors. In contrast, the substitutive perspective finds that automation led to job displacement causing polarization, de-skilling and possibly creating a jobless economy (Autor, 2015; Agrawal, Gans, & Goldfarb, 2019). In support of this view, the study by Brynjolfsson and McAffee (2014), argued that unemployment was mainly caused by rapid technological advancements that outpace growth in demand. In Nigeria, several studies have argued that automation of several bank processes, such as the use of Automated Teller Machines (ATMs) led to redundancy and retrenchment of employees (Atiku, Genty, & Akinlabi, 2011; Agboola, 2003).

This led to a high rate of involuntary turnover in the banking sector. In this regard, turnover refers to the number or percentage of employees in the banks that exit during the period. This was mainly because the banks consider services of such employees no longer relvent (Fisher, Schoenfeldt, & Shaw, 2003). The issue of organizational performance has dominated the business and management literature for several decades (Bititci, Garengo, Dörfler, & Nudurupati, 2012; Hamann, Schiemann, Bellora, & Guenther, 2013; de Oliveira Lacerda, Ensslin, & Ensslin, 2011; Miller, Washburn, & Glick, 2012). According to Elena-Iuliana and Maria (2016) performance is a 'subjective perception of reality, which explains the multitude of critical reflections on the concept and its measuring instruments'. Organizational performance comprises of the actual output or results of an organization as measured against its intended outputs (or goals and objectives) (Msafiri, 2013).

Statement of the Problem

The banking industry has undergone a lot of changes brought about by the advent of automation (Camara, Rahim, Yusof, Tambi, & Magassouba, 2019). In Nigeria and many African countries, the automation of several jobs is not without its attending problems. Several authors have noted that of particular interest is the extent to which technology will displace, modify or create future jobs (Arntz, Gregory, & Zierahn, 2017; Autor, 2015; Autor, Dorn, & Hanson, 2015; Frey & Osborne, 2017). This is often expressed in statements such as "Robots will destroy our jobs – and we're not ready for it" (Shewan, 2017) and "The long-term jobs killer is not China. It's automation". (Miller, 2016), A survey of Deposit Money Banks (DMBs) in Lagos by Atiku, Genty, and Akinlabi (2011), found that the adoption of ATMs and other e-payment platforms have led to job instability and employee turnover in the Nigerian banking sector.

A high turnover rate is problematic and has an impact on organization's performance and competitiveness (Asamoah, Doe, & Amegbe, 2014). Thus, the debate among labor economists has been "What are the real effects of technology on employment in particular?" (Vermeulen, Kesselhut, Pyka, & Saviotti, 2018). Scholars have shown a direct effect of automation on customers' satisfaction and sustainable competitive advantage which directly translates to improved organizational performance (Atiku, Genty, & Akinlabi, 2011). However existing studies have failed to address the issue of employee turnover that arises from automation and its consequent effect on organizational performance. However, high turnover rate is contradictory to high performance because it shows that one of the core conditions of high performance – i.e. a highly committed workforce – is not met (Glebbeek & Bax, 2002). This was further elucidated by Ahmed, Sabir, Khosa, Ahmad, and Bilal (2016, p. 88), when they stated that 'economic, psychological and organizational consequences are symptomatic of the complexity of employee turnover'. Therefore, the link between job automation and organizational performance may be due to intervening variables and therefore requires a broader analysis of potential mediating effect of employee turnover. Few studies have examined the possibility that employees are usually apprehensive about technological change and encroachment into work life (McClure, 2018).

Objectives of the Study

The primary objective of this study is to examine the interrelationship between job automation, employee turnover and organizational performance of Deposit Money Banks in Anambra State, Nigeria. The specific objectives of the study are therefore as follows:

1. To examine the relationship between job automation and employee dismissal by the banks.
2. To determine the relationship between job automation and customer satisfaction by the banks.
3. To evaluate the mediating effect of employee dismissal on the relationship between job automation and customer satisfaction by the banks.

Research Questions

The following research questions were raised in line with the objectives stated above:

1. What is the nature of the relationship between job automation and employee dismissal by the banks?
2. What is the nature of the relationship between job automation and customer satisfaction by the banks?
3. To what extent does employee dismissal mediate the effect of job automation on customer satisfaction by the banks?

Hypotheses of the Study

The following hypotheses were formulated to guide the researcher in line with the objectives stated above:

H_1: There is a significant relationship between job automation and employee dismissal by the banks.

H_2: There is a significant relationship between job automation and customer satisfaction bythe banks.

H_3: Employee dismissal mediates the relationship between job automation and customer satisfaction by the banks.

Significance of the Study

The study would be beneficial to several stakeholder groups both within and outside the organization; such as, the Business (Academic) Literature: The findings of this study are expected to contribute to available literature on job automation, employee turnover and organizational performance nexus of bank employees. The study is expected to serve as a source of vital and useful information for other researchers who might wish to embark on similar studies.

Policy makers: Tackling the bane of unemployment has been at the heart of several policy frameworks in most African countries. The study by elucidating the impact of job automation on rate of employee turnover shall enable policy makers in developing frameworks to regulate business practices and human resource strategies across different industries.

Managers: The findings of the study shall be beneficial to managers in understanding how job automation which causes employee turnover may transcend to organizational performance either by decreasing employee morale or causing customer boycott of products.

REVIEW OF RELATED LITERATURE

Conceptual Review

Job Automation

According to the International Society of Automation [ISA] (2020) automation may be defined as "the creation and application of technology to monitor and control the production and delivery of products and services". In the words of Groover (2007) automation refers to the technology via which a procedure or process is executed without the intervention of human (or minimal human intervention). In the banking sector, examples of ICT processes being utilised by banks include: mobile telephony, facsimile, wireless radio phone, Very Small Aperture Terminal satellite (VSAT), Automated Teller Machine (ATM), internet banking and Local Area Network (LAN) among other (Idowu, Aliu & Adagunodo, 2002; Salawu & Salawu, 2007; Ugwu, 1999).

The International Society of Automation [ISA] (2020) notes that automation provided several benefits to industries, such as:

- **Manufacturing,** including food and pharmaceutical, chemical and petroleum, pulp and paper;
- **Transportation,** including automotive, aerospace, and rail;
- **Utilities,** including water and wastewater, oil and gas, electric power, and telecommunications;
- **Facility operations,** including security, environmental control, energy management, safety, and other building automation; and, many others.

According to Agboola (2003) automation in Nigeria's banking industry has been reflected in areas, such as:

1. Bankers Automated Dreaming Services. This involves the use of Magnetic Ink Character Reader (MICR) for cheques processing. It is capable of encoding, reading and sorting cheques.
2. Automated Payment System: Devices used here include Automated Teller Machine (ATM), Plastic Cards, and Electronic Fund Transfer.
3. Automated Delivery Channels: These include interactive television and the internet.

Employee Turnover

Employee turnover refers to the rate of change in the workforce of an organization over a given period of time (Msafiri, 2013). According to Radzi, Ramley, Salehuddin, Othman, and Jalis (2009) employee turnover refers to an individual's perception of the possibility of leaving an organization or withdrawing from an organization permanently. Armstrong (2006) defined it as the time-to-time changes in the composition of the workforce that result from hiring, release and replacement of employees. Employee turnover is a measure of the extent to which employees leave and new employees enter the service of concern (Gupta, 2003). Muntaner, Benach, Hadden, Gimeno, and Benavides (2006) offered a concise explanation of employee turnover:

"Employee turnover occurs when workers leave their positions in organizations. Their reasons for leaving jobs are a measure of employee morale. The rate of employee turnover is one measure of the commitment of employees to organizational goals. Turnover is determined partly by organizational policy and management through factors such as salary, benefits, promotions, training and work schedules, and partly by personal factors that are largely beyond employer's control – for example, an employee's desire to relocate".

Labor turnover refers to the rate of change in the workforce of an enterprise during a given period. It has been defined as the time-to-time changes in the composition of the workforce that result from hiring, release and replacement of employees M, Armstrong (2006). C.B Gupta (2003) defined Labour turnover as a measure of the extent to which employees leave and new employees enter the service of concern. According to Schultz (2008) employee turnover refers to the movement of employees in and out of the boundaries of an organization. The author further distinguished between controllable and uncontrollable turnover. Controllable turnover includes both voluntary resignations and dismissals. Voluntary resignations are controllable because management can offer better wages, working conditions and opportunities to retain employees, while dismissals are controllable because management can use more constructive strategies, such as training, unambiguous policies on discipline and coaching, to shape an employee's behavior to a desired level rather than dismissing the employee. While Uncontrollable staff turnover refers to turnover which is outside the control of management, such as turnover as a result of death, retrenchments and incapacity. Involuntary turnover occurs when an organization dismisses or retrenches its employees because their services are no longer needed (Fisher, Schoenfeldt, & Shaw, 2003).

Costs/Consequences of Employee Turnover

Generally, all costs related to the leaving and replacement of employees can be considered to be costs of labour turnover (Glebbeek & Bax, 2002). Mungumi (2002) in her study outlined the following as the consequences of labor turnover. Hiring costs involving time and facilities for recruitment, interviewing and examining a replacement, secondly, the scrap and waste rates climb when new employees are involved, thirdly, over time pay may result from excessive number of separations, causing trouble in meeting contract delivery dates. Fourthly, training cost involving the time of supervisor's, personnel department and trainees.

Other reasons include; higher accident rates for new employees, loss of production in the interval between separation of the old employees and replacement, lack of utilizing the production equipment during the hiring interval and the training period, administrative costs of removing from and adding to payroll, loss of highly qualified employees, decreased commitment to those employees remaining in the organization and loss of employees who have the potential for advancement deprives the organization of future opportunities for promotion from within.

The positive consequences of labor turnover are; less stress and better use of skills and renewed interest in work for those who leave, financial advantage; increased innovation, cross breeding between old and new employees, separation creates opportunities to hire from diverse background and to redistribute the cultural and gender composition of the workforce, career opportunities elsewhere for those who leave, reduced labor costs, replacement of poor performance, infusion of new knowledge by new employees, stimulates change in bad policies and increased satisfaction for those who stay.

Organizational Performance

Organizational performance comprises of the actual output or results of an organization as measured against its intended outputs (or goals and objectives) (Msafiri, 2013). Richard, McMillan-Capehart, Bhuian, and Taylor (2009) opined that it involves the recurring activities to establish organizational goals, monitor progress towards such goals, and make adjustments to achieve those goals more effectively and efficiently. Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives) (Richard, McMillan-Capehart, Bhuian, & Taylor, 2009).

Richard, Devinney, Yip, and Johnson (2009) posited that performance "encompasses three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.)." According to Moullin (2003), performance refers to "the value the organization delivers for customers and other stakeholders"; while, Combs, Crook, and Shook (2005) view performance as "the economic outcomes resulting from the interplay among an organization's attributes, actions, and environment.

However, despite the multiplicity of definitions, a more comprehensive definition was offered by Tang and Liou (2010). According to them, performance entails the extent a firm achieves both financial and non-financial goals relative to its competitors (Tang & Liou, 2010). Organizational performance is influenced by the skills, ability, knowledge, competencies, and experiences of the available workforce in the organization (Msafiri, 2013).

The Figure shown above provides a summary of the conceptual framework for the study, where by the arrows indicates two variables i.e. Independent variable-labour turnover with its impacts, and dependent variable that is organizational performance with its criteria's. Thus the end result of independent variable (labour turnover) has a direct negative impact on dependent variable (organizational performance). Each performance criteria is directly linked to a certain impact of labour turnover as shown by the arrow in the sketch above. Labour turnover is commonly measured by staff turnover rate (LTR). The LTR gives an indication of the percentage of employees that leave the organization over a period of time.

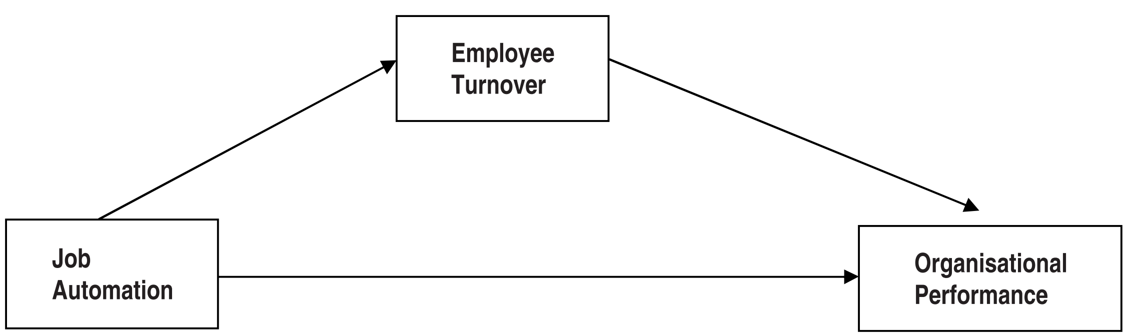
The study is further guided by the systems theory. And organizations are open systems which take inputs "from the environment (output from other system) and through a series of activities transform or convert these inputs into output (input to other systems) to achieve some objectives" (Atiku, Genty, & Akinlabi, 2011).

Empirical Review

Studies on Job Automation

McClure (2018) conducted a study titled 'The rise of automation in the workplace, technophobes, and

Conceptual Framework



Source: Authors Conceptualisation (2020)

fears of unemployment'. The study utilised a survey approach. The sample and primary data were obtained from Wave 2 of the Chapman Survey of American Fears (N = 1,541). The results showed that technophobes were more likely than nontechnophobes to report experiencing anxiety-related mental health issues and fear unemployment and financial insecurity.

Kimutai and Kwambai (2017) conducted a study titled 'Effect of office automation on organizational effectiveness of public universities in Kenya'. The study adopted the survey research design. The sample comprised of 65 senior staff members in the University of Eldoret. The study relied on primary data collected via the use of questionnaires. The data were analyzed using descriptive statistics and multiple regression analysis. The results showed a significant positive relationship between office automation and organizational effectiveness.

Sirohey, Hunjra, and Khalid (2012) undertook a study titled 'Impact of business process automation on employees' efficiency'. The sample comprised of 265 employees in Accountant General of Pakistan Revenues [AGPR] and the Ministry of Finance, the Controller General of Accounts and Line Ministries. The study relied on primary data; obtained from a structured questionnaire. The data were analysed using descriptive, Pearson correlation and regression analysis. The results showed that business process automation (i.e., understanding of new system, response to change, adaptation to new technology, and conformity to standards) have a significant association with employee efficiency.

Atiku, Genty, and Akinlabi (2011) conducted a study titled 'Effect of electronic banking on employees' job security in Nigeria'. The study adopted the descriptive survey research design. The sample comprised of 400 employees randomly selected from four DMBs in Lagos State. The study relied on primary data; generated via a structured questionnaire administered to the respondents. The data were analysed using descriptive statistics and the hypothesis tested using Chi-square test of independence. The results proved that the adoption of e-banking in the banks led to loss of job and early retirement of employees.

Agboola (2003) undertook a study titled 'Information technology, bank automation, and attitude of workers in Nigerian banks'. The study utilised a survey approach. The primary data were collected from six commercial banks randomly chosen from Lagos. The author distributed a total of 60 questionnaires to the staff of the six banks. The study also relied on oral interview to corroborate and augment information generated from the questionnaires. The data were analysed using descriptive and inferential statistics. The results showed that the application of Information Technology (IT) has greatly affected personnel requirements in the banks. Sixty six percent of the employees (66%) claimed that automation of banking services has altered the required skill in favour of those that are computer literate in the banking environment. This has heightened the fear of redundancy and retrenchment among workers from fields that are less related to banking.

Studies on Employee Turnover

Kwame, Mahama, Boahen, and Denu (2017) conducted a study titled 'The effect of employee turnover on the performance of Zoomlion Ghana Limited'. The study employed the descriptive cross sectional survey approach. The sample comprised of 120 employees purposively chosen from Zoomlion Ghana Limited. The study utilized primary data; obtained via questionnaires. The data were analyzed using descriptive and inferential statistics. The results showed that lack of motivation, lack of good working conditions, and lack of recognition of one's effort were top three causes of labour turnover in Zoomlion Ghana Limited. Secondly, factors such as loss of productivity, reduced profitability, and high cost of training and recruiting new employees were among several effects of labour turnover on organizational performance.

Ahmed, Sabir, Khosa, Ahmad, and Bilal (2016) conducted a study titled 'Impact of employee turnover on organizational effectiveness in telecommunication sector of Pakistan'. The study utilized a survey research design. The sample comprised of 250 respondents from 25 telecom centers situated in District D.G. Khan and Multan in Pakistan. The primary data was obtained via administering a structured questionnaire. The data were analyzed using Pearson correlation coefficient and multiple regression technique. The results showed that employee turnover depending upon factors such as (firm stability, pay level, industry, work situation, training and supervision) have a significant positive impact on organizational effectiveness.

Asamoah, Doe, and Amegbe (2014) conducted a study titled 'The effect of employee turnover on the performance and competitiveness of banks in Ghana'. The study adopted the cross sectional survey research design. The sample comprised of 480 employees from 15 selected banks in Ghana. The study relied on primary data. The data were analyzed using descriptive, independent samples t-test and Pearson product moment correlation analysis. The results showed that banks with low employee turnover perform better and more competitive than banks with high employee turnover. Secondly, highly motivated employees have a lower turnover intention than less motivated employees; and, job rank had a significant impact on employee turnover intentions. Lastly, gender, age and job tenure have no significant effect on turnover intentions.

Glebbeek and Bax (2002) undertook a study titled 'Labor turnover and its effects on performance: An empirical test using firm data'. The study used secondary data from official statistical records of 110 offices. The data was obtained from a temporary job agency, located in the Netherlands over the years 1995 to 1998. The data were analyzed using multiple regression technique. The results showed that labor turnover is related to office performance in a curvilinear pattern.

METHODOLOGY

Research Design

The study adopts the descriptive survey research design. This research design is concerned with gathering information on prevailing conditions or situations of interest for the purpose of description and interpretation (Salaria, 2012). The design is considered appropriate because the study used a questionnaire to obtain data in order to describe and draw inferences on the relationships, between the variables of job automation, employee turnover and organizational performance.

Area of the Study

The study was conducted in Anambra State. Anambra State is one of the five states in South-East geo-political zone of Nigeria. The state shares borders with Enugu and Imo States with a total of one hundred and eighty-one (181) towns.

Population of the Study

The population is a group of elements or cases, which could be individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research (McMillan & Schumacher, 2001). The population for the study comprised of eighty (80) senior staff in eight (8) Deposit Money Banks (DMBs) in Nnamdi Azikiwe University, Awka.

Table 1: Distribution of respondents based on function in the DMBs

S/No.	Name of DMBs	Customer Service Officers	Cash Officers	Marketing Officers	Branch Manager	No of Staff
1	First Bank	3	3	3	1	10
2	UBA	3	3	3	1	10
3	Heritage Bank	3	3	3	1	10
4	Access/Diamond	3	3	3	1	10
5	Zenith Bank	3	3	3	1	10
6	Access Bank	3	3	3	1	10
7	Fidelity Bank	3	3	3	1	10
8	GTB	3	3	3	1	10
	Total	24	24	24	8	80

Source: Field Survey (2020)

Sample Size

Sampling is the process of selecting a few (a sample) from the bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, outcome, and situation regarding the bigger group (Gupta & Gupta, 2011). The study employed the complete enumeration method; because the total identified respondents were less a hundred.

Sampling Technique

The study used probability sampling method. Probability sampling is based on the idea that the people that are chosen to be part of the sample are chosen because the researcher has some notion that they will be a representative cross-section of the whole population (Denscombe, 2007). The study used simple random sampling technique to select the respondents for the study. This technique affords each element or unit in the population the same probability of being selected in the sample. It is considered suitable, especially where the sample has a homogenous feature.

Sources of Data

Data is an integral part of the research process. The study focused on primary data collected using a structured questionnaire. Questionnaires represent one of the most efficient and inexpensive methods available for collecting high quality data from a large number of respondents (Murdoch et al., 2014). The study used a structured questionnaire for obtaining the needed data from the respondents.

Questionnaire Design and Administration

The research instrument used in the study was a structured questionnaire; sub-divided into four sections: A, B, C, and D. Section A retrieved demographic information from the respondents; such as, gender, marital status, academic qualification, and working experience. Section B focused on job automation; while, Section C addressed issues related to employee turnover. Section D focuses on the relevant aspects of organizational performance discussed in the study. The questionnaire was designed using the five point Likert scale with weights as follows: 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 =

agree; 5 = strongly agree. The instrument was administered to the employees of the selected Deposit Money Banks (DMBs) in Awka metropolis.

Pilot Testing

The questionnaire was pilot tested on a sample of 20 respondents from four DMBs located in Nnamdi Azikiwe University, Awka, Anambra State. The individuals were selected based on their familiarity with the research objectives and did not partake in the final research (Frazer & Lawley, 2000). Having received feedback, changes were made in the wording of questions, layout, sequential methods and validity before the final copy of the questionnaire was administered (Collis & Hussey, 2009).

Reliability of Instrument

Reliability ensures that a measure is free from error and has consistent result (Zikmund, 2003). The reliability of the instrument was determined using Cronbach Alpha. The Cronbach Alpha (α) is one the most popular measures of reliability in survey studies and measures how closely related a set of items are as a group. By way of reducing method bias, different scales were used to measure the items. The formula of α is given as follows: X = Y1 + Y2……. + YK

Cronbach alpha α is defined as α =

$$(x+a)^n = \sum_{=0}^{Kn} \binom{n}{k} x^k a^{n-k}$$

$$(x+a)^n = \sum_{=0}^{Kn} \binom{n}{k} x^k a^{n-k}$$

Where α2 X the variance of the observed total test scores and

α2 Y The variance of component I for the current sample of persons.

The rule of thumb for interpreting the Cronbach Alpha coefficient is shown in the table below:

The rule of thumb for interpreting the Cronbach Alpha coefficient is shown in the table below:

Table 2: Rule of thumb for coefficient interpretation

Coefficient Range	Strength of Association
<0.60	Poor
0.60 to <0.70	Moderate
0.70 to < 0.80	Good
0.80 to < 0.90	Very good
≥0.90	Excellent

Source: Hair, Money, Page, and Samouel (2007)

Validity of the Instrument

Validity is the degree to which a test measures what it is supposed to measure. Collis and Hussey (2009) described validity as the level at which findings accurately meet the objectives of the study. The questionnaire was validated before administration to the respondents. Hence, a copy of the questionnaire was forwarded to two experts in the field of management and administration for review, correction and approval.

Methods of Data Analysis

The responses to the questions in the questionnaire were presented and analyzed using frequency table and simple percentages. The research questions were analysed using Pearson Correlation analysis; while, the hypotheses were tested using linear regression technique. The models are specified below as follows:

ED = $\beta 0 + \beta_1$JA+ μ……………………….. Equation 1

CS = $\beta 0 + \beta_2$JA + μ……………………….. Equation 2

Notes: ED (Employee Dismissal), JA (Job Automation), CS (Customer Satisfaction); β0 refers to the constant, $\beta_1 - \beta_2$ are coefficients of Job Automation in Equations 1 & 2 respectively and μ is the error term.

DATA PRESENTATION AND ANALYSIS

The total number of questionnaire distributed was eighty (80); of this a total of seventy five were retrieved (75). This represented approximately ninety-four (93.75%) percent success rate; and, was considered suitable for the study. The demographic information of the respondents is shown in the table below.

Table 3 above shows that 54.7% of the respondents who participated in the study were males and 45.3% were females. Of the total respondents, 28.0%, were below 30 years of age, 36.0% were between 31-45 years of age, 25.3% were between 46-55 years of age, and 10.7% were above 56 years of age respectively. The marital status of the respondents showed that 25.3% were single, 64.0% were married; while, 10.7% were divorced / deceased. The highest educational level of the respondents showed that majority of them had first degree, giving 61.3%. The MSc holders were 25.3%; while, PhD holders were nil. Lastly, the OND holders were 13.3%. The last demographic variable was years of work experience of the respondents, this showed that 25.3% worked for the DMBs between 1-5 years; 48.0% worked between 6 – 10 years, 14.7% worked for the DMBs between 11 – 15 years; while, 12.0% worked for the company for 16 years and above.

The reliability of the instrument was tested using Cronbach Alpha (α), it reveals how reliable are the components of the questionnaire. The result of reliability test is known as the Cronbach's Alpha derived by Cronbach in 1951.

Table 3: Demographic profile of the respondents

Characteristic		Frequency	Percentage
Gender:	Male	41	54.7%
	Female	34	45.3%
Age:	Under 30 years	21	28.0%
	31 – 45 years	27	36.0%
	46 – 55 years	19	25.3%
	56 & Above	8	10.7%
Marital status:	Single	19	25.3%
	Married	48	64.0%
	Divorced/Deceased	8	10.7%
Highest Academic Qualification:	OND	10	13.3%
	HND/BSc (First degree)	46	61.3%
	MSc	19	25.3%
	PhD	-	-
Years of work experience:	1 - 5 years	19	25.3%
	6 – 10 years	36	48.0%
	11 – 15 years	11	14.7%
	16 & Above	9	12.0%

Source: Field Survey (2020)

Table 4: Reliability coefficient of the instrument

	N	Cronbach Alpha (α)
Job automation:	5	.701
Employee dismissal:	5	.706
Customer satisfaction:	5	.740

Source: SPSS Ver. 24

The instrument is divided into three sub-sections; with each sub-section corresponding to a particular sub scale. The job automation subscale consisted of five items (α = .701), the employee dismissal subscale consisted of five items (α = .706), and the customer satisfaction subscale consisted of five items (α = .740). Thus, all α values were slightly above .70; thus, the instrument (comprising of the various sub-scales) were considered to be highly reliable.

Descriptive Statistics

Table 5: Descriptive statistics job automation and employee turnover items

S/No.		N	Min	Max	Mean
1	Most banks now employ the use of technology in delivering over 70% of her services to customers	75	1	5	4.32
2	Technology is mostly deployed as a source of competitive advantage	75	1	5	4.11
3	The bank has in place measures to tackle data breach issues on its e-platform	75	1	5	4.21
4	The deployment of technology has greatly led to improved cost reduction in the banks	75	1	5	4.76
5	To boost market share technology as a key aspect of innovation is a vital part of bank operation	75	1	5	4.03
6	The fear of automation has heightened fear of job loss among employees	75	1	5	4.08
7	Automation greatly reduced job responsibilities in the banks	75	1	5	4.55
8	I feel a sense of insecurity because of the persistent automation of job functions	75	1	5	4.00
9	I am inclined to leave/resign from my current job once I have a better offer	75	1	5	3.98
10	The rate of turnover in my current organization is so discouraging	75	1	5	3.01

Source: SPSS Ver. 24

Table 6: Descriptive statistics of organizational performance items

S/No.		N	Min	Max	Mean
1	Technology adoption has improved the quality of products and services offered to our customers	75	1	5	4.38
2	Technology has improved our customer response time	75	1	5	3.56
3	Customer satisfaction is paramount in deciding which new technology to adopt	75	1	5	3.76
4	The automation of business processes has served as greater driver in employee skill acquisition decision	75	1	5	4.06
5	Technology adoption has improved the efficiency and effectiveness used in completing tasks	75	1	5	4.35

Source: SPSS Ver. 24

Analysis of Research Questions

Research question one: What is the nature of the relationship between job automation and employee dismissal by the banks?

Table 7: Relationship between job automation and employee dismissal

	Correlation Coefficient
Job automation and employee dismissal:	.698**
N	75

Source: SPSS Ver. 24

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

The Pearson Correlation Coefficient had a significant positive value .698 ($p<.05$); thus, the nature of relationship between job automation and employee dismissal is significant and positive. Therefore, as banks automate more of their job processes the likelihood of employee dismissal rises simultaneously.

Research question two: What is the nature of the relationship between job automation and customer satisfaction by the banks?

Table 8: Relationship between job automation and customer satisfaction

	Correlation Coefficient
Job automation and customer satisfaction:	.887**
N	75

Source: SPSS Ver. 24

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

The Pearson Correlation Coefficient had a significant positive value .887 ($p<.05$); thus, the nature of relationship between job automation and customer satisfaction is significant and positive. Therefore, the automation of several bank processes improved the satisfaction of customers with the banks products and services.

Research question three: To what extent does employee dismissal mediate the effect of job automation on customer satisfaction by the banks?

Table 9: Mediating effect of employee dismissal

Parameter			Estimate	Lower	Upper
Estimand 1	W1*W2	JA→ED→CS	-.451	-.842	1.218

Source: IBM SPSS Amos ver. 22

The mediating effect of employee dismissal [Estimand 1], showed a negative coefficient.

Test of Hypotheses

Hypothesis one: There is a significant relationship between job automation and employee dismissal by the banks.

Table 10: Linear regression result showing effect of job automation on employee dismissal	
Adjusted R-Squared	.457
F-Statistic	8.421
Prob. (F)	0.000**
t-statistic	3.01
Prob. (t-statistic)	0.002**

Source: SPSS Ver. 24

The model showed an adjusted R squared value of .457; therefore the proportion of variance in the dependent variable explained by the independent variable is 45.7%. The F statistic (ratio of the mean regression sum of squares divided by the mean error sum of squares) which is used to check the statistical significance of the model showed a value of 8.421; p value<.05; therefore the hypothesis that all the regression coefficients are zero is rejected.

Hypothesis two: There is a significant relationship between job automation and customer satisfaction by the banks.

Table 11: Linear regression result showing effect of job automation on customer satisfaction	
Adjusted R-Squared	.767
F-Statistic	4.048
Prob. (F)	0.000**
t-statistic	3.98
Prob. (t-statistic)	0.000**

Source: SPSS Ver. 24

The model showed an adjusted R squared value of .767; therefore the proportion of variance in the dependent variable explained by the independent variable is 76.7%. The F statistic (ratio of the mean regression sum of squares divided by the mean error sum of squares) which is used to check the statistical significance of the model showed a value of 4.048; p value<.05; therefore the hypothesis that all the regression coefficients are zero is rejected. The t statistic of job automation is 3.98 (p<.05), thus, the null hypothesis is rejected and the alternate accepted; there is a significant positive relationship between job automation and customer satisfaction by the banks.

Hypothesis three: Employee dismissal mediates the relationship between job automation and customer satisfaction by the banks.

Evaluating overall model fit involves three statistical measures: absolute fit, parsimonious fit, and incremental fit indices. The chi-square/df ratio (χ^2 / df = 2.031), the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) fit index Incremental Fit Index (IFI), Normed Fit Index [NFI], and the Root Mean Square Error of Approximation (RMSEA) all reached or exceeded acceptable fit thresholds. The Goodness-of-Fit Index [GFI] and the Adjusted Goodness-of-Fit Index [AGFI] were not computed. Based on the results, the overall goodness of fit of the model is comparatively ideal. Thus, H0 is rejected because the overall goodness of fit for the model suggests that there "is evidence that employee dismissal mediates the relationship between job automation and customer satisfaction by the banks."

Table 12: Fit indices of the hypothesized model

	χ2/df	GFI	AGFI	CFI	TLI	IFI	NFI	RMSEA
Acceptable fit	<3	>.9	>.9	>.9	>.9	>.9	>.9	.05 < x < .08
				Tseng and Schmitt (2008)				
Hypothesized model	2.031	-	-	.910	.974	.889	.983	.069

Source: Authors computation using IBM SPSS Amos ver. 22.

Discussion of Findings

The first hypothesis showed that there is a significant positive relationship between job automation and employee dismissal in the banks. This supports the study by Atiku, Genty, and Akinlabi (2011) in Lagos State, Nigeria that found that the adoption of e-banking in various banks led to loss of job and/or early retirement of employees. More so, studies have shown that an increase in automation cause greater employee anxiety and fear of unemployment as documented in the study by McClure (2018) in the U.S.A. This was also supported in the study by Agboola (2003) on a survey of employees of six commercial banks located in Lagos, reported that automating banking services heightened the fear of redundancy and retrenchment among workers.

The second hypothesis revealed a significant positive relationship between job automation and customer satisfaction by the banks. This is because studies have proven that automation increases the efficiency of employees and assists organizations in rendering their objectives. This finding supports the study by Kimutai and Kwambai (2017) in Kenya; that found a significant positive effect of office automation on organizational effectiveness. Yet another study by Sirohey, Hunjra, and Khalid (2012) in Pakistan showed that business process automation had a significant association with employee efficiency.

The third hypothesis showed that employee dismissal mediates the relationship between job automation and customer satisfaction by the banks. The study by Asamoah, Doe, and Amegbe (2014) on a sample of banks in Ghana showed that banks that had low employee turnover performed better and more competitive than banks with high employee turnover. This is consistent with the results as the direct effect of X on Y showed a positive coefficient; while, the indirect effect of X on Y (path A= + and path B= -) showed a negative coefficient. The direct effect is consistent with prior studies, such as Atiku, Genty, and Akinlabi (2011), that found a direct effect of automation on customers' satisfaction and sustainable competitive advantage.This is because automation increases efficiency of employees and assists organizations to achieve their objectives. Kimutai and Kwambai (2017) in Kenya found a significant positive effect of office automation on organizational effectiveness.

CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The empirical results are briefly summarised below as follows:

1. There is a significant positive relationship between job automation and employee dismissal by the banks ($p<.05$);
2. There is a significant positive relationship between job automation and customer satisfaction by the banks ($p<.05$) and,
3. Employee dismissal mediates the relationship between job automation and customer satisfaction by the banks.

Conclusion

The study examined the interrelationship among job automation, employee turnover and organizational performance in Deposit Money Banks in Awka, Anambra State. Job automation has been at the center of the 21st century with many traditional functions been replaced by machines and robots. The study evaluates the direct and indirect effect of job automation on organizational performance. The results showed that job automation has a significant positive effect on employee dismissal and customer satisfaction. The mediation result showed that employee dismissal mediates the relationship between job automation and customer satisfaction of DMBs.

Recommendations

The study makes the following recommendations based on the major findings from the research:

1. Automation as a necessity: The managers of contemporary organizations should embrace technological adoption as a strategic response to competitive forces in the business environment. Managers are advised to adopt technological changes that lower costs and increase customer satisfaction in comparison with competitors.
2. Automation should be managed: Managers are advised to adopt a complementary perspective during automation of business processes; this, is because the decline in employee morale that usually result from workers retrenchment or displacement may serve as a deterrent to worker productivity as workers secretly carry the fear of lay-offs.
3. Managers should encourage employees to engage in further advanced training and skill acquisition process in order to avoid the likelihood of redundancy and out-datedness in this era of rapid technological advancement. With advances in robotics and AI, the threat of technological unemployment is to be countered with the requisite skill acquisition.

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Relevance of IFRS to A Developing Country: Evidence From Nigeria

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The study examined the relevance of IFRS to Nigeria as a developing country with a view to determine the extent it has significantly improved accounting quality and profitability of Nigerian companies as well as the extent it has significantly increased FDI in Nigeria. A sample of 66 firms was selected from non-financial companies quoted on the Nigerian Stock Exchange (NSE). Ex-post facto research design was adopted. Data were gathered from the audited annual reports and accounts of the sampled companies covering a period of 7 years from 2012 to 2018. Data analysis was carried out using descriptive statistics and Ordinary Least Square (OLS) regression. Findings revealed that accounting quality and profitability improved in the post IFRS periods but the improvement was not statistically significant. However, FDI significantly increased in the post IFRS and the improvement was statistically significant. The researchers based on the findings recommended that the Financial Reporting Council of Nigeria (FRCN) should put in more efforts in monitoring firms' total compliance/ensuring full implementation of IFRS by all companies quoted on the Nigerian Stock Exchange so as to achieve significant improvement in the areas of accounting quality and profitability as well as attain other benefits associated with adoption and full implementation of IFRS.

Keywords: *IFRS, Developing Country, Accounting Quality, Profitability and Foreign Direct Investment (FDI)*

INTRODUCTION

The disparity in the national accounting standards of developing nations with that of developed countries makes it too hard for prospective international investors to access the exact financial performance of the companies in the emerging nations as well as in making sound investment decisions. However the quality of financial statements of the developing economies stands a chance of being enhanced by means of better accounting standard. It is believed that the adoption of IFRS will improve the accounting quality of companies resulting in increased relevance, reliability, consistency and comparability of information included in the financial statements. According to International Accounting Standard Board - IASB (2010) Accounting information has the quality of relevance when it makes a difference in the business decision, provides information that has predictive and confirmatory value. Proponents of IFRS such as Daske et al (2008) posit that implementing IFRS improves the quality of accounting information and is beneficial to investors.

Studies have also disclosed that Foreign Direct Investments (FDI) encourages economic growth and development particularly in developing countries by way of transferring technologies and developing human resources, thus implementing

IFRS seems a means of attracting FDI. Even though IFRS has received wider adoption and acceptance by many countries and have been propagated by many scholars on how it will improve accounting quality and other benefits, Beuren and Klann (2015) had an opposing view. Their argument was based on the fact that since IFRS is based on principles, it will give access for manipulation of accounting numbers by financial managers and as a result will reduce the relevance, reliability, comparability and transparency of financial reporting information. Several researchers doubt the relevance of IFRS to developing nations. Murtala (2017) affirms that IFRS is not relevant to shareholders, short and long term lenders of fund.

Despite the fact that IFRS has gained wider acceptance/adoption among many nations, very few research has been carried out on its relevance on Nigeria as a developing nation with a view to determine the extent it has significantly improved accounting quality and profitability of Nigerian Companies as well as the extent it has significantly increased FDI in Nigeria. Moreover, related studies on this used qualitative data and majority of the researches on the relevance of IFRS on accounting quality were carried out mostly in foreign countries especially developed nations. Previous studies reviewed were based on theories such as Agency theory, Stakeholders' theory, Efficient Market Hypothesis, Legitimacy theory, Conservative Method theory, which differ clearly from the theory used by this study. Besides the previous studies also used proxies such as ROE, ROA and so on to measure profitability which also differ clearly from the proxy used by this study in measuring profitability. The foregoing problems and gaps necessitated this study.

Research Objectives

The study sought to determine the relevance of IFRS to Nigeria as a developing country. It addressed the following specific objectives:

1) Determine the extent accounting quality has significantly improved in the post IFRS periods.
2) Ascertain the extent profitability has significantly improved in the post IFRS periods.
3) Find out the extent Foreign Direct Investment (FDI) has significantly increased in the post IFRS periods.

Research Hypotheses

The following null hypotheses were formulated to guide the study

1. Accounting quality has not significantly improved in the post IFRS periods.
2. Profitability has not significantly improved in the post IFRS periods.
3. Foreign Direct Investment (FDI) has not significantly increased in the post IFRS periods.

Review of Related Literature

Conceptual review

Accounting quality

Accounting quality according to Barth, Landsman and Lang (2008) is the capacity of accounting information to show the economic position and performance of a company. Accounting quality indicates the way in which information in the financial statement presents an accurate and flaxen position/performance of a business (Umobong & Akani, 2015).

Earnings Management

Earnings Management is defined as a "situation where managers use judgment in financial reporting either to mislead some users about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers" (Rudra & Bhattacharjee, 2012, p.3)

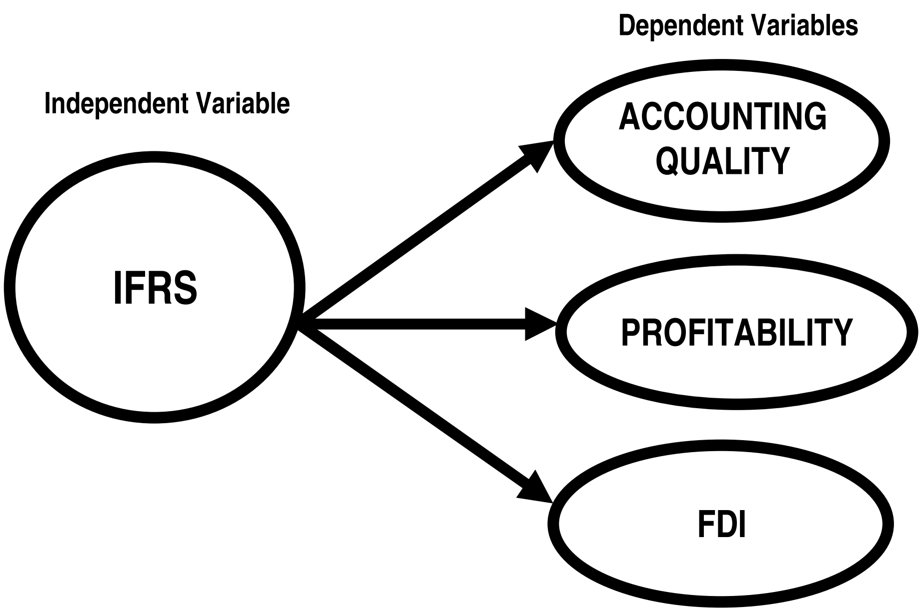
International Financial Reporting Standards (IFRS)

According to Tendeloo and Vanstraelen (2005), IFRS is a set of conventions and guiding principles which guides and directs global businesses on how to attain the objective of keeping proper records, uniformity, transparency, comparability and improved public trust in financial reporting. In the views of Abata (2015), IFRSs are the outcome of the ideas of the private sector to harmonize and internationalize financial reporting to meet the demands arising due to globalization and regional convergence of businesses. Zaiyol, Egwu and Udende (2017) posit that companies that fail to implement the tenets of IFRS would experience inconsistencies, lack of transparency and accountability, alteration of accounting information which will bring about inferior financial reporting custom and diffusion of low quality financial information to the public.

Reasons for Nigeria's Adoption of IFRS

Nigerian government gave a directive that all public quoted companies should effective from January 2012 prepare and present their financial statements in accordance with IFRS. The motives for the directive were for easy comparability of financial statements of Nigerian companies with that of global business communities, easy understandability of financial statements of multinational companies, for the Nigerian capital markets to compete with other global capital markets and attract foreign investors, increase the influx of FDI in Nigeria, reduce cost of preparation and presentation of group financial reports, makes easy the consolidation of financial statements of group companies and so on. In summary, the aim for Nigeria's adoption of IFRS was to improve levels of disclosure and quality of financial reporting.

Figure 1: Conceptual Framework



Source: Researchers' Conceptualization (2020)

The conceptual framework of the study variables as shown in figure 1 above portrayed IFRS as the independent variable and Accounting Quality, Profitability and Foreign Direct Investment (FDI) as the dependent variables.

IFRS and Accounting Quality

Christensen, Lee and Walker (2008) in their study found out that adoption of IFRS doesn't enhance accounting quality on its own. But Chai, et al (2010) discovered that most of measures of accounting quality were enhanced in the post IFRS periods in European Union. However, the result of the study by Umobong and Akani (2015) confirmed that the IFRS adoption does not result in higher accounting quality. This result suggested that there were no improvement in financial reporting over the first two years of post IFRS adoption.

IFRS and Profitability

Latridis (2010) concluded that IFRS implementation has favourably affected financial performance of firms (measured by profitability and growth potentials). Amahalu et al (2015) found that IFRS has an effect on the reported net income and equity of selected quoted Nigerian banks. It also has a positive effect on the reported profitability of banks. The results of the study by Adeuja (2015) revealed no statistically significant difference on profitability due to IFRS adoption. The study by Uyar et al (2016) disclosed that profitability is not significant determinant of IFRS compliance. Akinleye (2016) found out that IFRS adoption has positive impact on profitability (i.e. ROA and ROE) of money deposit banks.

IFRS and Foreign Direct Investment

Irvine and Lucas (2006) found that countries that adopted IFRS have massive rise in flow of Direct Foreign Investment. According to Espetein (2009), the adoption of IFRS lowers cost of capital and facilitates international capital formation and flows. Marquez-Ramos (2011) found out that converging accounting processes in Europe helped in reducing financial information asymmetry and unfamiliarity among businesses of different nations, reduced information costs, which stimulates the surge of FDI as well as international trade. Okpala (2012) found a significant relationship between IFRS adoption by companies and FDI in Nigeria. Akpomi and Nnadi (2017) found that adoption of IFRS has positive effect on the flow of FDI and its adoption by African nations will improve the flow of FDI through enhancing comparability.

Theoretical Framework

This study was anchored on Institutional theory. Institutional theory was propounded by John Meyer and Brian Rowan in 1977. The theory considered the processes by which structures, schemes, rules and norms are authoritatively established as guidelines for social conduct. The theorists affirm that the institutional environment can strongly influence the development of formal structures in an organization, often more profoundly than market pressures. They insisted that institutional mythologies are merely accepted ceremoniously to enable the organization gain or maintain legitimacy in the institutional environment. Legitimacy in the institutional environment helps ensure organization survival. Furthermore, Scott (1995) stated that for businesses to stay alive, they must comply with the regulations and credence existing in the society. This theory is related to this study as the International Accounting Standard Board (IASB) is like institutional environment/authority that issue/develop accounting standards globally. The board issues IFRSs which are standards that guide the conduct of businesses in terms of their preparation and presentation of financial reports worldwide. Thus businesses that adopt and implement this IFRS stands a chance of surviving as their financial reports will attain international comparability and they will also achieve improvement in their levels of disclosure and quality of reporting among others, which are the aims of IFRS.

Empirical Review

Irvine and Luca (2006) examined the rationale and impact of the adoption of IFRS on the developing nations: The case of the United Arab Emirates. The results of the findings revealed that countries that adopted IFRS experienced huge increases in Foreign Direct Investment (FDI) flows across countries. Christensen, Lee and Walker (2008) studied the impact of mandatory IFRS adoption on accounting quality. It aimed at determining whether improvement in accounting quality is due to the standards or incentives to adopt. Findings showed that compulsory adoption of IFRS has no effect on the accounting quality of companies without motivations to adopt. The study concluded that improvement in accounting quality in terms of applying new standards does not depend on whether the new standards are of higher quality but on the motivations of the account preparers. The study on IFRS adoption and financial statements effects: The UK case by Latridis (2010) was based on data collected from firms listed on the London Stock Exchange. The study found out that IFRS implementation has favourably affected the financial performance (measured by profitability and growth potentials). Chai, et al (2010) examined the role of IFRS in accounting quality, evidence from European Union (EU). The study derived data from the financial data of public listed companies in 15 member states of the EU before and after full adoption of IFRS in 2015. Findings showed that majority of accounting quality indicators improved after the adoption of IFRS in European Union. Umobong and Akani (2015) researched on IFRS adoption and accounting quality of quoted manufacturing firms in Nigeria: A cross sectional study of brewery and cement manufacturing firms. The study examined the disparity in accounting information quality of pre and post IFRS periods of manufacturing companies in Nigeria for a period of five years. Analyses were carried out on accounting quality indicators using multiple regressions. T-test was performed for mean equality for comparing of the pre and post periods. Findings revealed a fall in accounting quality measured by earnings management, value relevance and timely loss recognition. Earnings, Book Value of Equity and Timely loss recognition are less value relevant in post IFRS period than in pre period. Measuring the effects of IFRS adoption on accounting quality: A review, was studied by Pascan (2015). The paper analyzed the effects of transiting from national accounting standards to IFRS on accounting quality in Europe. The study observed that accounting standards, legal/political systems and financial reporting inducements affected accounting quality. IFRS adoption and Foreign Direct Investment (FDI): Evidence from Nigerian quoted firms, was carried out by Jinadu, Ojeka and Ibidunmi (2016). The paper examined whether IFRS adoption has significant positive impacts on FDIs in Nigeria. Primary data was used and regression analysis was employed in analyzing data. Result showed that adoption of IFRS was positively and significantly associated with Foreign Direct Investments. Effect of IFRS adoption on the performance of money deposit banks in Nigeria was studied by Akinleye (2016). The study adopted ratio analysis in investigating the association between IFRS and bank performance. 10 banks were randomly selected out of 21 quoted banks. Data were collected from the financial statements of the selected banks for the period covering 2009 to 2014. Panel data analysis involving pooled OLS analysis among others was employed. Findings showed that IFRS has positive impact on bank performance measured by ROA and ROE. Financial ratios for example, liquidity ratio, current ratio as well as investment ratio have significant effect on bank's performance. Akpomi and Nnadi

(2017) studied the impact of IFRS adoption on Foreign Direct Investment (FDI): Evidence from Africa and implications for managers of education. The study using a sample of 48 countries in Africa and a fixed effect model for the regression found that adoption of IFRS has a positive effect on the flow of FDIs. Regulatory qualities are motivation for complying with International Financial Reporting Standards. Does International Financial Reporting Standards (IFRS) impact profitability ratios of listed banks in Nigeria? This was studied by Erin, Oduwole, Olojede and Arumona (2018). The paper provided empirical analysis of the impact of IFRS on profitability ratios of 11 banks in Nigeria. Wilcoxon Signed Rank test and Normality test were used in data analysis. Result showed that the adoption of IFRS does not have significant effect on profitability ratios of quoted Nigerian banks. Vanparys (2018) researched on the relationship between IFRS and development in developing countries. The aim was to find out whether IFRS rules help developing nations in their development. The study as a conceptual work concluded that if IFRS is well implemented and it receives support through well developed legal and political systems as well as strong financial markets, it can play vital developmental roles in developing nations. Gingrich, Kratz and Faraci (2018) studied IFRS adoption in developing countries: What is the impact? The study explored perceptions of business leaders on the entire accounting and financial environment. Survey data from the World Economic Forum's Global Competitiveness Report was adopted. 8 countries that have adopted IFRS were sampled. Findings revealed that IFRS adoption have positive impacts on the accounting environment in four cases. The effects of International Financial Reporting Standards on Reporting Quality of financial Institutions in Ghana, was studied by Amissah and Hammond (2020). The paper examined the reporting quality of Ghanaian financial instruments after the adoption of IFRS. Sampled companies comprised 51 financial institutions (banks and insurance companies). Fixed effect logistic regression was used in hypotheses testing. Result showed that there was decline in the financial reporting quality of Ghanaian financial institutions in the post adoption period.

METHODOLOGY

Ex-post facto research design was used by this study. The period was 7 years (2012 – 2018). Population comprised all the non-financial companies quoted on the Nigerian Stock Exchange. Purposive sampling was used to select 66 companies as the sample size of the study. Secondary data were used which were collected from the sampled companies' annual reports. Descriptive statistics and Ordinary Least Square (OLS) regressions were adopted in analysing data with the aid of E-view version 9.

Measurement of Variables

IFRS is the independent variable while accounting quality, profitability and FDI are the dependent variables. IFRS is measured using content analysis – involving IFRS adoption, First time adoption and audit quality. Accounting quality is measured by earnings management. In consistent with previous studies (Uwalomwa et al 2016, Nnadi and Nwobu 2016), this study proxies earnings management by earnings smoothing. Earnings smoothing "is measured by the variability of changes in net income and the variability of changes in net income relative to variability of changes in operating cash flows" (Barth Landsman & Lang, 2007, p. 23). Profitability is measured by Gross Profit Margin (GPM). GPM is measured as gross profit divided by revenue multiplied by 100%. FDI is measured by increase in FDI. Firm age and leverage are also included as control variables.

Model Development

The study estimated the following models for determining the relevance of IFRS to Nigeria as a developing country.

ESMOOTH = α_0 + α_1IFRSCA + α_2FAGE + α_3FLEV + ε……………..equation 1

GPM = α_0 + α_1IFRSCA + α_2FAGE + α_3FLEV + ε………………..equation 2

FDI = α_0 + α_1IFRSCA + α_2FAGE + α_3FLEV + ε………………..equation 3

Where:

ESMOOTH = Earnings Smoothing

GPM = Gross Profit

FDI = Foreign Direct Investment

FAGE = Firm Age

FLEV = Firm Leverage

α_0 = Constant

$\alpha_1 - \alpha_3$ = Coefficients of Regression

ε = Error term

DATA ANALYSIS, PRESENTATION AND RESULTS

The data used in this study were obtained from the annual reports and accounts of the sampled 66 non-financial companies quoted on the NSE

Table 1 shows the descriptive statistics of the study variables. The observation of 150 in the table is as a result of the panel data set with the combination of time series data and cross sectional data of quoted companies in Nigeria. The average earnings smoothing of companies in Nigeria is 8.11 with a maximum of 2.26, a minimum of -1.30 with a standard deviation of 1.21. The observed average gross profit margin size is about 24.838 with a maximum of 34.168, a minimum of 13.558 with a standard deviation of 7.378. The observed degree of the average foreign direct investment is -2.66 with a minimum of 1.03, a maximum of -1.59 and a standard deviation of 7.40 percent. The observed degree of the average IFRSCA is 1923.88 with a minimum of 1924, a maximum of -1923 and a

Table 1: Descriptive Analysis

	ESMOOTH	GPM	FDI	IFRSCA	FAGE	FLEV
Mean	8.11E+08	24.83887	-2.66E+12	1923.875	92.50000	0.124838
Median	1.13E+09	25.04413	-1.95E+12	1924.000	92.50000	0.124313
Maximum	2.26E+09	34.16796	1.03E+13	1924.000	96.00000	0.165844
Minimum	-1.30E+09	13.55764	-1.59E+13	1923.000	89.00000	0.089633
Std. Dev.	1.21E+09	7.377509	7.40E+12	0.353553	2.449490	0.021413
Skewness	-0.617628	-0.174819	-0.058183	-2.267787	-5.57E-17	0.386441
Kurtosis	2.168669	1.822064	3.187190	6.142857	1.761905	3.406579
Jarque-Bera	0.738990	0.503260	0.016194	10.14966	0.510960	0.254218
Probability	0.691083	0.777532	0.991936	0.006252	0.774545	0.880638
Sum	6.49E+09	198.7110	-2.13E+13	15391.00	740.0000	0.998705
Sum Sq. Dev.	1.03E+19	380.9935	3.84E+26	0.875000	42.00000	0.003210
Observations	7	7	7	7	7	7

Source: E-Views 9.0 Analysis Output, 2020 standard deviation of 0.353 percent. The observed average firm age in the sampled companies is 92.50, with a maximum number of 96.00, a minimum number of 89.00 and a standard deviation of 2.45. The observed average firm leverage in the sampled companies is 0.12, with a maximum number of 0.17, a minimum number of 0.09 and a standard deviation of 0.02. The degree of skewness shows that there is a rise in ESMOOTH, GPM, IFRSCA, FAGE and FLEV except FDI.

The Jarque-Bera (JB) which tests for normality or the existence of outliers or intense values amongst the variables showed that most of the variables are normally spread at 5% level of significance. This means that variables with outliers may not deform our conclusion and are hence dependable for reaching generality. This also implies that the least square estimate can be used to estimate the pooled regression model.

From the findings on the correlation analysis between earnings smoothing, profitability, foreign direct investment and the other independent variables in table 2, the study found that there was positive correlation coefficient between ESMOOTH and two other dependent variables; GPM (0.058), FLEV (0.664), while FDI (-0.703), IFRSCA(-0.146) and FAGE(-0.433) have negative correlation coefficient. Furthermore GPM and FLEV are positively correlated with each other while FDI is negatively correlated with IFRSCA and FAGE at a coefficient factor of -0.706, and -0.158 respectively. However, IFRSCA and FAGE were positively correlated with each other (0.577). This means that Foreign Direct Investment (FDI) had more of negative impact during the post IFRS periods among the sampled companies in Nigeria while other variables like ESMOOTH, GPM, FAGE and FLEV all had positive influence during the periods.

Test of Hypotheses

Hypothesis One

Ho_1: Accounting quality has not significantly improved in the post IFRS periods.

Interpretation of Regression Result

Table 3 revealed an adjusted R^2 value of 0.160. The adjusted R^2, which represented the coefficient of multiple determinations, implied that 16% of the total variation in the dependent variable (ESMOOTH) of sampled companies in Nigeria is jointly explained by the explanatory variables (IFRSCA, FAGE and FLEV). The adjusted R2 of 16% did not constitute a problem to the study because the F- statistics value of 1.443771 with an associated Prob.>F = 0.355190 indicated that the model is fit to explain the relationship expressed in the study model and further suggested that the

Table 2: Correlation Analysis

	ESMOOTH	GPM	FDI	IFRSCA	FAGE	FLEV
ESMOOTH	1	0.05813	-0.70293	-0.14635	-0.43178	0.66350
GPM	0.05813	1	-0.27602	-0.33756	0.45800	0.50746
FDI	-0.70293	-0.27602	1	-0.70594	0.43240	-0.82536
IFRSCA	-0.14635	-0.33756	-0.70594	1	0.57735	-0.06081
FAGE	-0.43178	0.45800	0.43240	0.57735	1	-0.26907
FLEV	0.66350	0.50746	-0.82536	-0.06081	-0.26907	1

Source: E-Views 9.0 Correlation Output, 2020 explanatory variables are properly selected, combined and used. The value of adjusted R2 of 16% also showed that 84% of the variation in the dependent variable is explained by other factors not captured in the study model. This suggested that apart from IFRSCA, FAGE and FLEV there are other factors that mitigate ESMOOTH of quoted companies in Nigeria. The results in table 3 illustrated that FAGE has a negative and not significant relationship with ESMOOTH measured with a beta coefficient (β1) and t- value of -1.64 and -0.75 respectively and p- value of 0.86 which is not statistically significant at 5%: ESMOOTH = -5.17, - 1.64FAGE. While IFRSCA and FLEV have a positive and not significant relationship with ESMOOTH measured with a beta coefficient (β1) and t- value of 2.75 and 0.19; 3.31 and 1.62 respectively and p- value of 0.86 and 0.18 respectively which is not statistically significant at 5%: ESMOOTH = -5.17, FRSCA= 2.75I, FLEV= 3.31. This beta coefficient revealed that if ESMOOTH of the sampled companies increase by one unit, then the independents variable (IFRSCA) and control variables (FAGE and FLEV) would increase by 1.64%, 2.75% and 3.30% respectively. In addition, Durbin-Watson test is implied to check the auto correlation among the study variables. The Durbin-Watson value is 2.371003 which is more than 2 provide an evidence of auto-correlation among the variables.

Decision

Based on the empirical evidence, accounting quality has improved in the post IFRS periods but the improvement was not statistically significant at 5%.

Hypothesis Two

Ho_1: Profitability has not significantly improved in the post IFRS periods.

Table 3: Panel Least Square (PLS) Regression Analysis testing the effect of ESMOOTH on IFRSCA, FAGE and FLEV

Dependent Variable: ESMOOTH
Method: Least Squares
Date: 06/28/20 Time: 14:32
Sample: 2012 2018
Included observations: 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.17E+11	2.80E+12	-0.184421	0.8627
IFRSCA	2.75E+08	1.46E+09	0.187836	0.8601
FAGE	-1.64E+08	2.18E+08	-0.750792	0.4945
FLEV	3.31E+10	2.04E+10	1.622628	0.1800

R-squared	0.519884	Mean dependent var	8.11E+08
Adjusted R-squared	0.159796	S.D. dependent var	1.21E+09
S.E. of regression	1.11E+09	Akaike info criterion	44.80054
Sum squared resid	4.93E+18	Schwarz criterion	44.84026
Log likelihood	175.2022	Hannan-Quinn criter.	44.53264
F-statistic	1.443771	Durbin-Watson stat	2.371003
Prob(F-statistic)	0.355190		

Source: E-Views 9.0 Panel Regression Output, 2020

Table 4: Panel Least Square (PLS) Regression Analysis testing the effect of GPM on IFRSCA, FAGE and FLEV

Dependent Variable: GPM
Method: Least Squares
Date: 06/28/20 Time: 14:34
Sample: 2012 2018
Included observations: 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8032.390	14510.97	0.553539	0.6094
IFRSCA	-4.288549	7.574758	-0.566163	0.6015
FAGE	2.317445	1.128424	2.053701	0.1092
FLEV	230.0403	105.5919	2.178579	0.0949

R-squared	0.652779	Mean dependent var	24.83887
Adjusted R-squared	0.392363	S.D. dependent var	7.377509
S.E. of regression	5.750848	Akaike info criterion	6.643425
Sum squared resid	132.2890	Schwarz criterion	6.683145
Log likelihood	-22.57370	Hannan-Quinn criter.	6.375524
F-statistic	2.506678	Durbin-Watson stat	1.976880
Prob(F-statistic)	0.197897		

Source: E-Views 9.0 Panel Regression Output, 2020

Interpretation of Regression Result

Table 4 revealed an adjusted R^2 value of 0.392. The adjusted R^2, which represented the coefficient of multiple determinations, implied that 39% of all variation in the dependent variable (GPM) of sampled companies in Nigeria is jointly explained by the explanatory variables (IFRSCA, FAGE and FLEV). The adjusted R2 of 39% did not constitute a problem to the study because the F- statistics value of 2.506678 with an associated Prob.>F = 0.197897 indicated that the model is fit to explain the relationship expressed in the study model and further suggested that the explanatory variables are properly selected, combined and used. The value of adjusted R2 of 39% also showed that 61% of the variation in the dependent variable is explained by other factors not captured in the study model. This suggested that apart from IFRSCA, FAGE and FLEV there are other factors that mitigate GPM of the sampled companies in Nigeria. The results in table 4 illustrated that IFRSCA has a negative and not significant relationship with GPM measured with a beta coefficient (β1) and t- value of -4.289 and -0.566 and p- value of 0.601 which is not statistically significant at 5%: While FAGE and FLEV have a positive but not significant relationship with GPM measured with a beta coefficient (β1) and t- value of 2.317 and 2.054; 230.040 and 2.179 and p- value of 0.109 respectively which is not statistically significant at 5%.

This beta coefficient revealed that if the sampled companies GPM increase by one unit, then the independent variable (IFRSCA) and control variables (FAGE and FLEV) would increase by -43%, 23% and 230% respectively.In addition, Durbin-Watson test is implied to check the auto correlation among the study variables. The Durbin-Watson value is 1.976880 which is equal to 2 provide an evidence of auto-correlation among the variables.

Decision

Based on the empirical evidence, Profitability has improved in the post IFRS periods but the improvement was not statistically significantly.

Hypothesis Three

Ho_1: Foreign Direct Investment (FDI) has not significantly increased in the post IFRS periods.

Interpretation of Regression Result

Table 5 revealed an adjusted R^2 value of 0.762. The adjusted R^2, which represented the coefficient of multiple determinations, implied that 76% of all variation in the dependent variable (FDI) of quoted companies in Nigeria is jointly explained by the explanatory variables (IFRSCA, FAGE and FLEV). The adjusted R2 of 76% did not constitute a problem to the study because the F- statistics value of 8.471138 with an associated Prob.>F = 0.033062 indicated that the model is fit to explain the relationship expressed in the study model and further suggested that the explanatory variables are properly selected, combined and used. The value of adjusted R2 of 76% also showed that 24% of the variation in the dependent variable is explained by other factors not captured in the study model. This suggests that apart from IFRSCA, FAGE and FLEV there are other factors that mitigate FDI of quoted companies in Nigeria. The results in table 5 illustrated that IFRSCA and FLEV have a negative and not significant relationship with FDI measured with a beta coefficient (β1) and t- value of -1.79 and -3.75; -1.88 and -2.83 respectively and p- value of 0.02 and 0.05 respectively which is statistically significant at 5%: While FAGE has a positive and not significant relationship with FDI measured with a beta coefficient (β1) 5.95 and t- value of 0.84 and p-value of 0.45 which is not statistically significant at 5%.

This beta coefficient revealed that if FDI of the sampled companies increase by one unit, then the

Table 5: Panel Least Square (PLS) Regression Analysis testing the effect of FDI on IFRSCA, FAGE and FLEV

Dependent Variable: FDI
Method: Least Squares
Date: 06/28/20 Time: 14:35
Sample: 2012 2018
Included observations: 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.43E+16	9.11E+15	3.764713	0.0197
IFRSCA	-1.79E+13	4.76E+12	-3.752458	0.0199
FAGE	5.95E+11	7.09E+11	0.838838	0.4488
FLEV	-1.88E+14	6.63E+13	-2.827768	0.0475

R-squared	0.864008	Mean dependent var	-2.66E+12
Adjusted R-squared	0.762013	S.D. dependent var	7.40E+12
S.E. of regression	3.61E+12	Akaike info criterion	60.97549
Sum squared resid	5.22E+25	Schwarz criterion	61.01521
Log likelihood	-239.9020	Hannan-Quinn criter.	60.70759
F-statistic	8.471138	Durbin-Watson stat	3.347455
Prob(F-statistic)	0.033062		

Source: E-Views 9.0 Panel Regression Output, 2020 independent variable (IFRSCA) and control variables (FAGE and FLEV) would increase by 1.79%, 1.88% and 5.95% respectively. In addition, Durbin-Watson test is implied to check the auto correlation among the study variables. The Durbin-Watson value is 3.347455 which is more than 2 provide an evidence of auto-correlation among the variables.

Decision

Based on the empirical evidence, Foreign Direct Investment (FDI) has significantly increased in the post IFRS periods at 5% level of significance.

Discussion of Findings

Findings of hypothesis one is in line with the finding of Chai et al (2010) who established that many accounting quality proxies became enhanced in the post IFRS periods in European Union. However, the finding of Umobong and Akani did not support the finding of this study as it revealed a drop in accounting quality measured by earnings management, value relevance and timely loss recognition. The study by Latridis (2010) found out that implementing IFRS positively affects financial performance (proxied by profitability and growth indicators). Similarly, the result of Akinleye (2016) study showed that IFRS has positive impact on performance Nigerian banks measured in terms of ROA and ROE. These two results agree with the finding of hypothesis two of this study. The finding of hypothesis three is in agreement with that of Irvine and Luca (2006) whose study disclosed that countries that adopted IFRS experienced huge increases in Foreign Direct Investment (FDI) flows across countries. It is also in line with that of Akpomi and Nnadi (2017), who found that IFRS has positive effect on the flow of FDIs.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

Summary of findings

The following findings emanated from the study:

1) Accounting quality improved in the post IFRS periods but the improvement was not statistically significant at 5% level of significance.
2) Profitability has improved in the post IFRS periods but the improvement was not statistically significantly at 5% level of significance.
3) Foreign Direct Investment (FDI) has significantly increased in the post IFRS periods at 5% level of significance.

Conclusion and Recommendation

In conclusion, IFRS has been found to be relevant to Nigeria as a developing nation. This is evident in the improved accounting quality and profitability of Nigerian companies as well increase in the flow of foreign direct investment in Nigeria. Though the first two findings showed improvement which is not statistical significant, but IFRS has come to stay in Nigeria as it is international best practice for corporate financial reporting and Nigeria cannot disassociate herself from international best practices. The study recommended that the Financial Reporting Council of Nigeria (FRCN) should put in more efforts in monitoring firms' total compliance/ensuring full implementation of IFRS by all companies quoted on the Nigerian Stock Exchange so as to achieve significant improvement in the areas of accounting quality and profitability as well as attain other benefits associated with adoption and full implementation of IFRS.

Contribution to Knowledge

This study brought newness to accounting literature by exploring a different theory i.e. institutional theory which is not consistent with prior studies. It added empirical literature on the relevance of IFRS on Nigerian as a developing country using quantitative data. It also developed models for determining the relevance of IFRS to Nigeria as a developing nation. The study also used gross profit margin as a measure of profitability which is different from the proxies used by previous studies to measure profitability. It showed the relevance of IFRS on Nigeria using a sample of quoted non-financial firms as many related previous studies were done on developed countries.

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Efficiency of Managing Working Capital of Selected Companies in Indian Power Sector during the Post-Liberalization Era

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With the spectacular changes in the business milieu in the post liberalization era, the working capital management (WCM) practices in the Indian corporate sector have also changed radically. Consequently, the efficiency of managing working capital (WC) of the companies in the Indian power sector has witnessed notable changes. In this backdrop, the present study seeks to analyze the efficiency of WCM in the Indian power sector during the period 2003-04 to 2018-19. The sample size of the study consists of five companies which have been selected on the basis of availability of the data for the entire study period from the top seven companies based on market capitalization as per BSE on 13.03.2020. The performance index of WCM, WC utilization index and efficiency index of WCM of the selected companies have been measured using the Bhattacharya Model (1995).While tackling the issue relating to such indices analyzed in this study relevant statistical tools and techniques have been applied.

Keywords: *Working Capital Management, Performance Index of Working Capital Management, Working Capital Utilisation Index, Efficiency Index of Working Capital Management, Indian Power Sector.*

INTRODUCTION

In today's challenging and competitive environment efficient management of working capital (WC) is an integral component of the overall corporate strategy to create shareholders value. To dominate over the operating cycle odds, not only the corporate giants but almost all the business enterprises, irrespective of their sizes, have been concentrating much on the efficient management of WC. Due to the changes brought out by the liberalization of economy, a large number of companies in India which had grown exponentially over the years in a virtually non-competitive environment have started facing increasingly severe competition (Jafar& Sur, 2006). Therefore, a paradigm change in the Indian power sector has also become inevitable to meet the new challenges. The companies operating in this sector have been forced to reorient their strategies for managing their WC in the post-liberalisation era. Some of them have been able to adopt themselves to the new situation while others could not so reorient. In this backdrop, the present paper attempts to analyse the efficiency of working capital management (WCM) in the Indian power sector during the period 2004-05 to 2018-19.

The remainder of the paper is organized as follows. Section II deals with review of related literature.

Section III narrates the objectives of the study. Section IV explains the methodology adopted in this study. Section V discusses the empirical results. In section VI concluding observations are presented.

REVIEW OF RELATED LITERATURE

Before setting the objectives of a study it is necessary to review the existing literature on the issue connected with the study and to ascertain the research gaps. The following paragraphs in this section present a brief description of some of the notable studies carried out in the recent past in India and abroad on the topic addressed in the present paper and the last paragraph in this section deals with the identification of the research gaps.

Shanthi and Eslavat (2014) conducted a study on the liquidity management of Andhra Pradesh Power Generation Corporation Limited for the period 2000-01 to 2011-12 using ratio analysis technique. The study revealed that the liquidity of the company failed to make any notable contribution towards the ability of the company to meet its short term obligation during the period under study.

Satapathy and Panda (2015) in their study analysed the efficiency of WCM of Odisha Power Transmission Corporation Limited by using conventional ratios for the period 2007-08 to 2011-12. The study observed that the company was able to achieve efficiency in its WCM during the study period.

Azhar (2015) in his study examined the impact of liquidity and managerial efficiency on profitability of 23 selected power distribution utilities in India for the period 2004-05 to 2013-14. In this study generalized least square regression was used where return on capital employed representing overall profitability was taken as the dependent variable while current ratio, quick ratio, absolute cash ratio, debtors turnover ratio, creditors turnover ratio, collection efficiency, interest coverage ratio was considered as the independent variables. The study revealed that only debtors turnover ratio, collection efficiency and interest coverage ratio showed significant impact on the profitability of the sample utilities during the study period.

Dilli.et.al. (2016) in their study on the WCM of Transmission Corporation Ltd. of Andhra Pradesh, attempted to analyse each component of WC as well as the impact of WC on the profitability of the company during the period 2004-05 to 2013-14 by using ratio analysis technique. The study showed that positive impact of WC ratios of the company on its profitability was noticed during the period under study.

Kasiran et.al.(2016) in their study attempted to analyze the efficiency of WCM in 24 small medium sized companies listed in the Suruhanjaya Syarikat Malaysia which were selected from the SME Corp website for the period 2010 to 2013. While analyzing the efficiency of WCM of the selected companies three indices, namely performance index of WCM, WC utilization index and efficiency index of WCM were used. The study revealed that the efficiency of managing WC of the selected companies was not at all satisfactory during this study period.

Azhar (2017) carried out a study to make a comparison between private and state owned power distribution utilities in terms of liquidity, managerial efficiency, solvency and profitability for the period 2004-05 to 2014-15 by using ratio analysis technique. The study observed that the performances of liquidity, managerial efficiency, solvency and profitability of both the private and state owned utilities were found to be unsatisfactory during the period under study.

Another study conducted by Azhar (2017) attempted to identify the factors influencing working capital requirement of 23 selected power distribution utilities in India. While selecting the companies judgmental sampling method was used. The study was based on primary data which were collected using questionnaire from two general managers in finance and accounting department of each of the sample power distribution utilities in India. The study found that in the selected power distribution utilities the industry effect, economic environment, government rules & regulations, credit policy, inventory management policy, and payable policy were established as the major influencing factors of WCM during the period under study.

Islam and Mili (2018) in their study attempted to evaluate the WCM practices of three selected power sector companies in Bangladesh for the period 2010 to 2015. It was found from the descriptive statistics of the five selected WCM indicators, such as quick ratio, cash to current liability, inventory turnover, receivable turnover, and cash conversion cycle as analyzed in this study that the WCM practices of the selected companies were more or less satisfactory over the study period though there was a scope to make investment of the excess working capital in profitable investment opportunities. The outcomes which were derived from the analysis of the selected WCM indicators as made in the study by applying t-test and ANOVA technique indicated that the differences among the WCM practices of the sample companies were significant over the study period.

A good number of studies on the analysis of various aspects of WCM were carried out in India and abroad during the last few decades while a considerable number of studies on the efficiency of WCM relating to the corporate sector in India and abroad were also made during the post-liberalization era. By a careful scrutiny of the studies as reviewed in this section it can be inferred that though a very few studies on the WCM of some selected firms belonging to the power sector were conducted both in India and abroad, no in-depth study on the efficiency of WCM in the Indian power sector during the post-liberalization period was made. In order to bridge the gap, it is, therefore, high time to deal with the issue relating to the analysis of efficiency in WCM of the Indian power sector during the post-liberalization era.

Objective of the study:

- The present study was conducted with the following objectives:
- To study the performance index of WCM of the selected companies.
- To evaluate the WC utilisation index of the companies under study.
- To analyse the efficiency index of WCM of the selected companies.
- To measure the degree of uniformity among the companies under study in respect of each of the selected WCM efficiency parameters, such as performance index, utilisation index and efficiency index of WCM.
- To examine whether the deviation of each of the selected WCM efficiency parameters from its industry average in each of the companies under study was noticeable.

METHODOLOGY OF THE STUDY

Selection of Sample: The present study was conducted by taking five companies out of the top seven companies in Indian power sector based on Market Capitalisation as per BSE on 13th March, 2020. The top seven companies are (i) NTPC Ltd., (ii) Power Grid Corporation of India Ltd., (iii) NHPC Ltd., (iv) Adani Transmission Ltd., (v) Torrent Power Ltd., (vi) Adani Power Ltd., (vii) Tata Power Company Ltd. Adani Transmission Ltd. (incorporated on 9th December, 2013) and Torrent Power Ltd. (incorporated on 1st October, 2015) are newly formed companies whereas the other five companies are old ones which were incorporated in the last century. So, the data for the entire study period relating to these two newly constituted companies were not available. Thus, in this study these two companies were excluded and other five companies were considered at the time of choosing the sample companies.

Period of Study: The period 2003-04 to 2018-19 was taken as the period under study. Though the liberalization process started in India during the financial year 1991-92, several reform measures relating to the Indian power sector were initiated by the Central Government during the period 1991 to 2003. The notable events of Indian power sector reforms which took place during the period 1991 to 2003 are opening up of private investment in power generation (1991), introduction of mega power policy and competitive bidding process (1992-95), issue of guidelines for establishment of Regulatory Commission (1996), introduction of Electricity Regulatory Commission Act and Electricity Law (Amendment) Act to allow private participation in transmission (1998-99), Electricity Act, 2003 etc. Thus, in this study the financial year 2003-04 was considered as the initial year of the study period.

Collection of Data: The data of the selected companies for the period 2004-05 to 2018-19 used in this study were collected from secondary sources, i.e. 'Capitaline Corporate Database' published by Capital Market Publishers India Pvt. Ltd., Mumbai.

Analysis of Data: While measuring the efficiency of WCM of the companies under study the Efficiency Index of WCM (EI_{WCM}) as developed by Bhattacharya (1995) was applied. According to the Bhattacharya Model, EI_{WCM} represents the product of Performance Index of WCM (PI_{WCM}) and Working Capital Utilisation Index (UI_{WCM}), i.e. $EI_{WCM} = PI_{WCM} \times UI_{WCM}$. This formula was followed in the present study to arrive at the EI_{WCM} of the selected companies. In this study PI_{WCM} of each of the companies was ascertained by applying the following formula:

$$\text{Performance Index } (PI_{WCM}) = \frac{I_s \sum_{i=1}^{N} \frac{W_{i(t-1)}}{W_{it}}}{N}$$

Where I_s = Sales index = $\frac{St/}{(St\text{-}1)}$

Wi= Individual group of current assets

N= Number of current asset group

i = 1, 2, 3……., N.

Similarly, UI_{WCM} of each of the selected companies was measured in this study using the following formula:

$$\text{Working capital utilisation index } (UI_{WCM}) = \frac{A_{t-1}}{A_t}$$

Where A= Current assets/Sales.

In this study, the current assets group of each of the companies under study was divided into seven different components, namely debtor, store and spares, goods-in-transit, other inventory, advances to suppliers, cash and other current assets.

For the purpose of analyzing the performance index of WCM, WC utilization index and efficiency index of WC, simple statistical tools like arithmetic mean and consistency coefficient (i.e. ratio of arithmetic mean to standard deviation), statistical techniques like linear trend analysis, analysis of Kendall's coefficient of concordance and statistical tests like t-test, Chi-square test and Sandler's A test were used at appropriate places. In this study, the average value of each of the selected efficiency parameters of the companies under study was considered as its industry average.

EMPIRICAL RESULTS AND DISCUSSION

Performance Index of WCM (PI_{WCM}): It indicates the average value of the performance indices of the different components of current assets. This index measures the overall performance of a company in managing the different components of its current assets. If the value of PI_{WCM} exceeds 1, then it implies that the performance of the company in managing its current assets is considered satisfactory. So, the higher the value of PI_{WCM}, the better is the performance of current assets of the company.

In Table 1, an attempt was made to analyse the performance of WCM of the selected companies using PI_{WCM}. This table shows that the PI_{WCM} values of NTPC and Power Grid were greater than one in all the years under study and in NHPC the values of PI_{WCM} were greater than one in almost all the years (except in 2013-14) of the study period. However, in Adani Power and Tata Power the PI_{WCM} values were less than one in seven years and four years under study respectively. The mean PI_{WCM} was the highest in Power Grid (2.136) and it was followed by NHPC (1.724), NTPC (1.702), Tata Power (1.541) and Adani Power (1.331) respectively in that order whereas the consistency coefficient (CC) of NTPC was the maximum (3.066), followed by Power Grid (3.042), NHPC (3.066), Adani Power (2.173) and Tata Power (2.036) respectively in that order. Based on both average and consistency aspects of PI_{WCM}, Power Grid captured the top-most position and it was followed by NTPC and NHPC respectively in that order. However, both Adani Power and Tata Power were placed on the last bench. Table 1 also discloses that the slope of trend line of PI_{WCM} was positive and found to be statistically significant in Adani Power only while it was negative and found to be statistically significant in NHPC and Tata Power. However, the slopes of the trend lines of PI_{WCM} of NTPC and Power Grid were negative which were not found to be statistically significant.

Working Capital Utilisation Index (UI_{WCM}): It measures the degree of WC that has been utilised by a company to generate its sales revenue. A value of UI_{WCM} greater than one is desirable. The higher the value of UI_{WCM}, the higher is the company's ability to generate sales revenue by utilizing its current assets.

In Table 2, an effort was made to analyse the utilization of WC of the companies under study using the UIWCM. This table depicts that the values of UIWCM were greater than one in almost all the years (except in 2010-11 and 2015-16) under study whereas in NTPC, NHPC, Adani Power and Tata Power the values of UIWCM were less than one in six years, seven years , eight years and seven years respectively out of the fifteen years under study. The mean UIWCM was the highest in Power Grid (2.183) and it was followed by NTPC (1.178), Adani Power (1.165), Tata Power (1.024) and NHPC (0.952) respectively in that order while the CC of UIWCM was the maximum in NTPC (1.685), followed by Tata Power (1.625), NHPC (1.481), Adani Power (1.352) and Power Grid (1.109) respectively in that order. Considering both the mean and CC of UIWCM, NTPC occupied the highest rank, followed by Power Grid and Tata Power (which jointly occupied the second rank), Adani Power and NHPC respectively in that order. Table 2 also shows that the slopes of the trend lines of UIWCM were negative in NTPC, Power Grid and NHPC whereas in Adani Power and Tata Power the slopes of UIWCM lines were positive, all of these positive and negative slopes were not found to be statistically significant.

Efficiency Index of WCM (EI_{WCM}): It measures the efficiency of managing WC of a company. It is the product of PI_{WCM} and UI_{WCM}. If there is a more than proportionate rise in current assets with the increase in sales, the cost associated with the company also goes up, both in terms of blockage of additional capital and the associated cost of capital. A company cannot be said to have an efficient WCM if the proportionate increase in current assets is greater than proportionate increase in sales revenue (Bhattacharya, 1995). The higher the value of EI_{WCM}, the higher is the efficiency of managing WC of the company.

In Table 3, it was attempted to analyse the efficiency of WCM of the selected companies by applying EI_{WCM}. This table discloses that the values of EI_{WCM} of NTPC varied between 0.05 (2015-16) and 3.65 (2011-12). On an average, it was 1.97 and its CC was 1.83. The linear trend fitted to the EI_{WCM} series of NTPC exhibits a downward trend and the slope of this line was not found to be statistically significant. Similarly, the EI_{WCM} values of Power Grid ranged between 0.96 (2010-11) and 16.67 (2006-07). The average and CC of EI_{WCM} of the company were 4.28 and 1.09 respectively. The straight line trend fitted to the EI_{WCM} series of Power Grid shows a declining trend which was not found to be statistically significant. The EI_{WCM} values of NHPC, Adani Power and Tata Power fluctuated between 0.04 (2016-17) and 4.28 (2004-05), between 0.05 (2017-18) and 6.70 (2011-12) and between 0.03 (2014-15) and 3.20 (2005-06) respectively. The mean values of EI_{WCM} of these three companies were 1.64, 1.61 and 1.36 respectively and the CC values were 1.23, 0.92 and 1.78 respectively. The linear trend equations fitted to the EI_{WCM} series of NHPC and Tata Power disclose downward trend whereas the same relating to Adani Power reveals an upward trend. Out of these three, only the slope of the EI_{WCM} line of NHPC was found to be statistically significant. Table 3 also shows that in respect of the combined score ascertained on the basis of both average and CC of EI_{WCM}, NTPC captured the top-most position and it was followed by Power Grid, NHPC, Tata Power and Adani Power respectively in that order.

In Table 4, for the purpose of measuring the degree of uniformity among the selected companies in respect of each of the selected parameters, such as PIWCM, UIWCM and EIWCM, Kendall's Coefficient of concordance (W) was used. In order to examine whether the computed values of W were statistically significant or not Chi-square test was used. This table shows that the computed values of W_{PI} (W in respect of PI_{WCM}), WUI (W in respect of UI_{WCM}) and W_{EI} (W in respect of WI_{WCM}) were 0.3756, 0.3559 and 0.3392 respectively which were found to be statistically significant at 0.05 level. It reveals that there was a close as well as significant association among the selected companies in respect of all the three parameters such as PI_{WCM}, UI_{WCM} and EI_{WCM} during the study period.

In Table 5, in order to examine whether the deviations between the PI_{WCM} and its industry average, the deviations between UI_{WCM} and its industry average and the deviations between EI_{WCM} and its industry average in each of the selected companies were significant or not, Sandler's A test and ' sum of absolute deviations' were applied. This table shows that the computed values of Sandler's A were found to be statistically significant at 0.05 level in all the three cases of Power Grid only and in only one case (i.e. the deviations between EI_{WCM} and its industry average) of Tata Power. In other cases, the computed values of Sandler's A were not found to be statistically significant. Table 5 also discloses that the 'sum of absolute deviations of the PI_{WCM} from the industry average' was the least in NTPC (0.226) and it was followed by NHPC (0.556), Tata Power (2.184), Adani Power (5.334) and Power Grid (6.736) respectively in that order while the 'sum of absolute deviations of the UI_{WCM} from the industry average' was the minimum in NTPC (1.836), followed by Adani Power (2.036), Tata Power (4.146), NHPC (5.226) and Power Grid (13.244) respectively. This table also depicts that the 'sum of absolute deviations of the EI_{WCM} from the industry average' was the lowest in NTPC (3.017), followed by NHPC (7.954), Adani Power (8.417), Tata Power (12.187) and Power Grid (31.576) respectively in that order. It indicates that not only insignificant variation between the efficiency of WCM and the industry average in almost all the companies (except in Power Grid) was observed but also confirms that the highest efficiency in managing short term fund investment on the part of NTPC was noticed during the period under study.

CONCLUDING OBSERVATIONS

Power Grid established itself as the best performer among the selected companies in Indian power sector in respect of performance index of WCM while Adani Power and Tata Power were placed on the last bench in this respect during the period under study. However, strong evidence of upward trend in the performance of Adani Power in managing the different components of its current asset was noticed during the study period. A notable declining trend in the performance of the different components of current assets was observed in both NHPC and Tata Power during the period under study.

NTPC was recognized as the best performer among the companies under study in respect of efficient utilization of current assets whereas NHPC was placed in the last rank during the study period. No significant rising or downward trend in the efficiency of utilizing current assets in any of the selected companies was observed during the period under study.

NTPC proved itself as the best performer among the five selected companies in Indian power sector in respect of efficiency in managing WC and it was followed by Power Grid, NHPC, Tata Power and Adani Power respectively in that order during the study period. This study also reveals that there was a noticeable declining trend in the efficiency of managing WC of NHPC during the period under study.

Another notable outcome of the study is that a notable degree of uniformity among the selected companies in respect of all the three selected aspects of WCM as suggested in the Bhattacharya Model, such as average performance of managing the different components of current assets (as reflected by PI_{WCM}), efficiency of utilization of current assets (as indicated by UI_{WCM}) and efficiency of managing WC (as shown by EI_{WCM}) was observed during the study period.

The study not only discloses the insignificant deviation of the efficiency of managing WC of almost all the selected companies from the industry average but also again confirms that the highest efficiency in managing WC was achieved by NTPC during the period under study.

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Table 1: Performance Index of WCM of the Selected Companies in Indian Power Sector					
Year	**NTPC**	**Power Grid Corp**	**NHPC**	**Adani Power**	**Tata Power**
2004-05	2.140	2.890	2.040	0.830	2.020
2005-06	2.590	1.230	2.590	0.920	3.520
2006-07	1.630	2.100	1.470	0.910	0.750
2007-08	1.890	2.960	2.010	0.950	1.930
2008-09	1.620	2.610	3.010	0.820	1.780
2009-10	1.180	1.580	1.960	0.800	1.150
2010-11	1.730	3.010	2.160	1.060	2.240
2011-12	1.240	1.030	1.570	2.190	1.960
2012-13	2.930	2.820	1.030	1.250	1.010
2013-14	1.980	2.520	0.870	2.460	0.830
2014-15	1.040	1.180	1.170	0.870	1.050
2015-16	1.050	2.050	1.430	1.220	1.160
2016-17	1.180	2.720	1.860	1.350	0.880
2017-18	1.470	1.690	1.550	1.820	1.960
2018-19	1.860	1.650	1.140	2.520	0.880
Average	**1.702**	**2.136**	**1.724**	**1.331**	**1.541**
CC	**3.066**	**3.042**	**2.910**	**2.173**	**2.036**
Slope of linear trend	**-0.047**	**-0.032**	**-0.078**	**0.086**	**-0.085**
t-value	**-1.484**	**-0.759**	**-2.608***	**2.925***	**-2.098****
Rank based on average	**3**	**1**	**2**	**5**	**4**
Rank based on CC	**1**	**2**	**3**	**4**	**5**
Sum of Ranks	**4**	**3**	**5**	**9**	**9**
Final Rank	**2**	**1**	**3**	**4.5**	**4.5**
***Significant at 5 per cent level**					
****Significant at 10 per cent level**					

Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers (I). Ltd, Mumbai

Table 2 : WC Utilisation Index of the Selected Companies in Indian Power Sector					
Year	**NTPC**	**Power Grid Corp**	**NHPC**	**Adani Power**	**Tata Power**
2004-05	1.120	1.340	2.100	0.870	0.780
2005-06	0.810	1.750	0.790	0.910	0.910
2006-07	1.590	7.940	1.760	1.010	1.460
2007-08	1.830	2.330	0.070	0.960	0.390
2008-09	0.550	1.140	1.270	1.160	1.090
2009-10	1.380	1.650	1.540	1.030	1.550
2010-11	0.430	0.320	0.910	0.070	0.510
2011-12	2.940	4.870	0.160	3.060	0.220
2012-13	1.000	1.250	1.210	1.760	1.850
2013-14	1.020	1.050	1.180	0.510	1.220
2014-15	0.870	3.230	0.750	2.830	0.030
2015-16	0.050	0.580	0.100	0.710	1.350
2016-17	1.560	2.840	0.020	0.900	1.310
2017-18	0.800	1.430	1.060	0.030	0.450
2018-19	1.720	1.030	1.360	1.660	2.240
Average	**1.178**	**2.183**	**0.952**	**1.165**	**1.024**
CC	**1.685**	**1.109**	**1.481**	**1.352**	**1.625**
Slope of linear trend	**-0.008**	**-0.109**	**-0.050**	**0.016**	**0.029**
t-value	**-0.191**	**-0.924**	**-1.351**	**0.291**	**0.751**
Rank based on average	**2**	**1**	**5**	**3**	**4**
Rank based on CC	**1**	**5**	**3**	**4**	**2**
Sum of Ranks	**3**	**6**	**8**	**7**	**6**
Final Rank	**1**	**2.5**	**5**	**4**	**2.5**
***Significant at 5 per cent level**					
****Significant at 10 per cent level**					

Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers (I). Ltd, Mumbai

Table 3 : Efficiency of WCM Index of the Selected Companies in Indian Power Sector

Year	NTPC	Power Grid Corp	NHPC	Adani Power	Tata Power
2004-05	2.40	3.87	4.28	0.72	1.58
2005-06	2.10	2.15	2.05	0.84	3.20
2006-07	2.59	16.67	2.59	0.92	1.10
2007-08	3.46	6.90	0.14	0.91	0.75
2008-09	0.89	2.98	3.82	0.95	1.94
2009-10	1.63	2.61	3.02	0.82	1.78
2010-11	0.74	0.96	1.97	0.07	1.14
2011-12	3.65	5.02	0.25	6.70	0.43
2012-13	2.93	3.53	1.25	2.20	1.87
2013-14	2.02	2.65	1.03	1.25	1.01
2014-15	0.90	3.81	0.88	2.46	0.03
2015-16	0.05	1.19	0.14	0.87	1.57
2016-17	1.84	7.72	0.04	1.22	1.15
2017-18	1.18	2.42	1.64	0.05	0.88
2018-19	3.20	1.70	1.55	4.18	1.97
Average	**1.97**	**4.28**	**1.64**	**1.61**	**1.36**
CC	**1.83**	**1.09**	**1.23**	**0.92**	**1.78**
Slope of linear trend	**-0.051**	**-0.272**	**-0.171**	**0.101**	**-0.051**
t-value	**-0.781**	**-1.172**	**-2.52***	**0.968**	**-1.123**
Rank based on average	**2**	**1**	**3**	**4**	**5**
Rank based on CC	**1**	**4**	**3**	**5**	**2**
Sum of Ranks	**3**	**5**	**6**	**9**	**7**
Final Rank	**1**	**2**	**3**	**5**	**4**

***Significant at 5 per cent level**

****Significant at 10 per cent level**

Source: Compiled and computed from Capitaline Corporate Database Of Capital Market Publishers (I). Ltd, Mumbai

Table 4 : Analysis of Uniformity among the Selected Companies in Indian Power Sector		
Measure / Criterion	Kendall's Coefficient of Concordance (W)	Chi-square Value
PIWCM	0.3756	26.292*
UIWCM	0.3559	24.913*
EIWCM	0.3392	23.744*
*Significant at 5 per cent level		

Source: Compiled and computed from Capitaline Corporate Database Of Capital Market Publishers (I). Ltd , Mumbai

Table 5 : Analysis of Deviation of each of the Selected WCM Efficiency Parameters from its Industry Average in the Selected Companies in Indian Power Sector			
Indicator / Company	Deviation of PI_{WCM} from Industry average	Deviation of UI_{WCM} from Industry average	Deviation of EI_{WCM} from Industry average
NTPC	46.21	1.07	1.10
Power Grid	0.18*	0.24*	0.21*
NHPC	10.87	0.38	0.57
Adani Power	0.31	1.67	0.62
Tata Power	1.06	0.59	0.22*
Indicator / Company	Sum of absolute deviations of PIWCM from Industry average	Sum of absolute deviations of UIWCM from Industry average	Sum of absolute deviations of EIWCM from Industry average
NTPC	0.226	1.836	3.017
Power Grid `	6.736	13.244	31.576
NHPC	0.556	5.226	7.954
Adani Power	5.334	2.036	8.417
Tata Power	2.184	4.146	12.187
*Significant at 5 per cent level.			

Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers (I). Ltd, Mumbai

Financial Therapy: Eliciting the Fine Points and Professional Preconditions of An Evolving Field

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Financial therapy is a swiftly evolving field of research and application. Still only a handful amount of research is presently available especially on the subject matter of financial therapy. The term financial therapy is open to multi-dimensional deliberations. As already mentioned that literature on financial therapy is yet out-of-print owing to the nascent phase of this area of knowledge and research, the fact is that most of the literature currently available is mostly concentrated on the procedures and subjects associated to the notion of, but not truly the term financial therapy, are more often accessible. The available literature also varies in the thoughts and conclusions on how financial therapy can be and should be looked. Many professionals belonging to the field of financial and mental health have figured out striking similarities between their disciplines. Quite a few researches conducted over the years reveal that financial planners dwell approximately 25% of their time finding solutions to non-financial issues. According to the Financial Therapy Association "Financial therapy is a process informed by both therapeutic and financial competencies that helps people think, feel, and behave differently with money to improve overall well-being through evidence-based practices and interventions. With this combined approach informed by both therapeutic and financial competencies, financial therapists are equipped to help people reach their financial goals by thoughtfully addressing financial challenges, while at the same time, attending to the emotional, psychological, behavioral, and relational hurdles that are intertwined". In this research paper a candid attempt has been made to come up with future prospects of the emerging field called financial therapy in a country like India and what are the prerequisites of becoming a successful financial therapist.

Keywords : *Financial Therapy, Financial Health, Financial Coaching, Psychotherapy, Behavioral Finance*

INTRODUCTION

The sustained economic trepidation makes it imperative for the professionals from the field of commerce and management, especially under learning programs, to educate scholars on ways to harness their learning, exercitation and abilities to encourage economic and social rectitude and to generate enterprise level transformation on varied magnitude, in diverse circumstances, and with subscribers in numerous economic footing. In order to create syllabus related components which can assist faculties and disseminate information to the marginalized populations, trainers and faculties must first rightly comprehend the subject of financial literacy particularly the scholars belonging to the area of management education.

Everywhere around the globe, commonalty is giving up even on the hours designated for their lunch and speeding from the place of employment to attend their appointment with a therapist. Yet in present day's precarious financial times, quite a few of these sessions have now shifted their focus upon an absolutely exclusive focal point which is dealing with financial baggage. Financial therapy modulates age-old financial consultation with a more significant and familiar psychological research regarding the driving force behind a common man's behavior with his money. The accredited experts who provide solutions to these type of problems by means of counseling are referred to as financial therapists, and they are entrusted with figuring out the mental triggers and psychological foundations that can force masses to make erroneous—and more often than not naturally so—money decisions. Self-destructive or inefficacious financial behaviors have little to do with how much money people have. Whether we have a little money or a lot, our relationship with money can be a source of grave pain and pernicious disorder. At such a juncture financial therapy can come to rescue. A lot of people still are unaware of this curious branch of therapy. The Financial Therapy Association came into existence in 2010—although it could only assemble nearly 300 associates by 2011. Financial therapy can be differentiated from routine psychotherapy through the fact that financial therapy is centralized on reforming the entire financial welfare situation through the understanding and analysis of many relevant cognitive, relational, economic and integrative aspects of financial soundness. In system, it assimilates financial referral and tactics with personal admonishment, wedding and household therapy, anthropology, social work, and, most significantly, psychology. Further, quality financial therapy occurs in complete complicity with professionals from the field of finance, for example tax specialists and investment consultants.

The rapidly growing area of financial therapy involves financial projection, financial consultancy, family therapy, psychology, social work and life coaching. Given that most of the defiance at some level is unavoidable, it is highly significant to ensure that generality realizes the very fact that they have a say in the descent of this ever evolving professional field. Further, it is also important to lay adequate emphasis on the similarities and a common vision, whereas still permitting all involved professions to hold onto their eccentricity. But it is also true that errors will be committed, descriptions will emerge overtime and the advancement proceedings will surely be time consuming.

REVIEW OF LITERATURE

- J Grable, S McGill, S Britt (2010) put forth a brief historical review which highlights the dreams of a few visionary thinkers came to fruition by working together to jointly build a structure to house the work of financial therapists. Continuing to build a bridge of collaboration between practitioners and researchers will be an ongoing challenge, but one well worth the effort. Given the positive (and overwhelming) response to the establishment of the FTA, both in the practitioner and academic communities, bodes well for the future of the Association. The Board of Directors is excited to invite you, as a reader of the Journal of Financial Therapy, to join with your colleagues in building a new professional home for financial therapists.
- J Gale, J Goetz, S Britt (2012) invite scrutiny and deliberations to extend, and potentially even expedite, the positive evolution of the emerging profession of financial therapy and the newly formed Financial Therapy Association (FTA). Varying perspectives are provided by reviewing another association’s challenges when implementing cross-disciplinary collaboration and a unique identity. Ten considerations are provided in the development of financial therapy as a professional practice, which are designed to be starting points for facilitating the strong development of this emerging profession and new association. Exercises are provided to assist professionals in recognizing similarities and differences between their profession and others represented in the membership of FTA.
- B Klontz, SL Britt, J Mentzer (2011) argue that as per the viewpoint of financial counselors, financial therapists, financial coaches, and educators, it seems that younger individuals in particular are most likely to hold potentially

destructive beliefs about money. This may influence their ability to attain financial goals and independent financial security. Practitioners may want to administer the Klontz -MSI to clients as a quick screening tool to identify potential problem areas with money. As shown in the results, individuals who adhere to the avoidance, worship, and/or status subscales are more likely to have lower levels of education, income, and net-worth. It is not possible to determine whether the money beliefs precede education and income attainment or whether the lower levels of education and income lead to certain beliefs about money. It is simply known that there is an association between them to be aware of in working with clients around money.

- M Gillen & DN Loeffler (2012) conclude that the financial and political situation of the initial 21st century has been full of clamour. Faced with monetary downturn, rate cutbacks in social processing, and an expanded insistence on personal answerability, there is an increased want for educational institutions to put together graduates in human offerings and economic undertakings to be proficient financial professionals. Enlightening society regarding the phenomenon of economic administration and personal finance is an essential element of this system. Moreover, by enhancing choices for economic social work program, certificates and syllabus related material, there will be an elevated attention and usage of financial therapy and professionals involved in financial planning; as a result, giving rise to a unified multifarious body of workers that can adequately meet the requirements of clients.
- MA McCoy, DB Ross, JW Goetz (2013) point out that there exists an urgent need for the unfolding of greater structures and techniques for conveying varied interventions pertaining to financial therapy which are tailor-made to upgrade financial demeanour and ability to take decisions. There is also a vigorous requirement to augment the information of the emerging area called financial therapy by ensuring expansion in financing, scripting and research. A means of doing this can be by equipping professionals with both models and methods to carry out financial therapy related interventions into their professional proceeding to serve their clients in a more efficient way. Descriptive financial therapy is a comprehensible, combined, abstract-based, and non-automated approach for psychic wellbeing and also for professionals belonging to financial planning so that they can use their work for clients. Nonetheless, upcoming research and experimental confirmation is required to back this approach to further rationalize its application.
- JP Dew & JJ Xiao (2013) have inferred that their study contributes to the literature in a number of ways. It is the first study that we are aware of that used a national survey to examine the associations among financial problems during the 2007 – 2009 Recession, financial management behaviours, and relationship happiness. It also included both married couples and cohabiting couples. Further, it is one of the first studies to demonstrate that financial behaviours are associated with relationship happiness. Hopefully future studies will continue to examine the relationship between financial behaviours and relationship quality. The insights garnered from such studies would be particularly useful both to researchers and to practitioners who work with couples.

OBJECTIVES

- To expound the notion called Financial Therapy.
- To understand the reasons which damage the

financial health of Indian people.

- To comprehend the global Financial Therapy scenario.
- To clarify the difference between financial therapy and financial coaching.
- To clarify the issues involved in expansion of financial therapy as a profession.

RESEARCH METHODOLOGY

Methodology is of great importance in any activity related to research and research design represents the plan of action for the research being carried out. In the above context the current research paper adapts an exploratory research design. The author has made an in-depth literature review and has particularly gone through various kinds of literature like financial journals, investment related blogs and websites available on varied platforms. Although being a nascent subject literature on financial therapy is still scarce. The author has also consulted Financial Experts and Investment Advisors of quality and caliber but as already stated that since the subject is still in its nascent stage from the standpoint of business research. The thoughts and views of many experts have been given a place in the paper at various places.

ISSUES DAMAGING THE FINANCIAL HEALTH OF INDIAN FAMILIES

- Spouses don't deliberate about their mutual goals

  Even today in most Indian family's people basically do not talk about the shared goals with their spouses – and even if they do, it is largely just knocking heads because their objectives are rarely in calibration. Normally both have unclear intentions regarding having kids and possessing a house, but anything over and above it – and anything exclusive to either of these aforementioned issues – vary markedly between both of them. Further, people rarely deliberate with their partners and discuss about where they wish to see themselves in a time span of five years, ten years or for that matter in twenty-five years. Not very often do they gauge what they want personally, and then take cognizance of the fields where they extend beyond, although what is actually needed here is to concede a little and turn up with comprehensive plans for things that are mutually desired by both and for which both are willing to work in sync.

- Absence of a budget or consumption bar, especially on immaterial items

  In today's world failure in keeping an imprint of – and taking management of – one's expenditures on non-essential products are nothing short of a financial crime. Quite a lot of people naturally don't take enough pain to regularly check their disbursements on a lot of objects in any way or form, and they are more often perturbed at the huge quantity of money measly spent at the time when credit card bill becomes overdue. But they settle it and lose sight of it yet again. While sticking to the budget requires honesty and commitment from all members, there always exists a need to concede to a spending limit for all members of the family and taking up any further spending post that.

- No fund for emergency or disability

  Quite a lot of people are oftentimes entirely oblivious to expenses beyond their expectations. It eventually turns into a catastrophe if the vehicle they have bought ceases to function or they give up on their livelihood. The result is instant mode of overwhelming fear. Now if we enquire with any lay man on what will they do if the main bread earner of the home abruptly passes away or becomes seriously wrecked, what you will often see is a panicked "deer in the headlights" look. Further we observe, almost everyone hears from many people who are undergoing severe troubles post the incompetence or decease of a significant wage earner.

- Prevalence of anti-prudence i.e. pro-consumerism perspective

  Quite a few people figure themselves out abstaining thrift. They mostly subscribe to the thought which states "you only live once" and that "settling" for the best available substitute or the least costly alternative is not a plausible option. People who give credence to this fact are often put under strain from their peers to undertake expenditures and then the same people pass on the pressure to others for behaving the same – one cannot survive economically if he/she chooses to be live like that of girls/boys. But while many do not realize the repercussions of their extravagant and flamboyant lifestyle earlier, later financial distress begins to take a toll upon them. Now if you are going through economic hardships, getting over this lapse is definitely significant – ultimately, when anybody is only some steps away from shut out or insolvency, every penny counts more than anything else.

- Most acquirements are financed through debt and are often bought hastily without research

  With increasing per capita income and incremental job opportunities particularly in the private sector the desire to lead a luxurious lifestyle has also seen a rise manifold. This has translated into the figures of rising sales of millions of new automobiles every year, although only a handful of buyers can actually spare to pay for them in monetary terms. Nonetheless, the failure to pay cash for a new automobile signifies the impotence to sustain the automobile. All in all, the ability to catch up on the payment part does not actually signify the capability to afford the automobile. Moreover, by loaning funds to purchase an automobile, the buyer has to pay interest on a kind of asset which depreciates; this magnifies the gap between the value derived from automobile and the monetary price disbursed for it. Worse yet, a lot of people transact in vehicles every three or four years and eventually end up losing money on all their trades.

- Failure in Investment diversification

  The last worry which is mostly heard is that commoners are thoroughly panic stricken by the slowdown in the global equity market and have witnessed their savings reserved for retirement lose 25-40% of its value over the previous year. This is particularly correct for those who are nearing their age of retirement – losing 40% of the retirement fund in the years just preceding retirement implies that they will have to work for a longer span of time than usual. In India particularly the retail investors with relatively smaller savings are not so much into the equity markets and their exposure to financial instruments is still quite low when compared with other countries while the major chunk of investments going into the real estate. This makes the overall investment picture in India less diversified.

GLOBAL FINANCIAL THERAPY SCENARIO

Money has highly significant meanings to different people such as security, peace of mind, well-being, freedom, love, strength, power, control, anxiety, helplessness, fear etc. Whether it is anxiety with reference to payment of invoices and bills, remorse at expenditures or feeling of insufficiency over our salary earned, many recent researches have shown money to be a prime cause of concern, and one of the key reasons of arguments and discord between couples and families.

Even the affluent and elite do not stand immune, going by the Capgemini's annual World Wealth Report, with major causes of concerns for millionaires in 2018 ranging from measures involving preservation of their lifestyle to whether their descendants are capable enough to manage their inheritances. Financial Therapy is a rapidly growing area of practice in the U.S., here the incumbent Financial Therapy Association(FTA) has members in excess of 250, financial therapy integrates classical financial consultation with a more enthusiastic and emotional psychological examination of what are the key drivers shaping a client's behaviour towards his money holdings. "The obstacles that keep us from having more and being more are rooted in the emotional, psychological and spiritual conditions that have shaped our thoughts," this is what U.S. financial expert Suze Orman writes in The Road to Wealth: A Comprehensive Guide to Your Money. "In other words, what we have begins with what we think".

Although the practice called financial therapy has yet to make a mark in U.K. – but Kristy Archuleta who is the current president of the Financial Therapy Association (FTA), admits it is only a matter of time. Financial coaches such as Simonne Gnessen tread similar ground, Gnessen who is the co-author of Sheconomics and patron of Wise Monkey Financial Coaching came to financial therapy via a course in neurolinguistic programming.

But amidst all this in the Indian context it can be safely assumed that the advisor's job is more about being a trusted hand to hold during times of market stress. It's their job to keep clients calm and confident for the times ahead, more so than it is about specific market performance. Thus the final conclusion can be that "The role of the financial advisor may become more like a financial therapist in the future."

Financial Therapy vs. Financial Coaching

To the extent that exercises concerned with the eradication of perplexity, money disarray, dysfunctions, all actions akin to the reinforcement of well-being and flawless operation are designated as two distinctive realms. In this context it can be stated that there stands a difference amid financial coaching and financial therapy. Under his profession a financial therapist is trained to accord with clients who are undergoing both psychological money muddle and those desiring economic growth and expedience. For the purpose of illustration, Fairley and Stout (2004) developed a model pertaining to the area of traditional therapy which propounds that while therapists are competent enough to understand clients coming between 10 to +10, a coach is confined to those clients from 0 to +10 (illustratively a normal problem).

In extension to dealing with money related disorders, a field wherein financial therapists carry a definite advantage over financial coaches is in the area called psychometrics. Going by the central idea, financial coaches do not carry out psychological economic diagnosis or testing. Coaching is an interposition focusing on toughness and explanations and lays no emphasis on the basis of the complication (Buckley, 2007; Williams & Davis, 2007). Financial therapy is primarily meant to target on the origin or reason behind a problem, but it is also capable of being viewed from a clarification-focused outlook as represented by Archuleta, Grable, and Burr (2015).

Financial coaching is not dependent on definitions of mental illness derived from models of medical science. Truly speaking, coaching does not and should not aim at eradicating health problems of the mind and/or money related distortions. But quite a few clients undergoing financial coaching probably display elevated levels of apprehension, incalculability, and stress owing to their economic hardships; it may be an error to compare financial issues with clinical pathologies (Delgadillo, 2015).

Nonetheless, the major distinction lies in the fact that financial therapists (if adequately skilled) have the choice of depending on medical analysis of money obsessions or muddle if they deem it fit for remedy.

We can also differentiate financial coaching and financial therapy on the basis of time orientation. While operating with issues concerning the present and future—similar to what is done by financial coaching —financial therapy possesses the capability to deal with traumatic situations of the past. Relying on the various therapeutic standpoints, financial therapists are poised to tackle the past, present, and future of their clients. If adequate training is provided, clinical analysis and diagnoses may be the way out with approaches to deal with dysfunctions.

FINANCIAL THERAPY AS A PROFESSION

Even today in most parts around the world bringing up the topic of financial therapy tends to leave people speechless most probably because it is not that common a term. Moreover, it integrates two concepts that most people prefer to dodge: therapy and finance. In fact all one needs is to just put them together, and the result is a real conversation killer. In the words of New York-based financial therapist Amanda Clayman "Financial therapy differs from general psychotherapy only in that it's focused on enhancing financial well-being through the study of the emotional, behavioural, cognitive, relational, economic and integrative aspects of financial health. In practice, it integrates financial counselling and planning with personal counselling, marriage and family therapy, sociology, social work, and, of course, psychology. Also, good financial therapy happens in collaboration with finance professionals, such as tax experts and investment advisers."

As per Forbes, the Financial Therapy Association (FTA) came into existence almost ten years ago. And while financial therapy has grown as a profession since then, the quantum of financial therapists is still mostly exceeded by the numbers of coaches and financial planners. The reason behind this can be that the profession is lesser-known, setting up oneself can definitely be a huge task -- particularly given that there is no need for a license or training to undertake the practice of financial therapy.

Although, there are certain things a person can do to position himself/herself for attaining accomplishments in this emerging area. As per financial therapist Bari Tessler, the initiating step requires taking into cognizance the relationship with your own money. "One must do his own work prior to truly helping other people. (This does not imply that you will 'fix' your relationship with money once and for all — I accept the fact that our relationship with money is always flourishing and unfolding, and we can never be "done" with it.). Doing our own work is the best path to become more familiar with the issues, emotions and tools and we need to uphold others," Tessler says. Additionally, just because a particular degree or certification is not required does not mean it is not significant. Financial therapists normally are trained to be mental health professionals, economic planners or social workers. This means that those who do not act as financial planners must possess some type of therapeutic licensure, such as a progressive degree in psychology, family therapy, marriage and or social work."

Finally, the economic and political landscape of the early part of 21st century has been full of commotion. Confronting the financial recession, cutbacks in social programming and an enhanced insistence on personal answerability, there exists an enlarged requirement for scholastic institutions to put students in a state of readiness for human services and financial professions to ultimately become proficient financial practitioners.

Educating commerce and management graduates regarding the phenomenon of financial management and personal finance is an intrinsic part and parcel of this process. Moreover, by developing alternatives for financial and economics graduates like certificates, courses and curricular subject matter, there will be an incremental understanding and application of financial therapy and financial planning professionals, thus giving rise to a more inclusive multidisciplinary workforce which is tailor-made to reconcile the needs of client.

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Big Data Analytics in Residential Property Buying Decisions in India

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As per estimate for majority households their most expensive purchase in lifetime is property, residential or otherwise, locking 15.8% of the world's wealth in real estate (Capgemini World Wealth Report 2017). Often first property purchase by an individual is residential. In current times, Indian real estate market, despite the digital revolution, property purchase decisions are not yet based on data analytics. At best they are supported by a formal market research or valuation exercises, rather than a data-based decision. In Indian real estate market, property purchase decisions are influenced by heard behaviour, family and relatives, promotional offers and gut feel (Piyush, Bhatt,2016). This approach in decision making for the most expensive purchase of lifetime often backfires as it is nothing more than leaving everything to fate and prayers.

Indian real estate market has been questioned for its transparency, raking 34, (Global Real Estate Transparency Index, 2020) on several parameters including transaction processes, investment performance, data and regulations. Even though there are several digital property information platforms, it does not really help in residential property buying decision making for a customer, since these portal shave focused on structured information delivery rather than accuracy, the only duplicate developer provided information although in a structured manner. In such circumstances Big Data and protect is not yet enabling real estate buyers in decision making as it is effectively doing in other domains i.e. e-commerce, e-governance, financial markets etc.

Implementation of Real Estate Regulatory Authority (RERA) Act in July 2017 has been a disruptor in several ways for Indian real estate market, availability reliable data for under construction and new projects is one of them. As per regulations of RERA, every under construction or new real estate projects have to mandatorily register with concerned RERA Authority of their state and project information to RERA in the prescribed format that would be publicly available. This regulatory requirement is resulting in a large amount of reliable data with every state RERA which is currently unexplored.

This paper attempts to explore the potential use public data of RERA Authority for development of a digital platform using Big Data and GIS Applications to help customers in taking purchase decisions.

Keywords: *Real Estate, Property, Big Data, Technology, RERA*

INTRODUCTION

Every emerging economy has reaped the benefit of real estate and construction sector since it continues to be large employer as well as wealth creator for every nation, and India is not an exception to this economic phenomenon. "Based on various reports the real estate sector looks fertile for future growth and the Indian real estate market may touch US$180 billion by 2020." (Neerav Merchant, 2016). Although past five years has not been very encouraging for Indian Real Estate Sector. Industry accepts that home buyer's confidence across the country is lowest in the past 10 years. Reasons for this discouraging scenario are many i.e. increasing interest on project finance, poor return on investments, grossly delayed delivery of houses, substandard quality of constructions and abysmal sector outlook.

Although a closer look would reveal little different story for residential real estate collapse in India i.e. erratic and irresponsible project planning as well as purchase behaviour of buyers which is never on sound backing of reliable research and data.

One of the core issues in all these aspects is the information gap that runs wide in this sector. Both builder and buyer are responsible for this situation since closely held real estate business has a very poor record of disclosures and customer is not very demanding. No third party is providing reliable data on real estate projects and the sector continues to be under pressure due to information asymmetry.

Property purchase in India is always a challenge since often it is the most expensive purchase of a lifetime for an individual buyer. Property buying decisions rather than being a data-based, is marred by herd behaviour, family and relatives' influences, promotional offers and gut feel (Piyush, 2016). This approach in decision making for property the most expensive purchase of lifetime often backfires as it is nothing more than leaving everything to fate and prayers. Data based decision making is also difficult since property information is either missing, incomplete, duplicate, or fragmented. Typically, a property record consists of numerous information like property maps, layout and design, product specifications, legal documentation, multiple taxes, statutory approvals, compliance certificate etc. This data is maintained by different stakeholders who do not have a strong compliance system to maintain the property data which results in data redundancy, duplication or data gaps in real estate business that creates access barriers for a prospective buyer while conducting secondary research.

Although transparency, governance standards and digitisation is increasing in real estate sector, through availability of online web portals as well as web sites of projects, consumers can now access the data without being present at the site. Virtual visit of the property is now becoming popular in the market and many property transactions are being executed online for capital and rental transactions. All these digitisation efforts are focused on better customer experience, but final purchase decision behaviour is still not data based, but there is strong anticipation that this purchase behaviour in India shall change because of implementation of Real Estate (Regulation & Development) Act, 2016, as it is expected to bring about radical changes in real estate sector.

LITERATURE REVIEW

Since we are embarking to a relatively new research area it is imperative to understand what is the role of disruptive technology and what is 'Big Data' prior to exploring its application in data-based decision making in real estate residential property purchase, following is the role of disruptive technology and definition of Big Data by leading technology pioneers is a good starting point.

Within the real estate context, "technology" may be construed in a broad sense to include innovative software, hardware, materials, construction, and design (The Real Comm Conference Group LLC, 2015)

Technology has the potential to allow countries around the world to develop a comprehensive real-time database of the use and ownership of buildings. Countries such as Sweden, Ghana and Georgia are already conducting trials on these aspects. This could be transformational because transparency in real estate markets has a profound impact on both economic development and the quality of life of citizens.(Couse, 2016)

(The Economic Times, 2019) "McKinsey influential Report claimed that the range of data science will be the number one catalyst for economic growth. McKinney identified Big Data as one of the new opportunities that contributed to the launch of the Big Data era. A growing torrent of data, this approach indicates that data seems to be coming continuously and at a fast rate".The report also says that ''India is one of the largest and fastest growing markets for digital consumers, with 560 million internet subscribers in 2018, second only to China. India will see internet users rise by about 40 per cent and the number of smartphones to double by 2023".

India is contributing significantly in Big Data generation since in the past decade and a half, several property portals have come into being and providing digital information to the prospective residential property buyer. These property portals do not verify information and prospective property buyers and Investors are expected to undertake their own due diligence of available data. Since before taking any investment decision investors /buyers are expected to collect information from multiple sources and analyse it themselves, investors often do not take rational decision and their decisions get influenced by emotional or non-relevant factors. Naturally it ends up in an dissatisfied customer.

Real estate purchases have now become commoditised even though it is an investment class asset. Like any other commodity customer satisfaction is an important dimension of this high value purchase for individuals. Quality of service, transparency, ethical dealings, and customer satisfaction have never been strength of real estate sector even though it at centre of discussions for other goods and service in public domain. It has affected reputation of real estate business as well as supply side stakeholders. Introduction of customer satisfaction survey, which can provide an opportunity to obtain information about the needs of customers and control the quality of services provided, is essential for the successful operation of the company in order to maintain one of the core values – customer service quality – at a high level (Putniņš, 2007). Research has established (Basil & Weber, 2006; Golob, Lah, & Jančič, 2008; Wang & Juslin, 2012) that customer satisfaction approach has global appeal in positive business performance.

Research also shows that property purchase behaviour in developed and developing economies are comparable since it is not entirely data-based rational decision but it dominated by perceived value by customers (Raghubir, P & Corfman, K, 1999; Monroe, K. B., 1990; Monroe, K. B., Krishnan, R. 1985). Although high value purchase such as residential property cannot be purchased with such sentiments. This situation presents us an opportunity to further delve into this aspect and explore if the technological solution may improve the decision-making behaviour of residential property purchase.

METHODOLOGY

This research paper is exploratory in nature. It can be summarized from the above review that how Big Data can play a significant role in consumers' buying decisions and how Real Estate (Regulation and Development) Act 2016 (RERA) can effectively support decision making through Big Data or availability of data. In India, data is available with various stakeholders whereas data freely available in public domain in unverified hence cannot be relied upon. The emphasis of this paper is on the effective use of information available with RERA authority in the consumer buying decision. Purpose of this study is to explore the potential use of Big Data analytics in residential property buying decision making since, in this process, decision influencers are several and it is difficult to analyse them adequately with the conventional approach.

The study is mainly based on secondary data that has been collected from published journals, media reports, web resources, industry reports and annual reports. Since topic specific research is not available in Indian context so far, literature review has been undertaken to broadly understand high value purchase behaviour of consumers and role of big data in such decision making process.

BIG DATA AND ITS ROLE IN REAL ESTATE

Importance of data is undisputable in present times. We could make a planned decision if data is accurate and authentic but all those muddled set of numbers must be analysed before one could extract a piece of valuable data from them or conclude on a decision. Since the analysis of large dataset is an impossible task for a human being, the computer algorithm is a reliable alternative.

Big Data refers to the massive dataset which may be structured or unstructured. Big Data analytics is the process of examining the patterns of large data sets and underline insights.

Structured data: Any type of data which has a specified format and processed in a fixed structured. There are several tools and techniques working with such kind of data (Where the format is well known in advance).

Example of structured data: An employee table in a database is a good example of structured data where employee_id, employee name, gender and department is given.

Unstructured data: Any data which a specified format doesn't have, in addition to that size of such data is huge and which is very difficult to process for deriving value out of it.

Example of unstructured data: Heterogeneous data source containing simple text files, images, videos are the typical example of unstructured data. For example, the output returned by 'Google Search' or 'Amazon'.

These days Big Data analytics is being integrated and used by almost all the industry and the real estate sector is also not an exception to it. The term "Big Data" is now commonly used to refer to all digital data for a long time but now it is proving to be a positive contributor for the growth of businesses, governance and empowering citizens. Availability of large quantum of data with corporations can be utilized for logical analysis and development strategies that may lead to the betterment of citizens and society.

"Madden (2012) summarises Big Data as data that is too big, too fast, or too hard for existing tools to process since new technologies are required to analyse it." Older ways of analysing such large quantity of data may not be productive, situation becomes even more complex since often data is not static and continuously changing due to sensor and social media based sources. (Provost & Fawcett, 2013). "Clearly, only Big Data is not good news since until it is not coupled with relevant analytical tools (Ward & Barker, 2013), it would prove worthless causing meaningless effort and expenses of managing and storing it."

"Big Data and the associated computational techniques can be compared with system of mass production devised by Henry Ford(Boyd & Crawford, 2012). The information extracted from Big Data, they propose, has the potential to change the way we think about many different areas of research, from economics to the social sciences to medicine and disease."

Disruptive technology can play a crucial role in improving customer satisfaction and experience because recent developments in technologies and improved data gathering through Big Data and/or other techniques have brought many changes in the evolution of the Real Estate Industry. A comprehensive analysis using Big Data by superimposing spatial information, project and promoter information, regulatory information and information on the macro-economic environment would help property purchasers in taking rational decisions.

POSSIBILITIES OF DATA ANALYTICS

Because of rapid growth in emerging technologies, it is now easy to capture, analyse and communicate with data. It is being leveraged by businesses to create digital applications where machine learning applications analyse, multiple kinds of data which is now available from city administrators, infrastructure providers, public & private businesses and citizens.

Matrix below represents shows the list of active web portal and services offered by them in the real estate sector.

Table 1:Digital Platforms & Service Offered in Real Estate Sector

Service Offered \ Web Portal	Magicbricks	Liases Foras	Propstack	99 acers.com	Propequity	Housing.com	Proptiger	Quicker Homes	Makaan.com
B2B Operations	•	•	•	•	•	•	•	•	•
B2C Operations	•			•		•	•	•	•
Property listing, Buy, Rent, Sell	•			•		•	•	•	•
Map Search Option				•					
Project Search through RERA ID							•		
Property Feedback	•			•	•	•	•	•	•
Expert Opinion of legal/Vastu/Home Loan	•			•	•			•	•
Home Loan Calculators	•			•		•			
Public database	•			•		•	•	•	•
Subscription based operation		•	•		•				
Publishes sector trends report		•	•		•				
Proprietary data		•	•						
Professional analytics support		•	•		•		•		
Interactive 4D view of project							•		

Sources: Secondary research through web resources, 2019, such as (99acer.com, n.d.), (Magic Bricks, n.d.), (Liases Foras, n.d.)

Improved data quality, multi-faceted analytical tools and superior visualisation techniques are now making it possible to develop better insights on urban issues and real estate markets. Real time data and decision making based on that, for service delivery, its management and optimisation is now possible and can be correlated with real estate values. This kind of analysis "provides an unprecedented potential from enhancing real estate property buying decisions, better forecasts for building utilization, more accurate assessment of the purchasing power of users of real estate and by better risk assessment of real estate users" (Herman Donner, 2018)

"Physical things are now creating an enormous amount of Big Data through sensors across the urban environment, on building, roads, streetlights, infrastructure and various other places. Smartphones, tablets, social media platforms, and network connected vehicles are all part of what is known as the internet of things (IoT) that allows for collection and application of knowledge on the environment and increasingly using Big Data analysis to predict market trends"(S Gregory Yovanof, 2009).

IMPACT OF RERA IN DATA DIGITISATION

After successful implementation of regulators in different business sectors i.e. Capital Markets, Telecom and Insurance it was imperative that real estate sector also gets an effective regulator for obvious reasons of improving consumer protection, increasing transparency, imparting professionalism and fixing responsibility of real estate developers and property brokers. With these noble intentions model Real Estate (Regulation and

Development) Act 2016 (RERA) was passed by parliament. Since Land is part of state list for legislation, respective state governments of India had to adopt this model RERA through legislation and ensure implementation from May 01, 2017. Key provisions of RERA were primarily consumer-centric that also necessitated mandatory registration of all ongoing projects with RERA Authority (Regulator), therefore significant disclosures about promoter, project, statutory approvals as well as associated stakeholders came into public domain and project promoter was liable for its factual sanctity. This was the first breakthrough for Regulator, since prior to RERA real estate project developers always retained right for revision in published information even after the transaction between property buyer and project developer was concluded and agreements were signed.

Although in India, several private businesses have launched online property portals in the past one and half decades (Table 1: Digital Platforms & Service Offered in Real Estate Sector Sources: Secondary research through web resources, 2019, such as (99acer.com, n.d.), (Magic bricks), (Liases Foras) in public domain, but none of them take liability for accuracy of their data since most of them has been organised asan internet media business publishing classifieds for consumer consumption and some value-added service to increase consumer traffic. Such information is not reliable even though it is part of Big Data. RERA has changed this situation for good.

As per (Kimberly Winson-Geideman, 2016)real estate traditionally generates three types of data – 1. Financial, 2. Transactional and 3. Physical. Financial data represents capital market and listed securities data of real estate assets. Transactional data represents information on real estate transactions, mortgages, taxes, expenses, leases and financial returns. Physical data represents information about land, project, structure, its characteristics, typology and spatial information (location, geography, neighbourhood).

Mandatory registration of projects is generating limited Transactional Data and but significant Physical data in real estate sector. A representative table of these data sets for a project is presented in the table below which is being currently captured by RERA:

A typical residential property buyer while undertaking market research to arrive at a purchase decision in her/his identified neighborhoods/he is concerned with, is now available with Regulator. This availability of factual and reliable data is opening several interesting Big Data Analytics possibilities that would help all stakeholder in better decision making. This analysis can be undertaken at core, spatial and peripheral data level(Kimberly Winson-Geideman, 2016).

SPATIAL DATA ANALYSIS

In the Indian context, a typical residential property buyer often concludes neighborhood for purchase very quickly based on personal preferences and rational. Often this decision is influenced by return on investment, affordability, social group connect, peer and family reasons or purely on a speculative basis. In the National Capital Region (NCR), that includes constellation of seven cities around Delhi, primary market residential property purchase decision in terms of choice of city is the easiest for an aspiring buyer. So far, such decisions are influenced by two key factors i.e. personal bias about a city and affordability. Personal bias itself may be influenced by one or several factors which have a varying degree of importance for an individual such as proximity to work, better educational facilities for children, quality urban infrastructure, conducive social, safe urban environment etc. Clearly tangible aspects of property purchase such as investment rationale, return on investment, total stock in a micro-market, demand supply scenario, available social

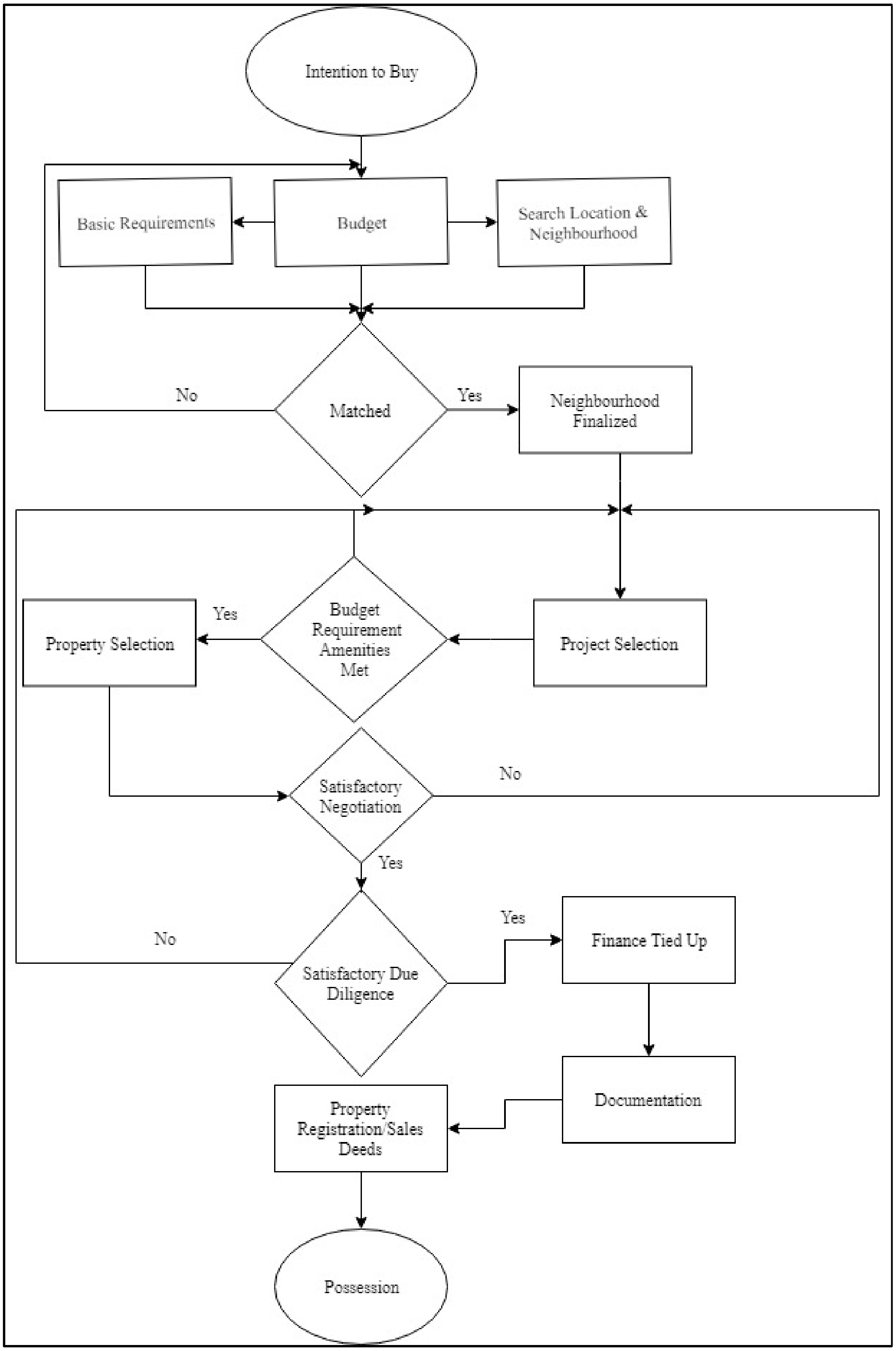
Table 2: Data to be submitted to RERA

Physical Data		Spatial Data
Project Details • Ongoing • New • Project Category • Project Name • Project Cost • Registry document • Sale Deed of Project Land • Lease Deed of Project Land • Extract of Land Record • Allotment Letter issued by Competent Authority	**Other Approvals** • CA Certificate • Waste Disposal Plan • Electricity Supply Plan • Electricity Clearance and Safety Certificate • Environment Clearance Certificate • NOC from Fire Fighting Department • Municipal Clearance for Serverage and other infrastructure • Commencement Certificate • Sanction Certificate of Bank Construction Finance • Height Clearance of Airport Authority of India	**Geographical Location** • Sanctioned Plan • Approved Map • Approved Layout
Sanctioned Plan • Type • Permit Date • Proposed Start Date • Proposed End Date • Sanction Letter • Project Specifications	**Development Works** • Water Supply • Sewer System • Design for Electric Supply • Energy Management System	**Neighbourhood Profile** • Geographic information • Physical and social amenities • Neighbourhood infrastructure • Landmarks • Transport terminals • Published secondary information • Planning norms

Source: (http://www.up-rera.in/pdf/Guidelines_for_Registration_of_Project_and_Updating.pdf, n.d.)

amenities etc., never form the basis for decision making since reliable information and analysis on the above parameters are available only through professional and paid engagement of consultants, which is often unaffordable for most of the households evaluating purchase options. Their best source of information is 'hearsay' with neighbourhood property brokers who advise on the basis of 'experience' rather than data-backed analysis.

Availability of reliable spatial data in the public domain about real estate projects in a neighborhood through RERA can effectively support decision making process of property purchase decisions. Big Data analytics and artificial intelligence over publicly available data of RERA can help in making a rational purchase decision in a neighborhood. If a prospective consumer can get bird's eye view of a real estate micro-market s/he can take a more informed decision about the time of purchase, type of property (under construction or ready to occupy), selection of builder, negotiation opportunity etc. Such decision making would also lead to a more balanced urban growth since buyers would avoid oversupplied markets because it would adversely impact asset valuation over a period of time and would have a higher probability of urban congestion.



Graph 1: A typical residential property purchase decision making process.

Spatial analysis of RERA data through Big Data analytics would also help project developers in taking a rational decision for new project planning. Through analytics developers would also have bird's eye view of entire micro-market so that they would be able take better business decision about product mix, target buyer group, project phasing and delivery period, project specifications, amenities to be offered in project, marketing and differentiation strategy etc. In post RERA scenario project developer's liability towards regulatory bodies, as well as customers, have increased significantly hence it is important that they carefully analyze the micro market before committing precious resources and launching a project.

PHYSICAL DATA ANALYSIS

Physical data (Kimberly Winson-Giedman & Andy Krause, 2016) constitutes property specifics such as land, structure, specification, amenities, type and size of units, project layout design, unit layout design and other quantitative and qualitative aspects of project, on which a prospective buyer spends most of his/her purchase evaluation time. In Indian context practice of involving a qualified architect or engineer, to advise on vital physical data prior to property purchase is non-existent, except for luxury property segment buyers. Reasons for this attitude are purely financial. Since usually property purchases are broker assisted who charge a fee, prospective buyers do not wish to further inflate their property purchase budget by engaging other consultants. Often this attitude backfires for buyers and they end up making a substandard purchase at market value. Buyer's entire focus during the purchase process is on price and mortgage conditions, more specifically interest rate and repayment period, as validated by Mahapatra, Mousumi Singha; De, Anupam (2017).

So far physical data was always transitional since real estate property developers retained the right for amendments in it and they kept it revising even after purchase decision was made. Although basic design and layout often do not change, project specifications and other physical data that did not impact individual properties were always in flux, e.g. changing the design of community club, position of entrance gates, internal circulation patterns, quality & make of finishes etc. In present circumstances as per RERA, all project specifications after project registrations would be fixed and project developers have lost all liberties for alteration is design or specifications. Therefore, data available with RERA can be taken as conclusive and can be effectively used for decision making analysis using Big Data Analytics. Through Big Data analytics now purchasers can effectively compare properties, its specifications, design and other tangible aspects to arrive at a rational purchase decision.

IMPACT OF BIG DATA ON VARIOUS STAKEHOLDERS

A Piece of information has a cost, sometimes monetary or non-monetary. So, it is important to understand the importance of a small piece of information. In past, it has been found that how poor-quality data can impact the outcome of the organization wherein if the quality of data is good results can be on a brighter side.Big Data in real estate is now a big term which is turning out to be a game changer for the industry as well as the community. With the availability and proper utilization of Big Data analytics all the stakeholders including, developers, agents, financial institutions as well as multiple regulatory bodies can use analytics for effective governance and consumer protection. This aspect has been detailed below for few stakeholders.

For consumer:

Earlier home buyers used to be completely dependent on traditional real estate broker to buy a property at a limited location with limited information. They did not have choice to explore large number of locations and compare them, but now accessibility of all the information on a centralize platform would open up a much greater possibility of analysis and informed decision making. A Property buyer can understand demand and supply in the neighbourhood, types of property, it's pricing, target economic group and proposed facilities in various projects which are their prime concern. Consumers can also develop some understanding of how their property would fare as an investment over the medium and long term in case of a construction development project. Since information would be from RERA Web Portal hence it would be reliable and project developer would be legally bound to deliver promised product. Although actual transaction price information would not be available on RERA Web Portal, but authentic pricing information is available with few B2B property portals that can be easily amalgamated through Big Data analytics under commercial arrangements. Property buyer would benefit most if Big Data analytics is supported by RERA Data while making purchase decisions.

For developer:

Big data analytics would be very useful for project developers as well since it would help them in product mix planning, pricing strategy, specifications& design, understanding sales velocity, availability of unsold inventory of different types of product in a micro-market etc. Analytics around these parameters would help project developers in positioning their project and product to ensure success by gap analysis. Developers would understand the targeted customer behaviour and accordingly may work on an effective marketing strategy. This would also allow developers to achieve a better return on equity.

For financial institution:

Indian real estate sector is struggling today primarily for want of finance which has dried up due to disruption in the market cycle. Financial institutions also suffered along with developers and consumers, due to this disruption and initiating bankruptcy process for several developers. It would not be unfair to conclude that Big Data Analytics would have prevented this catastrophic situation. Had financial institution knew about total supply in a neighbourhood within a specified period, they might have taken an objective view while financing projects or would have effectively priced their risk. In absence of reliable public data on supply of housing units, project developers, as well as consultant, may present selective information creating an unrealistically positive picture of neighbourhood real estate market. Moreover, information about the solvency of developer in the public domain would have forced funding agencies not to go overboard while considering their funding proposals, saving them from non-performing assets.

For property agents:

Another significant improvement in service delivery would take place among property service providers particularly, property agents. This important stakeholder of real estate business who is the backbone of property sales that ensures project success,was completely out of any regulatory regime. Although property agents have attempted to regulate themselves by forming associations, however, it has rather resulted in cartelisation, further compromising interests of property buyers. Property agents have been one of the key stakeholders responsible for misrepresentation to customers as well as property developers. To an extent the entire marketing ecosystem is responsible for this situation since available information itself is questionable and cost of misrepresentation was practically zero for property agents. RERA has conclusively addressed the issue of misrepresentation of information since information is now universally available to all stakeholders. RERA has put real estate agents under its ambit with punitive action hence property agents would also be more diligent with clients and Big Data analytics would make their jobs much more accurate, transparent and service oriented. They would not only share information with their customers but also be able to discuss several possible scenarios about prospects of their property, prior to purchase decision. Big Data Analytics can transform property agents into investment consultants.

For Regulatory Bodies:

With the implementation of Real Estate Regulation and Development Act (RERA, 2016), Every state authority is now custodian of a significant amount of reliable data in public domain just like Securities and Exchange Board of India (SEBI). At present RERA is taking the role of the reactionary regulator rather than a proactive regulator. RERA can easily superimpose its physical and spatial data for upcoming projects on Geographic Information System to create multi-layered analysis helping multiple stakeholders of built environment business to creatively use it. RERA can collaborate with private sector analytics firms having expertise in Big Data layered analytics that can have multiple application such as land record verification, resource planning and optimisation, traffic prediction and planning, infrastructure mapping and augmentation, supply demand analysis for reals estate sector, capital appreciation prospects in a neighbourhood etc.

Below table shows the possible analytics using RERA Big Data that has been mapped to various stakeholders which would concern them in various capacities either as buyer, builder, regulator, investor or service providers. This table is not exhaustive, and several combinations and permutation are possible using Big Data analytics that can handle millions of bytes of data.

CONCLUSION

Technology is changing several frontiers in business domains delivering efficiency and value. There is no reason why it will not be true for real estate sector as well. So far real estate sector has successfully developed digital platforms for property search that has become first point of information search for any prospective property buyer or seller followed by physical meeting or property inspection. This digitisation in real estate sector itself is generating large quantity of data that has potential for trend analysis in term of location and property preferences among customers. Although due to questionable reliability of data on these digital portals (refer Table 1), since it is never sorted or filtered by any human interface, except few subscriptions based portals, conclusive purchase decisions cannot be taken by customer using these digital classified platforms for real estate.

RERA Authority has now successfully bridged this gap of data reliability since project developer is bound by the information s/he has provided to regulator. Our analysis shows that the database of RERA can be effectively used for analytics if amalgamated with Big Data and that would be very helpful for a residential property buyer in taking informed decision. Such analytics shall not only be useful for residential property buyer but also for several stakeholders of real estate business.

Research conclusively indicates that RERA Authority can explore possibilities of partnering with private sector analytics organization to harness its data not only to improve governance of real estate sector but also work towards better resource planning and urban management. Layering of RERA data with GIS Spatial Data and Big Data at large, could open several businesses, governance and social application for a healthy real estate market.

This research is one of the early efforts in effectively using RERA data by amalgamating analytics for enhancing consumer buying experience as well as improving governance of real estate sector. Researchers will further build on

Table 3: Possible Big Data Analytics for stakeholders

Possible Big Data Analytics \ Key stakeholders of Real Estate Sector	Property Buyer	Builder	Development Authority	RERA	Planning Department	Environment Management Bodies	Water Supply Boards	Transport Planning Bodies	Consultants	Property Brokers	Contractors	Capital Goods Suppliers
Neighbourhood Level												
Spatial demographic distribution	•	•	•	•	•	•	•	•	•	•	•	•
Neighbourhood physical infrastructure demand and supply (including planned supply)	•	•	•		•	•	•	•				•
Neighbourhood social infrastructure demand and supply (including planned supply)	•		•		•			•			•	
Neighbourhood planning restriction if any	•	•	•		•	•	•		•	•		
Neighbourhood and project densities	•	•	•		•	•	•	•	•			
Total housing stock supply in a neighbourhood	•	•	•	•	•	•	•	•		•	•	•
Total commercial property supply in a neighbourhood		•	•		•	•	•	•		•	•	•
Environment and sustainability issues in a neighbourhood if any	•	•	•		•	•						•
Natural disaster risk profile of neighbourhood	•	•	•	•	•	•	•	•	•	•	•	•
Project Level Analysis												
Land and Title Records verification including any lien on project land	•	•	•	•						•		
Profile of project promoters and their solvency	•	•		•					•	•	•	•
Sale information of properties for various projects in neighbourhood	•	•	•	•						•	•	•
Project progress status	•	•	•	•	•	•	•	•		•	•	•
Project development schedule and deviations	•	•	•	•	•		•	•		•	•	•
Status of various approvals and compliances	•	•	•	•					•	•	•	•
Project and property specification and deviations if any	•	•			•		•	•	•	•		
Financing requirements (both debt and equity) for projects in neighbourhood		•		•					•		•	•
Information on consultants associated with project.	•	•		•					•	•	•	•
Selling agents and brokers of project.	•	•		•						•		•
Project and Unit design analysis	•	•			•				•	•		
Infrastructure adequacy analysis at project level	•	•	•	•	•	•	•		•	•	•	

other aspects of technology in real estate sector for a consumer friendly, transparent, and professional approach towards buying decisions.

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Dealing with difficult people

Ken Pierce

Bookboon.com

First Edition

2018

In this pandemic era, human beings are already undergoing many topsy-turvy situations. This book titled "Dealing with difficult people" is a very appropriate self-help book. Author had talked about the most intriguing aspect of human relationship, i.e. dealing with two most challenging categories of the people – one category is those who pull your chain and the other category is who push your buttons. Both categories of people cost one's time & money. In olden days (up to 1960s), people use to focus on external aspects but after 1960s, they started focusing on internal aspects of life too.

Conflicts arises when two individuals are unable to find common reality. In other words, when one is unable to understand the other's version of reality. This fatal misperception leads to seven fatal costs, i.e. destroying respect, undermining trust, creating resentment, damaging relationship, reducing team spirit, energy, depleting productivity and destroying organizations. Famous American management consultant Edward Deming identified seven conditions for getting best from others, they are – respecting people for their values, treating people fairly, caring about as a person, listening regularly, trusted to do good job, supported when needed & challenges when needed. By focussing on four areas of one's health (spiritual, mental, vocational, financial, social), better relation with the family can also be developed.

Further, author also introduced the Choice theory. It denotes respecting one's as well as other's opinion too. In this regard, Dr John Demartini had quoted a very relevant quote, "If the WHY is big enough, then HOW take care of itself."

Choice theory depicts seven principles which are pragmatic in origin. First one indicates the uniqueness of one's genetic body & mind. Second emphasizes on one's own specific value system for self-motivation. Third depicts one's unique value system that depends on one's own perception evolved through personal experiences. Fourth principle is about choosing one's behaviour out of 4600 choices. Fifth principle is a unique concept that denotes one's behaviour comprise of four components- first two control one's action & thinking simultaneously and other two components are one's feelings and physiology that one's generate. Sixth principle denotes two levels of one's thinking – level one assess situation from the available information & other level is seeing situation from outside perspectives (known as Self-talk). Seventh principle arise from this dual level of thinking only. It indicates that self- talk creates one's feeling thus one is more powerful and have more self-control than one can think. These seven principles highlight the level of self-control. If one is able to have high self-control, one will not be suffering from pyscho-somatic or Life style diseases.

Henceforth, author wrote about seven assumptions which make the difference in interacting better with difficult people by assuming that they are motivated by survival, have a purpose, can learn a better way, need to make choices, need to see a clear benefit, displaying their best effort and require respect. There are only three ways to communicate with them, they are:

Carelessly (self-righteously), Carefully (self -wrongeously) and Caringly (respectfully). Carelessly (self-righteously) communication refers when one is communicating one's own values while ignoring value system of difficult person whereas Carefully (self -wrongeously) refers to communicating within the difficult person's value and ignoring one's value. Caring communication (respectful) refers communicating one's values coherent with difficult person's values. Thus, only Caring communication (respectful) works better with difficult people as it (five fabulous ways for communicating) accepts, encourages, listens, negotiates, respect, supports and challenges them. Whereas careless and careful style of communication destroys communication as it leads to controlling, complaining, criticizing, blaming, nagging, punishing and threatening the behaviour of difficult people and interaction with them become more volatile.

In last, author conclude the book by a simple, practical, problem solving tool as 'A walk in the Park', is an analogy that kid is walking in a park and had to go for five benches. Each bench has a question and answer that act as a guardian for communicating with difficult person. These benches are Want (What do you want), Doing (What have you been doing to get it?), Options (Is what you have been doing working?), Planning (Are you ready to make a plan?) & Evaluating ((What else could you do to get what you want?).

Dr. Supriti Agarwal

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