Volume 5, Issue 1&2 (January-December 2018)

ISSN 2322-0767

Journal of Commerce and Business Studies

JOURNAL OF COMMERCE AND BUSINESS STUDIES

Volume 5, Issue 1 & 2 (January-December 2018) ISSN 2322-0767

CONTENTS

This issue of the Journal (Volume 5, Issue 1 & 2) is released in January, 2020.

EDITOR NOTE

The Journal of Commerce and Business Studies was initiated to provide an outlet for academic works in the field of commerce, business and management. In the last five years of its publication it has been able to disseminate the works of researchers through their contribution from different geographies of the world. As the world of business is experiencing the challenge of time, response and responsibility, researchers are exploring and expanding the canvas for inclusion of different emerging areas into the broader domain of commerce.

This issue of the journal has four research papers, one case study and a book review. First paper is written by Ozekhome and Eghosa examines the relationship between external debt and economic growth in Nigeria based on the time-series data of 1981 through 2015. The recommendations given towards the end of the paper after the analysis could guide the policy initiative in Nigeria. Corporate governance has been one of the most researched area among the scholars on business. The second paper written by Sharma and Singh succinctly analyses the impact of independent directors on the firm performance of some select Indian companies. Apart from finding positive correlation between independent director index and firm performance, the paper provides apt suggestions. Third paper (Dangi and Munjal) concerns issues faced by researchers in identifying and selecting a good research problem following analytical hierarchy process. Singh and Maurya have conducted a comparative study on digital consumer behaviour of China, Hong Kong and India has been done on the basis of Market Potential Index 2017. It identifies implications for businesses in the given regions.

A case study done by Jhunjhunwala on governing family businesses profiles major Indian business houses which are run through families. The issues highlighted include fair distribution of ownership among family members, well defined roles and responsibilities of each member, professional management and proper succession planning and it is suggested that if they are addressed appropriately, it can improve governance related problems of family businesses. The journal also has a book review of *The Fourth Industry Revolution*.

I would like to thank the authors, editorial team and the reviewers who have contributed through putting their tireless efforts. Prof R. K. Singh, Head, Department of Commerce and Dean, Faculty of Commerce and Business provided his kind guidance throughout the process of publishing this issue of the journal. I express gratitude to him for this support. I hope that all the readers would enrich from the contributions made in this issue of the journal.

VK Shrotryia
Editor

IS EXTERNAL DEBT A DIS-INCENTIVE TO GROWTH IN NIGERIA? AN EMPIRICAL RE-INVESTIGATION

Hassan O. Ozekhome[1] and Igbinovia L. Eghosa[2]

This paper re-examines the empirical relationship between external debt and economic growth in Nigeria. Using Cointegration and Error correction techniques on annual time series data covering the period 1981-2015, the empirical results reveal the existence of a short-run dynamic and a long-run equilibrium relationship between external debt and economic growth in Nigeria. In particular, the results, using Nigerian data, show a negative and significant relationship between external debt and economic growth; an evidence of debt overhang effect. Debt service ratio is found to have a negative (though insignificant) effect on growth; an evidence of weak crowding out hypothesis. Foreign Direct Investment (FDI) has a positive and significant impact on economic growth. Export earning is positive (though insignificantly) related to economic growth. Exchange rate on the other hand is negative but insignificant on economic growth. We recommend amongst others policies that will reduce external debt to sustainable-growth enhancing level, as well as deployment of external debt resources to productive and self-liquidating projects, increased foreign direct investment to augment domestic resource constraints, diversification of the productive base of the economy, strong fiscal discipline and implementation of stable macroeconomic policies, in order to enhance rapid economic growth in Nigeria.

Keywords: *External Debt, Economic Growth, Debt Overhang, Crowding Out Effect, ECM.*

INTRODUCTION

A key macroeconomic goal of every nation is to among others; maintain internal balance via full employment and price stability, and external balance via balance of payment equilibrium (Krugman, 1988). Nigeria like many other developing nations is characterised by domestic and foreign resource constraints exemplified in the 'Two gap model', largely due to corruption, weak institutions and a liberal 'culture of waste' which perpetually subject such economies to deficit position. A country may have enough domestic resources in the form of savings but may not be possible to transform them into foreign exchange resources needed for growth. Thus, there can be a foreign exchange gap without a savings gap. A savings gap without a foreign exchange gap could also exist (Iyoha, 2004). In most cases for typical developing countries, both gaps exist. The necessity for government to finance these deficits for development purposes generates the need to borrow externally. Borrowing by countries occurs as a result of their inability to generate enough domestic and foreign exchange resources to carry out development-oriented activities. External borrowings thus supplement domestic savings and allow such countries carry out productive activities (Ezeabasili, 2006).

[1] Lecturer, Department of Economics and Statistics, Faculty of Social Sciences, University of Benin, Nigeria.
[2] Lecturer, Department of Banking and Finance, Faculty of Management Sciences, University of Benin, Nigeria.

Short-term borrowing from external sources, in addition to financing current account deficits from external disturbances also helps to shore up external reserves position and strengthen external liquidity position in the future. According to Gana (2002), external borrowing is desirable and necessary to accelerate economic growth, provided that the resources are channeled to increase the productive capacity of the economy and promote economic growth and development. Such borrowings shouldn't constitute a threat to economic growth if the economic benefits accruing from the projects funded by the borrowed funds, outweighs the total cost of borrowing and the resources procured are judiciously utilized for self-liquidating and growth-enhancing projects.

External indebtedness is not harmful in the real sense, but only when it becomes unsustainable and the resulting debt servicing is heavy. Iyoha (1997) posits that high debt burden depresses investment and economic grow through illiquidity and economic disincentives occasioned by limited resources to be divided among consumption, investment, external transfers, trade capacities and performance by servicing external debt. Large debt service payments impose a number of constraints on a country's growth scenario; it drains out limited resources and restricts financial resources for domestic development need (Iyoha, 2004). The theoretical literature on the relationship between the stock of external debt and growth has focused largely on the adverse effects of debt overhang and crowding effect. If a country's debt level is expected to exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. Thus, some of the returns from investing in the domestic economy are effectively "taxed away" by existing foreign creditors, and investment by domestic and foreign investors reduce, and consequently, economic growth-is discouraged (Krugman, 1989). The literature on debt suggests that a heavy debt burden may act as an implicit tax on the resources generated by a country, and therefore reduce the size of domestic and foreign investments as well as their quality, and create negative incentives for policy reforms and growth (Krugman, 1988, Sachs, 1989).

Nigeria achieved the long sought external debt relief from the Paris Club in 2005 in which 60% (18 billion US dollar) of the US$30.85 billion external debt was cancelled. This debt relief eventually spared the country a yearly US$2.3 billion (N345 billion) debt service burden. Expectations were that the deduction of the amount from Nigeria's external debt profile would induce economic growth as the resources previously used to pay and service external debt would be channelled to investment and other viable economic-enhancing projects. In spite of the debt forgiveness received by Nigeria from Paris club, the evidence of accelerated economic growth has been a mirage, as the performance in education, health, exchange rate, external debt stock and servicing ought did not show any buttressing evidence of the impacts of such debt relief (Bakare, 2010). Currently, Nigeria's external debt stands at $11.26 billion (CBN, 2016). Given the changing dynamics of Nigeria's external debt, as well as the differing macroeconomic context and implications for growth in terms of structural, economic and institutional characteristics, it is instructive to empirically re-investigate whether debt burden and the associated debt service payments depress economic growth in Nigeria. It is on this basis that this study becomes imperative.

REVIEW OF LITERATURE

Theoretical Issues

In the neoclassical debt paradigm, a positive relationship between debt and growth is presumed; this is based on the assumption of perfect movement of capital in terms of international exchange and deployment of resources from one country to another. Hence, the general presumption is that debt burden exerts a "weighing down" effect on the rate of economic growth and development; through several channels related to the debt stock and consequent debt servicing (Krugman, 1998).

Although, the traditional neoclassical models may have explained the cause effect" relationship between debt and economic growth, it has been criticized for its flawed and unrealistic assumptions of perfect mobility of capital which in the real world has been known not to be perfect due to trade sanctions embargoes, restrictions and political instability. External debt has had a severe impact on African countries, exacerbating the problems arising from sharp deceleration in primary commodity prices, (Green & Khan 1990). The debt burden has clearly been a constraining factor on rapid economic recovery. This adverse effect of external debt burden on growth has been pronounced, particularly in African economies, on account of their inability to grow sufficiently to reduce the burden to a sustainable level (Sachs & Kenen, 1990). The heavy debt services payments have inevitably put great pressure on budgets, leading to rising fiscal deficits in the heavily indebted countries (Iyoha, 1999). The implications of these are that the increased debt stock and mounting (heavy) tax to service the debt have the effect of depressing investment through the debt overhang effect. The reduction in expenditure and public investment on social services, such as education, health, road and telecommunication tend to reduce economic growth. This diversion of resources from public investment to debt service is related to the "overcrowding out" hypothesis. Thus, the combined effects of both debt overhang and crowding out act as dis-incentive to growth. The overhang effect of heavy debt burden has been most debilitating in many debtor African countries, as this has highly affected many high yielding investments in human capital accumulations, investments in technology and physical infrastructures (Bowe and Dean, 1997). High debt over hang discourages investment and affects future output negatively because the revenue generated by production and exports is used to repay current debt obligation (Audu, 2004; Ayadi & Ayadi, 2008).

A country suffering from external debt burden would invest less than it would in the absence of such an overhang, and consequently forego projects with a positive net present value (Bosworth & Collins, 2003). Investment deteriorates because the stocks of debt act as an implicit tax on new investment, as country's government raises the resources it needs to service its debt by taxing firms and households. An increase in the government debt increases the private sectors expected future tax burden. Since higher taxes divert the benefits of new investment from the private sector to the existing debts holders, they also reduce the private sector's incentive to invest (Sach, 1989; Savvides, 1992).

In nutshell, a country suffering from debt overhang is unable to service its debt to obtain new loan and to invest as much as it should. Debt overhang theory is based on the premise that if debt will exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. Thus some of the returns from investing in the

domestic economy are effectively taxed away by existing foreign creditors and investment by domestic and new foreign investors is discouraged. Accumulation of debts reduces the country efficiencies, since it makes it more difficult for the country to adjust efficiently to major stocks and international financial fluctuations. As a result of the increased pressure to obtain more foreign exchange to service the debt, many indebted nations restricted import and reduce trade (Chibber & Pahwa, 1994).

The Debt Overhang and Crowding Out Hypothesis

The debt overhang hypothesis posits that the accumulated stock of external debt act as a tax on future output and thus discourages private investment (Krugman, 1988; Sachs, 1988). In other words, external debt stock has destabilizing, and devastating effect as it acts as a disincentive to private investment and growth. Through its negative effect on investment, mounting external debt and debt burden have depressing effect on economic growth (Borensztein, 1990). It is the disincentive and depressing effect of external debt stock that leads to poor investment and growth performance of many highly indebted less developed countries (including those of SSA) (Iyoha, 2004).

Krugman (1988) defines debt overhang as a situation in which the expected repayment on external debt falls short of the contractual value of debt. If a country's debt level is expected to exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. Thus, some of the returns from investing in the domestic economy are effectively "taxed away" by existing foreign creditors, and investment by domestic and foreign investors-and thus economic growth is discouraged (Krugman, 1988, 1989; Sachs, 1989). High debt overhang discourages private investments through the debt overhang effect. It could undermine the effectiveness of structural reforms aimed at enhancing economic growth and poverty reduction (Were, 2001). Proponents of the debt overhang hypothesis, argue that when foreign debt becomes excessive, actual payment to creditors become linked to the economic performance of the debt or country. Therefore, potential increases in debt payments depress the returns to productive investment and discourage capital formation (Sachs, 1989).

The crowding out effect on the other hand holds that highly indebted poor countries frequently divert resources, including foreign aid and other foreign exchange resources, to take care of pressing debt service obligations, thereby crowding out investment and growth through rising interest (Borensztein, 1990, 1991; Warner, 1992). The crowding out of public investment, thus states that larger debt service discourages public investment, since it soaks up resources from the government budget and reduces the amount of money available for productive investment. Thus, through its negative effect on investment, escalating debt and the associated burden in terms of debt service payment have a depressing effect on economic growth and development (Iyoha, 2004).

The large debt stock and crushing debt service burden have combine to introduce a new vicious circle to the analysis of debt problem for developing countries as many of the Sub-Saharan African (SSA) countries face high debt service payments in the face of high debt stock and inadequate foreign exchange earnings to service the debt. These leads to import strangulation which holds back export growth, thus perpetuating high import propensity. The debt overhang and the crowding out effect, including other uncertainties created by the debt situation further depress investment. Falling investment combined with shortages of essential imports results in declining real output. Declining output and

escalating current account deficits lead to increasing debt and rising debt service obligations, thus perpetuating the circle (Iyoha, 2004).

Review of Empirical Studies

A number of studies have examined the empirical relationship between external debt and economic growth. A review of these studies is presented below.

Mukhopadhyay (1995) constructs a disequilibrium model to evaluate the relationship between external debt and economic growth. His study draws data from nine developing countries; Argentina, Brazil, Chile, Columbia, Ecuador, Mexico, Philippines, Thailand and Uruguay from 1971-1992.The result reveals that rapid growth of external debt and service GDP ratio compressed private investment through their effects on both the demands for and supply of credit.

The empirical evidence on the effect of debt variables on investment and/or growth in less developed countries varies; however, most authors find debt variables to be significantly and negatively correlated with investment or growth. (Green and Vilanueva, 1991 and Iyoha (1997), find evidence that, debt services crowd out investment. In particular, the debt-to-GNP ratio had negative and significant coefficient, indicating the non-rejection of the debt overhang hypothesis. The study by Borensztein (1991) for Philippines finds that the debt overhang had an adverse effect on private investment. Kumar and Mlambo (1996) find same conclusion in a study of investment in Sub-Saharan African countries. Desphande (1997) also found similar results from in a study of experience of 13 severely indebted countries for the period of 1971 to 1991. In study by IMF (1999) involving the 41 heavily – indebted countries (32 of which are in Africa), it finds that the relationship between debt and investment on economic growth seems to be weak in middle- income developing countries as compared to the low-income developing countries. Other factors may have also worked to depress investment or economic growth in these countries.

Cohen (1993) examines 81 developing countries over the period 1965-87; rejecting the debt overhang hypothesis and supporting the crowding out effect. He finds no significant correlation between the debt-to-export ratio and the investment variables, while the debt service is significantly negatively correlated with investment. In particular, the point estimate of the crowding out effect is 0.35, which means that for every 3 percentage point GDP transferred abroad in debt service payment, investment decline by 2 percent point. Afxention and Serletis (1996) examine whether indebtedness has been detrimental to per capital growth in moderately and severely indebted countries. The results show ample evidence of the depressing effect of debt overhang on investment and its long term adverse impact on economic growth.

Using macro-economic data for a panel of 100 developing countries over the period of 1980-2002 (which include per capital GDP measured at purchasing power parity, population growth, fiscal balance, investment, Aid, primary education, exports and import, terms of trade, inflation, domestic credit, urbanization and debt stock) and institutional variables covering 1984-1997, Presbitero (2005) found evidence of crowding out effect of debt service payment with a strong negative effect on growth. The author concludes that debt stock reduction should enhance economic growth since a reduction of NPV of debt to exports ratio is found to increase per capital. GDP growth rate by 0.9 -1.8%. The evidence also show a greater relevance to debt service reduction to growth estimated at within the range 0.15 to

0.27, which should be the target.

Morisset (2002) examine the impact of debt reduction in the context of a macroeconomic framework and tested the direct and indirect relationships between external debt, investment economic growth. In order to explain the drastic reduction in private investment, some direct and indirect channels are examined. He finds that if private sector is credit rationed, then the high level of foreign debt affects productive investment through a disincentive effect.

Karogol (2002) examines the short-run and long-run relationships between economic growth and external debt service for Turkey during 1956 – 1996. The study employed a standard production function model analyzed using multivariate co-integration techniques. The Vector Auto regression estimates showed the existence of cointegration between both variables. It also revealed that debt service is negatively related to economic growth in the long-run.

Malik, Hayat, & Hayat (2010) examine the relationship between external debt and economic growth in Pakistan for the period between 1972– 2005, using time series econometric technique. The empirical findings show that external debt is negatively and significantly related to economic growth. The evidence suggests that increase in external debt will depress economic growth. The study concludes that debt servicing burden has a negative effect on the productivity of labor and capital, thereby destabilizing economic growth.

In Nigeria, a number of studies exist on the relationship between external debt and economic growth are considered. Essien and Onwioduokit (1998) adopted the Zeller Reformulation Error (ZRE) in variable type model to examine the relationship between external debt and growth, with the conclusion that the high debt burden is the root cause of Nigeria's sluggish growth. Ekpo and Egwaikhide (1998), find similar evidence that that external debt burden has contributed significantly to a decline in investment in Nigeria. Iyoha (1997a) examine the impact the relationship between debt overhang, debt reduction, investment and economic growth in Nigeria. The findings show that high external debt stock reduces investment and growth, while debt reduction and investment stimulate economic growth.

In a similar vein, Iyoha (1999) found empirical support of debt overhang in SSA countries. The analysis showed that Sub- Saharan Africa's external debt stock and debt service payments act to depress investment and lower the rate of economic growth. Not only has external debt overhang depressed incomes, investment and living standards, it has also seriously constrained the scope of macroeconomic policy making and has damaging effects on economic and financial institution. Alfredo and Francisco (2004) found evidence that lower external debt stock were associated with higher growth rates for some Latin American and Caribbean countries.

Osinubi, Dauda & Olaleru (2006) found evidence of the existence of debt Laffer and non-linear effect of external debt on economic growth in Nigeria. They conclude that heavily indebted countries in sub-Saharan Africa need to evolve creative strategies for bringing about debt reduction so that the high debt stock and associated crushing debt service burden would not impact too negatively on economic growth. The findings by Audu (2004) also show that debt servicing has significant adverse effect on the growth process in Nigeria.

Ayadi and Ayadi (2008) examine the impact of the huge external debt, with its servicing requirements

on economic growth of the Nigerian and South African economies. The Neo classical growth model which incorporates external debt, debt indicators, and some macroeconomic variables was employed and analyzed using both Ordinary Least Square (OLS) and Generalized Least Square (GLS) methods. The finding revealed the existence of a negative impact of debt and its servicing requirement on the economic growth of Nigeria and South Africa. Ogunmuyiwa (2011) investigate whether external debt enhances economic growth within the period 1970-2007. Employing Granger causality test, Johansen co-integration test and Vector Error Correction Method (VECM), the findings revealed no causality between external debt and economic growth in Nigeria.

Adesola (2009) investigate the impact of external debt service payment on economic growth of Nigeria over the period 1981 to 2004. Employing Ordinary Least Square method to examine the effect of debt payment to multilateral financial creditors, Paris club creditors, London club creditors, promissory notes holders and other creditors, the findings reveal that debt payment to Paris club creditors and promissory notes are positively related to GDP and gross capital formation (GCF), while debt payment to London club creditors and other creditors are found to be negatively and significantly related to GDP and GCF.

Ezeabasili, Isu & Mojekwu (2011) investigate the relationship between Nigeria's external debt and economic growth, between 1975 and 2006. Employing cointegration and error correction techniques, the results revealed that external debt has negative relationship with economic growth in Nigeria. In the results, a one per cent increase in external debt resulted in a decrease of 0.027 percent in Gross Domestic Product (GDP), while a 1 percent increase in total debt service resulted to 0.034 percent (decrease) in Gross Domestic Product. These relationships were both found to be significant at the ten percent level. In addition, the pair wise Granger Causality test revealed auni- directional causality between external debt service payment and economic growth at the 10percent level of significance. Also, external debt was found to granger cause external debt service payment at the 1 percent level of significance. In order to ameliorate the negative influence of external debt on economic growth, the authors advised that debt accumulation for projects must be matched with the timing of repayment. They conclude that Nigeria must be concerned about the absorptive capacity, and that consideration with respect to low debt to GDP, low debt service/GDP ratios should guide future debt negotiations. Finally, the portfolio of debt must be diversified in terms of sources and types to avoid harmful concentration.

Sulaiman and Azeez (2012) examine effect of external debt on the economic growth of Nigeria for the period 1970-2010. The authors employed cointegration and error-correction models. The findings revealed that external debt positively enhances economic growth in Nigeria. Against this backdrop, the authors recommend that government should ensure economic and political stability and that external debt should be acquired mainly for economic reasons rather than social or political reasons.

Kasidi and Said (2013) investigate the impact of external debt on economic growth in Tanzania for the period of 1990-2010. The study used time series data on external debt and economic performance. It is assumes that external debt is critical to developing countries in meeting their developing needs, while debt servicing restores credibility to existing and new creditors. The findings reveal the existence of significant impacts of the external debt and debt service on GDP growth. In particular, total external debt stock is found to have positive effect on growth by about 0.369 unit percent, while debt service payment have a negative effect of about 28.517 unit percent.

Onovwoakpoma (2013) examines external debt burden and its impact on major macroeconomic variables in Nigeria. Employing cointegration and error-correction techniques, the findings revealed the existence of a long run relationship among the major macro-economic variables. The results show that external debt burden, foreign direct investment, inflation and export have positive impacts on economic growth. The study recommends that the Nigerian government should exercise caution in contracting further unproductive debt, as it may be detrimental to the growth and development of the economy.

External Debt Burden and Debt Service Capacity

External debt burden is a reflection of the difficulties and constraints arising from the servicing of external debt. This may result from inability to generate enough resources to meet commitments in debt servicing. The burden is measured in terms of the proportion of current resources(income) devoted to financing past consumption (Ogunlana, 2005). Thus, when a disproportionately large share of current resources is deployed to service external debt, the burden increases. The reverse takes place if external debt can be serviced without compromising the requirements of domestic economic development.

Two critical issues come to bear when analyzing debt capacity. The first addresses what the optimal level of debt should be in order not to run into debt service difficulty. The second relates to the sustainability of debt situations and policies. The optimizing framework dominates much of the theoretical literature. Its focus is on the analysis of marginal cost and benefits of borrowing which should be equal at the optimal level of debt. The non-optimizing model examines the sustainability of particular debt situations and policies in the light of the expected growth path of the economy. In this case, the emphasis is on foreign borrowing for investment purposes in order to fill the gap between domestic savings and investment. The model however suffers from the rigidity of its basic assumptions which focuses on investment gap, with less consideration given to whether the investment will generate foreign exchange to service debt at maturity.

Debt Burden and its Sustainability

In the analysis of external debt sustainability, a number of factors come into play to establish if a country will be able to service its debt since it is inherently forward looking. These factors include the existing debt stock and associated debt service, the prospective path of its deficits, the financing mix of the debt and the evolution of its repayment capacity in terms of foreign currency value of GDP, exports and government revenues (Abrego and Ross, 2001). Projections of the debt dynamics provide a relationship between debt sustainability and macroeconomic policy. The integrity of such projections determines the extent of their usefulness in establishing debt sustainability (Lewis et al, 2011).

In measuring debt burden, the literature considers a number of indicators. In this context, Ogunlana (2005) considered several indicators to measure debt burden and its sustainability. The indicators are usually reported in percentages (ratios).These include: Debt Stock/Export, Debt Service/GDP, Debt Service/Export, Debt Stock/GDP, Reserves/Import and Reserves/Debt Stock. Each of these indicators has its merits and limitations, implying that they should be used in combination and with caution. The strength of any economy depends on its output and export potentials. Its debt stock with regard to its export should be well balanced and sustainable. Similarly, external debt stock/GDP is as called measure of debt stock position. It measures foreign presence in an economy in the form of past reliance on

contractual foreign capital inflow with the potential of attracting capital outflow in the future. Whether these will create debt burden in the future or not depends on the terms of the loan regarding its maturity structure, interest rate and usage.

The Debt Service/Export and Debt Service/ GDP indicate the proportion of exports and national output that are committed to service of debt incurred. In particular, debt service/export is a liquidity measure. The debtor's ability to meet debt servicing obligation declines as the ratio increases. This directly shows that the debt is likely to be unsustainable. This situation can be costly as it can require greater adjustment to compensate for adverse balance of payments developments. For the debt service/GDP, it measures the magnitude of current domestic output used in meeting debt service commitments entered in the previous period. The Reserves/Debt Stock ratio, though not a common measure of debt sustainability, evaluates the proportion of the total debt stock of the borrower that is to be paid off with reserves. The greater the ratio, the more comfortable the debtor appears to be in terms of its capacity to meet its external commitments. Similarly, the Reserves/Import ratio measures the capacity of the country to pay for its imports. The debt burden indicators suffer the limitations prevalent to ordinal measurement. For instance, a country with a low ratio of debt stock/GDP may record unsustainable external debt if the value of exportable constitutes a very small proportion of its GDP. Foreign exchange resources may not be available to meet its debt service payments. In addition, the debt/GDP may also be influenced by exchange rate since the depreciation of the local currency can increase the ratio while physical output and debt stock in foreign currency remain unchanged.

Another important dimension to measuring the burden or sustainability of external debt is the use of the net present value (NPV) of such debt in terms of the discounted value of future debt service payments. However, the problem with this is that it compares future debt service obligations with existing repayment capacity without considering the country's ability to grow. This is particularly relevant when the debt maturity period is long. Moreover, while NPV indicators may signal debt servicing difficulties sometime in the future, they do not provide information on when these problems may become pressing. Similarly, the discount rate may vary with market conditions. The NPV approach has to its advantage the capacity to make an effective comparison of debt burden among the countries on the same level of development. Some general thresholds have been considered in the empirical literature for each of these ratios under the enhanced HIPC Initiative beyond which a country's debt might be considered unsustainable. These include NPV Debt-to - Export $\geq$ 150 per cent, Export-to- GDP $\geq$ 30 per cent, Government Revenue-to-GDP $\geq$15, NPV Debt – to- Government Revenue $\geq$ 250 per cent, Debt Service-to-Export $\geq$ 15 per cent and Debt Service-to- Revenue $\geq$ 25 percent.

Kappagoda and Alexandra (2004) advance three critical indicators to determine debt sustainability: The first indicator is the present value of debt to GDP ratio: The GDP figure used is the average of the current year and two preceding years. Comparisons of GDP demonstrate the size of debt in comparison to the size of the economy. The second indicator is the present value of debt to export ratio: The exports figure used is the average of the current and the two preceding years. Comparisons to exports demonstrate the ability to pay for the debt, however the availability of funds to pay for the debt depends on the openness of the economy and arrangements made for attracting foreign direct investment. The third indicator is present value of debt to government revenues ratio: The government revenues figure used is the average of the current year and two preceding years.

METHODOLOGY

Empirical Model

The model used in this study is an adapted synthesis of the model previously used by Iyoha (1997) and Kasidi and Said (2013). Functionally, it is specified as:

RGDP= (EXTD, EXTDSP, EXP, FDI,INV, EXR) (1)

The econometric equation becomes;

$RGDP = \alpha_0 + \alpha_1 EXTD + \alpha_2 EXTDSP + \alpha_3 EXP + \alpha_4 FDI + \alpha_5 INV + \alpha_6 EXR + e_t$ (2)

Where:

RGDP = real GDP (endogenous variable to measure economic growth); EXTD= external debt stock to GDP (a proxy for debt overhang);

EXTDSP=external debt service ratio-measured as the ratio of total debt service payments to export of goods and services;

EXP= export earnings as percentage of GDP FDI= foreign direct Investment to GDP percent

INV= real gross domestic capital formation to GDP percent EXR=exchange rate of the Nigerian currency (Naira) to the US Dollar e_t= Stochastic error term

$\alpha_1 - \alpha_6$coefficients of explanatory variables

A priori expectations: $\alpha_1, \alpha_2 < 0; \alpha_3, \alpha_4, \alpha_5, \alpha_5 > 0; \alpha_6 >< 0$

Method of Empirical Analysis and Data

The study employs the techniques of co-integration and error correction modeling (ECM) in order to estimate a more specific relationship between external debt and economic growth in Nigeria. The ECM, as a tool of analysis overcomes the problem of spurious regressions through the use of appropriate differenced variables in order to determine the short term adjustments in the model. Co-integration analysis on the other hand provides the potential information about the long term equilibrium relationship of the model. Since time series generally exhibit a non-stationary pattern in their levels, unit root testing as a pre-testing device for co-integration is carried out in order to determine the degree of stationary. If the time series variables are found to be non– stationary, an appropriate difference mechanism is adopted to ensure their stationary before they can be entered for co-integration test. Annual time series data covering the period 1980 to 2015 is used for the study. The relevant data for the variables are sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin.

EMPIRICAL RESULTS AND ANALYSIS

Unit Root Analysis

Unit root test involves the test of stationary for variables used in regression analysis. The importance of

stationarity of time series used in regression borders on the fact that a non-stationary time series is not possible to generalize to other time periods apart from the present. This makes forecasting based on such time series to be of little practical value. Moreover, regression of a non- stationary time series on another non-stationary time series may produce spurious result. A given series is said to be integrated of order *d* (denoted *I(d)*) if it attains stationarity after differencing *d* times. If the series is *I(1)* it is deemed to have a unit root. This situation arises if the first difference of the series is *I(0).* The Augmented Dickey Fuller (ADF) test is employed in order to analyze unit roots in this study. The results are presented in first difference in table 1.The result indicates that the variables were initially non-stationary at levels became stationary after taking the first difference. Therefore, the variables are adjudged to be stationary in first difference form and hence, possess unit roots. Indeed, the variables are integrated of order one (i.e. I [1]).

Table 1: Unit Root Test for Variables in Levels and in First Difference

Variable	ADF Statistic (in Levels)	ADF Statistic (in First Difference)	95% Critical ADF Value	Order of Integration	Remark
RGDP	-2.0154	6.067598	-2.8877	I(I)	Stationary
EXTD	-1.7142	-7.856330	-2.8877	I(1)	“
EXTDSP	-0.8950	-9.964780	-2.8877	I(I)	“
FDI	-1.3970	-8.732199	-2.8877	I(1)	“
INV	-1.0272	-6.643012	-2.8777	I(1)	
EXPT	-2.1421	-7.494503	-2.8777	I(1)	‘’
EXR	-1.9862	-6.562398	-2.8877	I(1)	‘’

Source: Authors' computation extracted from Eviews (2018).

Cointegration Test

Having established that the series in the analysis are all I(1) variables, possessing unit roots, we determined their co-integration status. Co-integration of a vector variable implies that the number of unit roots in the system is less than the number of units in the corresponding univariate series (Granger & Weiss, 1983; Granger, 1986; Engle & Granger, 1987). The Johansen Co-integration method is used for this analysis because the study involves the use of multivariate estimations. The results from the Johansen multivariate co-integration test are presented in Table2.

Table 2: Johansen Multivariate Cointegration Tests Results.

Maximum Eigenvalue Test			
Null Hypothesis	Test Statistic	Critical Value at 5%	Hypothesized No of CE(s)
r = 0*	175.12	94.15	None**
r ≤ 1*	102.08	68.52	At most 1**
r ≤ 2*	61.40	47.21	At most 2**
r ≤ 3*	36.85	29.68	At most 3**
r ≤4*	15.62	15.41	At most 4*
r ≤5*	5.52	5.52	At most 5*

****(**) denotes rejection of the hypothesis at 5% (1%) significance level***.
L.R. test indicates 6 cointegrating equation(s) at 5% significance level.
Authors' computation extracted from Eviews (2018).

As can be seen from the table, the λ-max test statistic indicates that there are at least six plausible cointegrating vectors among the variables since the hypothesis of no co-integrating vector (r=0) is to be rejected. This implies that a long run equilibrium relationship exists among these variables.

Error Correction Model

The results of the short-run dynamic error correction model showing the response of external debt to economic growth and other variables is shown in Table 3.

Table 3: The Error Correction Model (ECM) Results

Dependent Variable: RGDP		
Variable	**Coefficient**	**t-ratio**
C	222.35	5.408
ΔLEXTD	-0.003	-2.482
ΔLEXDSPX	-51.60	-0.867
ΔLFDI	0.212	2.641
INV	0.194	2.950

ΔLEXP	0.153	0.170
ΔLEXRT	55.303	-0.652
ECM(-1)	-0.72	-2.473
$R^{2=}$0.92; Adjusted R^2 =0.91	F-Value=91.78	DW Statistic=2.07

Source: Author's computation (2018)

The adjusted R-squared value of 0.91is high and indicates that about 91percent of the systematic short term variation in real GDP is explained by changes in the explanatory variables including the ECM. The F-value of 91.78 is highly significant at the 1 percent level and hence, validating the hypothesis of the existence of a significant linear relationship between economic growth andits explanatory variables. The Durbin Watson statistic of 2.07 shows that there is no serial correlation in the model, implying that the model can be used for structural and policy analysis.

A close examination of the estimated coefficients of the explanatory variables reveals that that they all possess the required signs in line with theoretical expectation. Two of the coefficients (external debt and foreign direct investment) pass the significance test at the 5 percent level. In particular, the results show that increase external debt stock reflected in the debt overhang has a depressing and deteriorating impact on growth. As external debt grows, economic performance tends to decline appreciably. This finding is in consonance with findings of Iyoha, (1997) for Nigeria and Ocampo (2004) on the negative impact of external debt on economic growth of developing countries.

The coefficients of FDI and domestic investment (real gross domestic capital formation) have the expected positive signs and are significant at the 1 percent level respectively. This inevitably shows the high yielding growth-capacity of foreign direct investment and domestic capital accumulation) in Nigeria. Invariably, FDI stimulates economic growth through channels of innovation, transfer of advanced technology and managerial enterprise. The result is corroborated by the findings of Baliamount- Lutz (2004), Adepoju, Salau, &Obayelu (2007). Export earning though positive is not significant at the 5 percent level. This could be attributed to the fact that in a developing country like Nigeria, exports are concentrated on a narrow range of primary products that are subjected to internationally generated and transmitted shocks (Iyoha, 2004).Compounded by this, is the fact the increase debt service ratio resulting from excessively large debt stock diverts the lean export resources away from growth-enhancing projects, thereby making export earnings have an insignificant effect on economic growth. Debt service payment is not significant even though it has the expected negative signs. Thus, there is evidence of crowding out effect, but it is not very strong. This could be attributed to the accrued benefits of debt service reduction which the country enjoyed within the period when substantial part of the debt owed (to the tune of 18 percent of $30 billion) was cancelled by external debt creditors (Paris Club) and the resulting efficient debt management policies by the debt office.

The empirical results also show that the coefficient of exchange rate is negative but not significant at the 5 percent level. This implies that exchange rate does not have any significant effect in the determination of economic growth in Nigeria in the short run. Apart from the diagnostic statistics, the coefficient of the error correction term is appropriately negative and is significant at the 5 percent level. Its coefficient indicates that the contemporaneous speed of adjustment to equilibrium long-run real economic growth (RGDP) after a temporary disequilibrium and perturbation is about 72 percent.

CONCLUSION AND RECOMMENDATIONS

This paper has re-examined whether external act depresses economic growth in Nigeria. The empirical results show that it is a disincentive to growth through the debt overhang and crowing out effect (though the effect of the latter is weak). Export earnings, foreign direct investment are found to stimulate growth. The exchange rate variable (a measure of macroeconomic policy) on the other hand is found to have a destabilizing effect on economic growth.

External debt accumulations have implications for economic growth in Nigeria. Procuring external debt is not the main issue but on how productive and judicious the resources are put. Investment financed by foreign borrowing should have a real economic rate of return that is at least equal to the rate of interest. In this wise, external loans should be used to finance export-increasing projects or import-decreasing investment, since the loans must be paid in foreign exchange. Such loans should be channeled to increasing the productive capacity of the economy in order to enhance easy repayment of such loans. In light of this, repayments should be such that the benefit of the debt contracted is not outweighed by the cost, otherwise the rationale for procuring the debt in the first place becomes unjustified.

In this regard, policy makers should implement proper and effective debt management policies that will not only check the growth and repayment of debts, but that would help in maximizing the growth-effects of such external debt. This is because external debt can be growth-enhancing up to a certain level before it begins to have a depressing effect on growth. Putting appropriate measures in place to enhance the benefit of external debt should be the thrust of policy makers. Fiscal discipline should be instituted at the local, state and federal level to reduce unconscionable external borrowing. In addition, since foreign direct investment (FDI) is found to be critical to rapid economic growth, in terms of its resource augmentation capacity, in addition to increased exports, policies that encourage inflow of foreign direct investment and economic diversification for exports should be implemented. Sound and stable macroeconomic policies and institutional framework are also important. It is only through this that the country can be put on the path of steady and sustained economic growth and development.

REFERENCES

Abrego, M.L., & D. Ross, C. (2001). *Debt relief under HIPC initiative: context and outlook for debt sustainability and resource flows. World Institute for Economic Research*, International Monetary Fund. Working Paper No. WP/01/14.

Adam, J. A. (2004). *Foreign debt, economic growth, and Nigeria's debt servicing capacity*. Doctoral Dissertation, Department of Economics, University of Ibadan.

Adepoju, A.A., Salau, A. S. & Obayelu, A. E. (2007). *The effects of external debt management on sustainable economic growth and development: Lessons from Nigeria.* MPRA. Paper No.2147.

Adesola, W.A. (2009). Debt servicing and economic growth in Nigeria: An empirical investigation, *Global Journal of Social Sciences, 8* (2), 1-11.

Afxention, F., & Serletis, M. (1996). *External debt and per capita growth in moderately and severely indebted countries*, International Monetary Fund.Working Paper No. 23.

Audu, I. (2004). *The impact of external debt on economic growth and public investment: The case of Nigeria.* African Institute for Economic Development and Planning (IDEP).Working Paper 6.

Ayadi, F.S., &Ayadi, F.O (2008). The impact of external debt on economic growth: A comparative study of Nigeria and South Africa, *Journal of Sustainable Development in Africa, 10*(3), 234-264.

Ayandiji, D. (2010). Globalization and the challenges on national development: the case of Post Debt Relief in Nigeria. *African Journal of Political Science, 6*(4), 72-80.

Bakare, A.S. (2010). Debt forgiveness and its impact on the growth of Nigerian economy: An empirical study. *Pakistan Journal of Social Sciences, 7*(2), 34-39.

Baliamoune-Lutz, M. N. (2004). Does FDI contribute to economic growth? Knowledge about the effects of FDI improves negotiating positions and reduces risk for firms investing in developing countries. *Business Economics, 39(*2), 49-57.

Bowe, M. & Dean J.W. (1997). Has the market solved the foreign debt crisis? *Princeton Studies in International Economics, 83*, 45-60.

Borensztein, E. (1990). *Debt overhang, debt reduction and investment: The case of the Philippines*. International Monetary Fund.Working Paper No. WP/9077.

Borensztein, E. (1991). Will debt reduction increase investment? *Finance and Development, 28*(1), 332-50.

Bosworth &Collins, P. (2003). *Debt and economic growth in developing and industrial Countries*. Columbia University. Department of Economics. Working Paper 34.

Box, G. E.P., Jenkins, G. M.,& Reinsel, G. C. (1994). *Time series analysis, forecasting and control (*3rd ed.). Prentice Hall, Englewoods Clifs.

Central Bank of Nigeria (CBN) (2016). *Statistical Bulletin*, CBN, Abuja, Nigeria.

Chibber, A., & Pahwa, S. (1994). *Investment recovery and growth in Nigeria: The case for debt relief*. In African Debt Burden and Economic Development. Selected Papers for the 1994. Annual Conference of the Nigerian Economic Society.

Cohen, D. (1993). Large external debt and slow domestic growth: A theoretical analysis. *Journal of Economics Dynamics and Control, 19(*5-7), 1141-1163.

Ekpo, A., & Egwaikhide, F. (1998). *External debt and growth: the Nigerian case*. NISER Working Paper.

Engle, R.F., & Granger, C.W.J. (1987). Cointegration and error correction: representation, estimation and testing. *Econometrica, 55*(2), 231- 276.

Essien, E.A., & Onwioduokit, E.A. (1998). Foreign debt and economic growth: An empirical analysis.

Ezeabasili, V.N. (2006).Nigeria external debt: past, present and future. *The Certified National Accountant, 14*(1), 25-43.

Ezeabasili, V.N., & Isu, H.O. (2011). Nigeria's external debt and economic growth: An error correction approach. *International Journal of Business and Management, 6*(5), 157-171.

Fosu, A.K. (1996). The impact of external debt on economic growth in Sub Saharan Africa. *Journal of Economic Development, 21*(1), 93-118.

Fosu, A.K. (1999). The external debt burden and economic growth in the 1980s: evidence from Sub-Saharan Africa. *Canadian Journal of Development Stud*ies, *20*(2), 307-318.

Gana, J. M. (2002). *Nigeria's external debt: causes and implications*. Paper presented at National Center for Economic Management and Administration, Ibadan.

Geiger, L.T. (1990). Debt and economic development in Latin America. *The Journal of Developing Areas, 24(*2), 181-194.

Gohar, M., & Butt, F. (2012). *The impact of external debt servicing on the growth of low-income countries*. Sukkur Institute of Business Administration. Working Paper in proceedings of International Conference on Business Management.

Granger, C., & Weiss, A. (1983). *Time series analysis of error correction models. In studies in econometrics, time series and multivariate statistics*. Academic Press. New York, 255-278.

Granger, C. (1986). Developments in the study of co-integrated economic variables. *Oxford Bulletin of Economics and Statistics, 48*(3), 213-228.

Hoeffler, A. E. (2002). The augmented Solow model and the African growth debate. *Oxford Bulletin of Economics, 64*(2), 135-58.

Iyoha, M.A. (1997). *An econometric study of debt overhang, debt reduction, investment and economic growth in Nigeria*. National Centre for Economic Management and Administration. Monograph No. 8.

Iyoha, M.A. (1997). Policy simulations with a model of external debt and economic growth in Sub- Saharan African Countries. *Nigeria Economic and Financial Review*, *2*(2), 1-16.

Iyoha, M.A. (2004). *Macroeconomics: Theory and Policy*. Revised edition. Benin City. Mindex Publising.

Kappagoda, N. & Alexander, N. C. (2004). Debt sustainability framework for low income countries: Policy and resource implications. North-South Institute.

Karagol, E. (2002). The causality analysis of external debt service and GNP: The case of Turkey, *Central Bank Review*, *2*(1), 39-64.

Kasidi, F., & Saidi, A. M. (2013). Impact of external debt on economic growth: A case study of Tanzania. *Advances in Management & Applied Economics. 3*(4), 59-72.

King, B. B. (1968). Notes on mechanics of growth and debt. International Bank for Reconstruction and Development. World Bank Staff Occasional Paper6. The John Hopkins University Press.http://documents.worldbank.org/curated/en/673481468778783593/Notes-on-the mechanics-of-growth-n-debt.

Krugman, *P*. (1988). Financing vs. forgiving a debt overhang: Some analytical notes. *Journal of Development Economics, 29* (3), 253-268.

Lewis, M., Giugale, S. Lizondo & Desruelle, D. (2011). Debt Sustainability analysis. *International Monetary Fund*. *4*(21), 54-66.

Malik, S., Hayat, M.K.,& Hayat, M.U. (2010). External debt and economic growth: Empirical evidence from Pakistan. *International Journal of Development Economics*, *4(*6), 86-103.

Morisset, J. (2002). Can debt reductions restore economic growth in highly indebtedcountries?. *RevieD' economiePolitique, 101*(4), 639-666.

Ogunlana, A. (2005). *Nigeria and the burden of external debt: The need for debt relief.* Central Bank of Nigeria. Available at http://www.g24.org/TGM/ongu0905.pdf accessed on 15.02.2013.

Ogunmuyiwa, M.S. (2011). Does external debt promote economic growth? *Current Research Journal of Economic Theory*, *3*(1), 29 – 35.

Omoruyi, S. (2005). *Debt burden (sustainability) indicators*. Paper presented at regional Course on Debt Recording and Statistical Analysis, Organized by WAIFEM, July 18-29, Lagos.

Osinubi, T. S., & Dauda. (2006). External debt and growth in Nigeria. *Journal of Economics*, *5*(2), 41-66.

Presbitero, A. (2005). The debt-growth nexus: A dynamic panel data estimation. Rivista Italiana Degli Economisti, *11*(3), 417-462.http://ssm.com/abstract=785965.

Sachs, J. (1988). *The debt overhang of developing countries in debt stabilization and development.* Essays in memory of Carlos Diaz Alejandro, Oxford.

Sachs, J. (1989). *The debt overhang of developing countries, Debt stabilization and development*. Cambridge MA: Basil Balckwell.

Sachs, J., & Kenen, P. (1990).The debt crises structural explanation of country's performance. *Journal of Development Economics, 29*(3), 271-306.

Savvides, A. (1992). Investment slowdown in developing countries during the 1980s: Debt overhang or foreign capital inflows. *Kyklos, 45*(3), 363-378.

Sulaiman, L.A., & Azeez, B.A. (2012). Effect of external debt on economic growth of Nigeria. *Journal of Economics and Sustainable Development, 3*(8), 2222-2855.

Were, S. (2001). Structural reforms, economic growth and poverty reduction. *Journal of Development Economics, 2*(5), 22-43.

Were, M. (2001).*The impact of external debt on economic growth in Kenya: An empirical assessment*. World Institute for Development Economics Research. *Paper No.* DP2001/116.

IMPACT OF INDEPENDENT DIRECTORS ON FIRM PERFORMANCE IN SELECT INDIAN COMPANIES

Jai Prakash Sharma[1] and Amrita Singh[2]

In the wake of the corporate governance scandals in India, concept of Independent directors has grappled academicians and policy makers to do a reality check as to whether these independent directors add value to the firms or not. The main objective of the paper is to study the impact of presence of independent directors on the financial and market performance of listed Indian companies. The study uses multiple regression analysis to test the relationship amongst variables. The results of the analysis suggest that presence of independent directors has a positive though weak impact on accounting returns of the company measured in terms of return on assets and return on equity. The impact of independent directors on returns of the company is found to be positive as well as significant. Further it is observed that impact of independent directors on market returns is relatively more significant as compared to the accounting returns. Ironically, it is also observed that size of the company measured in terms of its asset base has rather negative impact on its returns. Furthermore the study also develops an Independent Director Index which has never been used before in any other study worldwide.

Keywords: *Independent Directors, Firm Performance, Multiple Regression.*

INTRODUCTION

Director independence has been the focus of most of the corporate governance regulatory reforms across the world. Presence of independent directors on the board of listed companies is seen as an integral element of a company's corporate governance process and has become a pre requisite for good governance. Corporate governance scandals have caused a crisis of confidence in the corporate sector worldwide including India. Post the Satyam debacle the focus of regulators has shifted on the independent directors and lead to an era of governance reforms in India that increasingly stress on the role of independent directors to achieve higher standards of governance in companies. While legal reforms have been put in place the main question laundering the academicians as well as regulators is "*Whether independent directors are actually required or not or their independence is a mere myth and lends no push to improved performance or governance of the company".*

There is a significant body of literature on corporate governance, which has studied the impact of board and its composition on the performance of the company. Jensen and Meckling (1976) argued that a bigger board size improves the effectiveness of the board and helps in bringing down the agency cost thereby leading to better financial results. Adam and Mehran (2005), Dalton (2005) and Kiel and Nicholson (2006) also argued that larger board increased the diversity in terms of skills, experience,

[1] Former Professor of Law & Corporate Governance, Former Head, Department of Commerce and Dean of Faculty of Commerce & Business, Delhi School of Economics, University of Delhi.
[2] Assistant Professor, Shri Ram College of Commerce (SRCC), University of Delhi.

gender, knowledge and nationality. Fama and Jensen (1983) and Raheja (2005) suggested that although inside directors have an informational advantage but outside directors bring in neutrality and help solve the principal- agency problem. On the other end, Hermalin and Weisbach (1991) and Lipton and Lorsch (1992) argued that firm performance is insignificantly related to higher proportion of outsiders on the board. Bhagat and Black (1998) also found no consistent evidence that the proportion of independent directors affected future firm performance. They found that high proportion of independent directors rather correlated with slower growth. Thus it is observed that Impact of Independent directors on the firms performance is to a certain extent culture bound.

Ronald ChibuikeIwn-Egwivonwu (2010) also in his study asserted that studies conducted in the developing countries depict a positive correlation while those conducted in U.S found no positive relation between presence of outsiders on board and firm performance. This phenomenon could be attributed to the fact that in the Anglo Saxon economies the major governance challenge is to safeguard the interest of the scattered shareholders form the greedy management but developing countries specially India unlike the west suffers from majority- minority agency issue where the major challenge of the independent director is to protect the interest of the minority shareholders from the dominating concentrated shareholders.

Thus it is observed that the though companies are realising the importance of having an independent board still its impact on returns is debatable. Moreover it is also felt that most of the studies have analysed the role of non executive boards on the performance of companies but very few studies have focussed purely on independent directors and their impact on performance and governance measures. In light of the above observations the following paper attempts to study the Impact of Independent Directors on performance of select listed companies in India. The paper is divided into six parts. The first part briefly discusses the evolution of the concept of independent directors in India. The second part talks about the literature review. Third and fourth part lay down the objectives and research methodology of the paper. Fifth part of the chapter is based on empirical analysis and aims to establish the relationship between independent directors and corporate performance. Last part of the paper lays down the conclusion and limitations of the study.

Evolution of Independent Directors in India

The concept of Independent directors (ID) is new to India. The concept was originally introduced in U.S. during 1950’sand later moved to U.K. in 1990’s. In India, the concept of Independent directors gained momentum with the introduction of corporate governance in late 90’s. The Companies Act, 1956 did not directly mention about Independent Director's and no provision existed regarding the compulsory appointment of Independent Director's on the board. However, Clause 49 of the listing agreement which is applicable to all listed companies mandated the appointment of Independent Directors on the board. In spite of the fact that most of the companies were adhering to the provisions of the Clause 49, scams and frauds were on a rise. With the growing corporate scams and the alleged involvement of Independent Directors in them, a need was felt to update the Act and to make it globally compliant.

The Companies Act 2013 that replaces the old Companies Act 1956 is regarded as a landmark change in the corporate world after almost six decades. The new act contains comprehensive provisions related to corporate governance and independent directors. The Companies Act 2013 was passed by the parliament on 29thAugust, 2013 and was made partially effective by implementing 98 Sections w.e.f. 12thSeptember 2013. The Ministry of Corporate Affairs, on 26th March 2014 notified a majority of the remaining sections of the Companies Act, 2013, including sections 139 to 148, relating to audits and auditors. The Act was stated to be effective from 1st April, 2014.

As per sec 149(6) of companies act 2013, an independent director in relation to a company, means a director other than a managing director or a whole-time director or a nominee director,—

a) who, in the opinion of the Board, is a person of integrity and possesses relevant expertise and experience;

b) (*i*) who is or was not a promoter of the company or its holding, subsidiary or associate company

(*ii*) who is not related to promoters or directors in the company, its holding, subsidiary or associate company

c) who has or had no pecuniary relationship with the company, its holding, subsidiary or associate company, or their promoters, or directors, during the two immediately preceding financial years or during the current financial year;

d) none of whose relatives has or had pecuniary relationship or transaction with the company, its holding, subsidiary or associate company, or their promoters, or directors, amounting to two per cent. or more of its gross turnover or total income or fifty lakh rupees or such higher amount as may be prescribed, whichever is lower, during the two immediately preceding financial years or during the current financial year;

e) who, neither himself nor any of his relatives—

(i) holds or has held the position of a key managerial personnel or is or has been employee of the company or its holding, subsidiary or associate company in any of the three financial years immediately preceding the financial year in which he is proposed to be appointed;

(ii) is or has been an employee or proprietor or a partner, in any of the three financial years immediately preceding the financial year in which he is proposed to be appointed, of—

(A) a firm of auditors or company secretaries in practice or cost auditors of the company or its holding, subsidiary or associate company; or

(B) any legal or a consulting firm that has or had any transaction with the company, its holding, subsidiary or associate company amounting to ten per cent. or more of the gross turnover of such firm;

(iii) holds together with his relatives two per cent. or more of the total voting power of the company; or

(iv) is a Chief Executive or director, by whatever name called, of any non-profit organisation that receives twenty-five per cent. or more of its receipts from the company, any of its promoters, directors or its holding, subsidiary or associate company or that holds two per cent. or more of the total voting power of the company; or

(*f*) who possesses such other qualifications as may be prescribed.

Every listed public company was required to have at least one-third of the total number of directors as independent directors. However, the Central Government could prescribe the minimum number of independent directors in case of any class or classes of public companies. Given the recent trend of globalization, the importance of board of directors who are viewed as vehicles of growth of a company has sharply increased.

LITERATURE REVIEW

Over the last thirty years various studies have been conducted on Independent Directors and their impact on the firm performance. As per the agency theory the board of directors are agents of the shareholders and their primary objective is to protect the interests of the shareholders. Shareholders are normally suspicious of boards that are mostly composed of insiders. It has often been argued by many that independent board members are more effective monitors than senior corporate managers. Hence, companies with more independent board members are more likely to be managed in the interest of the shareholders. Various studies have been conducted to study the association between board structure and overall firm performance and found a positive association between them. Liang and Li (1999) studied the association between board characteristics and firm performance measured in terms of Tobin's q and Return on Assets of 228 small private firms in China. Multiple regression analysis was used to study the relation between dependent and independent variables. They concluded that presence of outside directors on boards positively impacted returns on investment.

Black et al. (2006) constructed a corporate governance index of 515 Korean companies based on a 2001 Korea Stock Exchange survey. The study used OLS and instrumental variable evidence for explaining the market value of Korean public companies association with the index. They constructed a Korean Corporate Governance Index (KCGI) that consisted of five sub indices Shareholder Rights index, Board Structure index, Board Procedure index, Disclosure index and Ownership Parity sub index. The results suggested that KCGI predicted a 0.47 increase in Tobin's q (about a 160% increase in share price) which was statistically a strong prediction. They further asserted that greater board independence leads to higher share prices in emerging markets. Khanchel El Mehdi (2007) examined corporate governance in Tunisia, North Africa, by analysing the board, the ownership structures and the financial market. The study analysed 24 Tunisian listed firms using panel data set for the period 2000 to 2005. They found a strong relationship between corporate governance indicators measured in terms of board size, audit committee and Independent Directors composition and corporate performance. Kajola (2008)examined the relationship between corporate governance variables like board size, composition, chief executive status and audit committee and performance measures like return on equity and profit margin. Analysis was conducted on a sample of 20 Nigerian firms between 2000 to 2006 using panel methodology and

OLS estimation. The results suggested a significant positive correlation between board size and return on equity.

Chakrabarti et al. (2010) conducted an event study to analyse the value added by Independent Directors in the emerging markets. Their study was based post the Satyam fiasco which lead to ceasation of many Independent Directors from the Indian boards. They found that in January 2009, the four-day cumulative abnormal return surrounding director resignations was -1.3%. The effect was strong even after controlling for unobserved firm and director characteristics using fixed- effects and was also reflected in ex-post firm performance measured in terms of Tobin's q. They found a positive impact of Independent Directors on the boards of the company. In fact they found the effect to be disproportionately greater for those Independent Directors who were members of audit committees or possessed business expertise. Kumar and Singh (2012) examined the efficacy of outside directors on the corporate boards of 157 non- financial Indian companies listed on BSE 200 for the year 2008. They studied the impact of presence of non-executive directors on the market performance of the company measured in terms of Tobin's q. OLS Regression was used to find the association between the two. The research revealed that while the proportion of grey directors on board had a significant negative impact on the market value of the firm, the Independent Director's proportion had an insignificant positive effect on the same. Varshney et al. (2012) investigated the relationship between corporate governance and firm performance in the Indian context by constructing a corporate governance index based on internal and external corporate governance mechanisms. The study used Economic Value Added (EVA), Return on Networth(RONW), Return on Capital Employed(ROCE) and Tobin's q to measure firm performance. They concluded a positive impact of corporate governance on Economic Value Added but no significant impact on RONW, ROCE or Tobin's q.

Contrary to this, there are several studies that indicated negative or no association between board characteristics and firm performance. Many studies suggested that limiting board size to a certain level improves the firm's performance because the benefits of larger boards are outweighed by the increased monitoring costs and poorer communication and decision making of larger groups. Bhagat and Black (1998) found no consistent evidence that the proportion of Independent Directors affected future firm performance. They found that high proportion of Independent Directors correlated with slower growth and, less strongly, with lower stock price returns in the recent past, however this correlation disappeared for future performance. They found evidence that proportion of inside directors correlates with higher past stock price returns but had no impact on future prices. This could be due to the reason that companies that faced slow growth increased the proportion of outside directors on their boards, assuming that it would lead to better corporate performance.

Erickson et al. (2005) asserted that in a dominant shareholder regime returns were negatively affected by presence of Independent Directors. The study examined Canadian public companies between 1993 and 1997 and found a negative relationship between the fraction of outside directors and firm value. However, the authors suggested that Independent Directors on the board were able to mitigate agency problem arising out of dual class common stock. Caselli et al. (2007) concluded that Independent Directors impacted the rate of return only on those projects that required special skills. They analysed Italian closed-end funds from 1999 to 2003, and found that busy Independent Directors did not significantly affect the internal rate of return. The study suggested that when performance is

unsatisfactory the Independent Directors usually resign and shave off losses. Garg (2007) conducted a study on companies listed on BSE 200 to find the association between board composition and firm performance. Multiple regression and panel data using random effect model was used to conduct the analysis. The results of the study suggested an inverse association between board size and firm performance. The impact of board independence on firm performance was found to be highest when the board independence was between 50 and 60 per cent. The study found that Independent Directors did not effectively perform the monitoring role due to lack of training, improper definition of roles tasks, and responsibilities. Balasubramanian et al. (2008) conducted an extensive survey in early 2006 of listed Indian public companies. They build an Indian Corporate Governance Index (ICGI) consisting of five sub indices Board Structure index, Disclosure index, Related Party Transactions index, Shareholder Rights index and Board Procedure index. OLS regression was used to find out association between firm performance and ICGI. The study concluded a positive association between Shareholder Rights index and firm market value. They further asserted that the association between remaining indices of ICGI with firm market value was insignificant. The study proposed that India's legal requirements were already quite strict and over compliance does not produce valuation gains to the company.

Black (2010) reasoned that board independence in India was not strongly associated with firm performance because the minimum requirements for board independence were already stricter and over compliance did not lead to improvement in firm value. Sarkar et al. (2012) constructed a Corporate Governance Index for 500 large listed firms in the Indian for the period 2003 to 2008. The index was constructed on four crucial areas namely, the board of director, ownership structure, audit committee, and the external auditor. They took a six year period to incorporate the evolution in corporate governance going on in the country and worldwide during this period. Their analysis revealed a strong association between the board indices and firm performance, thereby suggesting that outside directors add value to the firm. Hussein and Venkatram (2013) studied the effect of corporate governance variables like board size, board composition and board activity on the firm value measured in terms of Tobin’s q of agri-input firms in India. The study was based on panel data collected from 64 randomly selected agro firms over the period 2007 to 2011. Fixed Effect Model (FEM) and Random Effect Model (REM) were estimated to evaluate the effectiveness of corporate governance on Tobin’s q. The results concluded that only board size had a positive and significant impact on firm performance. Board composition and Board meeting had no effect on the financial measures. Hutchinson (2014) carried an extensive research and tried to identify the variables of the board structure that had an impact on the firm’s performance. The study was conducted on 229 Australian firms and it was found that investment opportunities were strongly associated with a higher proportion of executive directors on the board. The study further suggested a negative relation between the proportion of non- executive directors and firm’s performance.

Thus with the present review of published literature it was identified that board independence and its impact on corporate performance is culture bound. In the western context there have been many research studies that were based on methodology that linked elements of board structure to financial measures of corporate performance. These studies focussed on whether the percentage of non-management directors on a board correlate with frequency of CEO replacement, response to takeover bids, or variations in stock prices etc.. Their results disagreed in their statistical significance and, in some cases, even on the positive or negative character of the relationship. On the other hand studies

conducted in emerging economies proposed a positive impact of board composition on both corporate performance and investment opportunities. Chibuike and IwnEgwivonwu(2010)also suggested that influence of Independent Directors on the firm's performance was rather culture bound. While studies in U.S found no positive relation, those conducted in the Asian markets revealed results contrary to those that were done in the European and American markets. Several studies suggested that firms with more Independent Directors performed rather worse. The present study attempts to extend these findings in the Indian context and study the impact of the Independent Directors on the financial performance of select listed Indian companies.

RESEARCH OBJECTIVES AND HYPOTHESIS

Various studies have proposed that the board composition influences organizational performance in either positive or negative manner. Although the issue is debatable, various conceptual analyses have suggested that a firm's board of directors contribute to the process of corporate governance by selecting and evaluating the firm's chief executive officer (CEO) and other top managers, shaping the firm's strategic direction, setting corporate productivity objectives, and assessing business success. As discussed earlier, a number of studies have been conducted worldwide to examine the relationship between the composition of boards of directors and the performance of the firms. Some of the recent studies of Khanchel El Mehdi (2007), Chakrabarti et al. (2010), Haldar and Rao (2013) and Alnaif (2014) proposed a positive relation between board independence sand firm performance whereas Balasubramanian et al. (2008), Al-Matari et al. (2012) and Hutchinson (2014) reported negative association between these variables. In view of the above mentioned research findings and the plight of independence directors in India with respect to their fiduciary duties and powers along with the increasing rate of high profile scams and scandals, the present paper proposes the following objectives:

1. To study the effect of presence of independent directors on the accounting performance of listed companies in India measured in terms of return on assets and return on equity.
2. To study the effect of presence of independent directors on the market returns of the listed companies in India measured in terms of Tobin's q.

On the basis of the above objectives, following hypothesis have been formulated to get empirical results from the proposed study.

1. H_{01}: There is no significant relationship between independent directors and accounting returns of listed companies in India.
2. H_{02}: There is no significant relationship between independent directors and market returns of listed companies in India.
3. H_{03}: The relationship between returns of the company and firm's size is not significant.
4. H_{04}: The relationship between returns of the company and firm's age is not significant.
5. H_{05}: The relationship between returns of the company and firm's leverage is not significant.

RESEARCH METHODOLOGY

The present paper employs secondary data analysis to study the impact of independent directors on firm performance. Multiple regression analysis using SPSS package has been used to test the relationship between Independent Directors and firm performance. An Independent Director Index (IDI) has been constructed using those variables of corporate governance wherein Independent Directors play a pivot role. Data required for constructing Independent Director's Index has been collected through Corporate governance and annual report of the companies considered in the study while accounting and market related information has been collected from CMIE (Centre for monitoring Indian economy) Prowess database and Capital-line Plus. For the purpose of analysis, non-financial companies listed on S&P BSE SENSEX, S&P BSE 100and CNX Niftyas on 1stJanuary 2012 have been taken. There were 132 companies listed on these indices. Financial companies and government controlled companies are excluded from the analysis as they have different provisions related to corporate governance and Independent Directors. A total of 107 companies are obtained of which data for seven companies was not available for more than one year and hence they are not included in the study. Hence 100 companies are studied of which one company data was available for only two years.

Time Period of Study

Data has been collected for the sample companies for a period of five years, starting from 2008-09 to 2012-13. Thus the period of study relates to the correction period after the collapse of Satyam and before the implementation of the Companies Act 2013. This five year period was very crucial for the independent directors market as post the Satyam scam lots of questions arose on the institute of Independent directors and their role in functioning of a corporate. As the study was conducted before the introduction of Companies Act 2013, analysis has been done based on the provisions of revised clause 49 which was applicable before the provisions of the new Act came into practice.

Variables Used in the Study

The study uses Independent Directors' Index (IDI) and control variables as the explanatory variables. The Index has been constructed with the help of those corporate governance variables which have an impact on the independent directors and their effectiveness. Control variables also have been included in the study as independent variables so as to reduce the biasness arising from omitted variables. The control variables used in the study are age, firm size and leverage. These variables have been taken as absolute values except firm size wherein log of assets has been computed for the purpose of running regression. Return on Assets (ROA) and Return on Equity (ROE) have been taken as dependent variables to study the effect of IDI on accounting returns of the company whereas Tobin's q has been taken to study the effect of IDI on market returns of the company.

Independent Directors Index (IDI)

In order to measure the effectiveness of Independent Directors an index known as Independent Directors Index (IDI) has been constructed. Most of the studies in the past have used Corporate Governance Index (CGI) to gauge the effect of corporate governance practices on the financial performance of the company. There has been no study in India or elsewhere that has used an index for

exclusively studying the impact of independent directors on firm performance. The index has been constructed for the period 2008-2013. The IDI consists of four sub-indices namely board index, audit committee index, shareholders grievance committee index and training and evaluation index. Equal weights have been assigned to the variables studied in the index as it is felt that all the variables have equal importance in determining the effectiveness of Independent Directors. The index is constructed on the basis of the survey of literature on the construction of corporate governance index. The description of various sub-indices and the variables used therein are as follows:

- Board Index

The board of directors acts as one of the most important governance mechanisms in aligning the interests of managers and shareholders. A typical board of modern corporations consists of a right blend of executive and non-executive directors. Executive directors refer to those directors who are full time employees of the company and are involved in its day to day operations while non-executive directors are those who are not entrusted with any executive responsibilities and play mostly an advisory role. The outside directors are further classified as Non-Executive Non-Independent Directors and Non-Executive Independent Directors. Non-Executive Non-Independent Directors could be former company officers, relatives of the company officers, or people having business relationships with the company such as investments bankers and lawyers, while Independent Directors have no such affiliations and thus are entrusted with the fiduciary responsibility towards the shareholders. Keeping in mind these perspectives, Board index has been constructed with the help of seven important attributes that describe state of governance with respect to the Board of Directors. These seven attributes are

- *Board Size*
- *Board Independence*
- *Board Meetings*
- *Independent Director's Attendance in board meetings*
- *Independent Director's Attendance in Annual General Meetings*
- *Independent Chairperson*
- *Business*

- Audit Committee Index

Audit committee plays a very crucial role in the efficient governance of an organisation. The management along with the internal auditors of the company prepares the financial statements in accordance with the established accounting principles. These statements are further audited by external auditors who need necessary documents and reports which might be misstated if purely under the control of inside management. Hence it is required to have an audit committee that is comprised of Independent Directors who audit the statements without any biasness. Thus the independence of the audit committee becomes crucial. Keeping in mind the above perspectives an audit committee index has been constructed using the below mentioned attributes

- *Audit committee size*
- *Audit committee independence*
- *Audit committee meetings*
- *Independent Director's attendance in audit committee meetings*
- *Independent Director Chairman*
- *Financial literacy*

- Shareholders Grievance Committee Index

Independent Directors have a fiduciary responsibility towards the shareholders specially the minority shareholders of the company. Revised clause 49 provides for constitution of a Shareholders/Investors Grievance Committee under the chairmanship of a non-executive director to look into the redressal of shareholder and attend investors' complaints. As most of the companies surveyed had Independent Directors as members of such committees hence this variable has also been chosen to construct the index. A sub index has been constructed with two attributes related with this committee mentioned below

- *Independence of shareholders grievance committee*
- *Independent Directors' attendance in meetings*

- Training and Evaluation Index

Revised clause 49 had no mandatory provision of providing training to employees or conducting their performance evaluation, but Companies Act 2013 has provided for training and evaluation of directors for their better performance. However as the period of study was 2008-2013, a sub- index has been constructed keeping in mind the old provisions of the clause 49. The attributes of this index are

- *Training of Independent Directors*
- *Evaluation of Independent Directors*

Thus with the help of the following sub-indices an IDI is constructed by aggregating the scores of all the four sub indices. The analysis suggests that during this five year period the Independent Director score had almost remain same with the maximum value being 31.6 and minimum being 20 with an average of 26.967. Table 1.1 shows the descriptive analysis of the index calculated for the five year period.

Table 1.1 Descriptive Analysis of the Index

	Index 13	Index 12	Index 11	Index 10	Index 09	Avg. Index
N	99	99	99	99	99	99
Mean	27.4444	27.1818	25.9192	27.1212	27.1717	26.9677
Median	28.0000	27.0000	26.0000	27.0000	27.0000	27.2000
Mode	29.00	30.00	27.00	27.00[a]	26.00	29.20
Std. Dev.	2.92847	3.24938	2.81641	3.01788	3.03059	2.68764
Minimum	17.00	18.00	18.00	18.00	20.00	20.00
Maximum	34.00	33.00	31.00	33.00	33.00	31.60

Source: Compiled by Researcher

It is found that the average value of index is 26.96. The Independent Director index ranges from 20 to 31.60. The average mode value of the index is 29.20 which indicates that most of the companies are near to following all the requirements of Independent Directors. The mean and median are almost similar suggesting that the distribution of the Independent Director Index is symmetric. Given a standard deviation of 2.68, the lowest company lies about 4 standard deviations away from the best company in the sample. The reason for consistent scores during this period can be because it was a corrective period for the Independent Directors market which had become cautious after the Satyam fiasco in early 2009. Lot of reforms took place during this period. The Ministry of Corporate Affairs came up with its voluntary guidelines and also lot of speculation was going on regarding the passing of Companies Act 2013. Thus most of the companies were adhering to the mandatory as well as the non-mandatory provisions on corporate governance and Independent Directors.

Descriptive analysis

Table 1.2 demonstrates the descriptive statistics of variables used in the study on an aggregate basis.

Table 1.2 Descriptive Statistics (2008 -2013)

Variables (average of five years)	Mean	Median	Min	Max	Std dev	N
Return on Assets (ROA)	.2661	.2450	-.33	1.46	.24349	100
Return on Equity (ROE)	.2229	.1949	0	1.28	.20425	100
Tobin's q (TQ)	4.1773	2.6040	.64	29.70	4.9403	99
Board size	10.076	9.6	5.20	17	2.7131	100
Independent Directors (ID) on board(%)	.5177	.5080	.32	.77	.09181	100

Non-Executive Chairman (%)	.5556	1	0	1	.48786	100
Board meetings	5.678	5.400	4	11.20	1.3293	100
ID's attendance in board meetings (%)	.8229	.8360	.47	.98	.09463	100
ID's attendance in AGM (%)	.7513	.8040	.14	1	.24120	100
Audit Committee Size	3.89	4	3	6	.70732	100
ID's in Audit Committee (ACIND) (%)	.8244	.8000	.36	1	.16212	100
Audit Committee Meetings (ACM)	5.0422	4.8	3.4	9.2	1.1919	100
ID's attendance in ACM (%)	.9021	.9170	.65	1	.07635	100
Chairman financial expert (%)	.6535	1	0	1	.47824	100
Financial literacy (%)	.4865	.5	0	1	.22426	100
Age of company	47.14	36	4	223	35.294	100
Leverage	.7089	.3880	0	9.57	1. 328	99
Firm size	9.6577	3.280e	149.3	2.21E5	1.4503	99

Source: Researchers Projection in SPSS

Audit committee attributes are also studied. Size of audit committee ranged from 3 to 6 members, showing an average size of 3.89 with a standard deviation of 0.707. The median size of committee is 4 which indicate that most of the sample companies comprised of 4 members in their audit committees. This is consistent with the requirement of revised clause 49 which mandates having a minimum of 3 directors as members of audit committee. The sample shows that Independent Directors in the committee ranged from 36% to 100%, and an average of 82.44% members are Independent Directors with a standard deviation of 0.162. The median percentage of Independent Directors present in the audit committees is 80% which is well above the minimum required. The audit committees of sample companies at an average met around 5 times a year with a standard deviation of 1.1919. The audit meetings ranged from 3.6 to 9.2 times during a year with a median of 4.8 meetings per year. The attendance of Independent Directors in the audit meeting ranged from 68% to 100% with an average of 90%. This shows that Independent Directors actively participated in audit meetings. Analysis of the sample firms revealed that all the 100 companies analysed had Independent Directors as chairman of audit committee. Of these 65.35% of members on an average were financial expert with a standard deviation of 0.47824. In fact, descriptive analysis suggests that almost 48.65% of the audit committee members are financially qualified with a median of 50%.

Further it is observed that average return on assets is 26.61% with a deviation of 0.243. Average Tobin's q of sample firms is 4.1773 which is considerably greater than one, indicating that investor are more willing to pay for the firm's total assets than their book values. Standard deviation is found to be lowest for return on equity and highest for Tobin's q. It is also observed that for all the dependent variables the mean is larger than the median indicating that the returns are rightly skewed.

Multiple Linear Regression Analysis

It is hypothesized in the study that the companies that have higher proportion of independent directors on their boards exhibit better performance than those companies wherein the proportion of independent directors is less. Data gathered through secondary sources is analysed with the help of multiple regression. Regression analysis is run on both cross sectional and pooled data. The study developed 18 separate regression equations to examine the hypothesis and ascertain the impact of Independent Directors on various measures of financial performance:

1. $ROA = \alpha + \beta 1IDI + \beta 2\ AGE + \beta 3\ LEV + \beta 4\ FIRMSIZE + \varepsilon$ ..... Eqn (1)

2. $ROE = \alpha + \beta 5IDI + \beta 6AGE + \beta 7LEV + \beta 8FIRMSIZE + \varepsilon$ ..... Eqn (2)

3. $TQ = \alpha + \beta 9IDI + \beta 10AGE + \beta 11LEV + \beta 12FIRMSIZE + \varepsilon$ ..... Eqn (3)

The reliability of the tools has been checked by employing tests for multicollinearity, autocorrelation and hetroskedasticity. All empirical tests are conducted at 95% significance level using SPSS. The first assumption related to normality of the data. Histogram and PP Plot have been used to measure hetroskedasticity in the independent variables. It is observed that all the 18 models are free from hetroskedasticity as apparent from the histograms and PP plots obtained on running regression in SPSS Package. The second assumption relates with multicollinearity among the independent variables. Multicollinearity is checked for each year as it could affect the overall regression results and lead to wrong estimations. To detect the problem of multicollinearity, variance inflation factor (VIF) has been computed for each of the independent variables using SPSS package. As per Gujarati and Porter (2009)[42], if VIF of a variable exceeds 10, then there could be a problem of multicollinearity. In the analysis it is observed that VIF value does not exceed 10 for any model and hence it can be concluded that the data is free from multicollinearity problem. The next assumption of OLS Regression is that data should be free from autocorrelation**.** Autocorrelation is checked through (d) Durbin Watson (DW) statistic value. As per decision rule, if d lies between 1.5 to 2.5 or in other words close to 2, then there is no first order autocorrelation either positive or negative. In the analysis, DW is within the range mentioned and hence it may be concluded that data is free from autocorrelation problem. The results of the regression are discussed below

Independent Director Index and Return on Assets

Multiple regression analysis is carried out year wise to find the association between ROA and the explanatory variables under study. The results of the regression analysis between IDI and ROA have been shown in table 1.4. The values of F statistic indicate that for all the five years the test is significant at 1% significance level. The VIF values for all the five years are below the benchmark level of 10 and thus it can be said that the analysis is free from multicollinearity. Durbin-Watson value for all the five years ranged from 1.609 to 2.011 which is within the range of 1.5 to 2.5 and hence it can be concluded that the data is free from auto correlation.

The analysis further suggests that for all the five years IDI had a positive and significant impact at 10% or below significance level, on the ROA of the company. Hence we may reject the null hypothesis H_{01} and conclude that there is a significant relationship between independent directors and accounting

returns (ROA) of the company. Firm size has been proxied in terms of total assets of the company. It has been suggested by some authors that bigger firms tend to perform better than smaller firms as they had easy accessibility to the market funds and resources. However, the analysis reveals a negative and significant impact of firm size on the returns of the company. The result is consistent with Bhandari et al. (2014). Thus we may reject the null hypothesis (H_{03}) that there exists no significant relation between firm size and return on assets.

Table 1.4 Regression Results IDI and ROA

		2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
INDEX	Coefficient P-value t-statistic	.017 .057 1.929	.015 .087 1.731	.018 .042 2.065	.019 .023 2.303	.019 .023 2.303
LOGASSET	Coefficient P-value t-statistic	-.069 .000 -3.879	-.067 .000 -3.656	-.038 .025 -2.277	-.055 .001 -3.526	-.055 .001 -3.526
AGE	Coefficient P-value t-statistic	.001 .060 1.906	.001 .256 1.143	.001 .083 1.755	.001 .238 1.189	.001 .238 1.189
LEVERAGE	Coefficient P-value t-statistic	-.044 .049 -1.997	-.053 .026 -2.255	-.043 .015 -2.476	-.037 .008 -2.699	-.037 .008 -2.699
	P-value F-test D-W value R^2 VIF-RANGE	.000 7.008 1.640 23 1.019-1.041	.000 6.036 1.652 20.4 1.039-1.055 .	.001 5.003 1.609 17.6 1.005-1.030 .	.000 7.704 2.011 24.7 1.035-1.126	.000 7.704 2.011 24.7 1.035-1.126

Source: Compiled by Researcher

Age of the company refers to the number of years it has been existing. Older companies are assumed to have better reputation and goodwill as compared to the new companies. The study concluded that age has a positive impact on ROA but is significant only in two years. Thus we can conclude that age though has a positive influence on returns of the company but was not an important variable that impacted returns. Thus we may accept the null hypothesis (H_{04}) that there is no significant impact of age on the earnings of the company. Leverage or debt-equity is assumed to have a negative impact on the earnings of the company as higher leverage tends to reduce shareholders earnings. With this study it may be concluded that leverage has a negative impact on the earnings of the company at 5% significance level for all the five years. Thus the null hypothesis (H_{05}) that leverage does not have a significant impact on earnings of the company measured in terms of ROA may be rejected.

Independent Director Index and Return on Equity

Regression analysis was run on the data for all the five years to find the association between ROE and the explanatory variables under study. The results of the analysis are depicted in Table 1.5 and reveal that for all the five years the test is significant at 1% significance level. The VIF values for all the five years are below the benchmark level of 10 and thus it can be said that the analysis is free from multi co linearity. Durbin-Watson value for all the five years ranged from 1.592 to 2.021and is within the range of 1.5 to 2.5 and hence it can be concluded that the data is free from autocorrelation.

Table 1.5 Regression results of IDI and ROE

		2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
INDEX	Coefficient P-value t-statistic	.015 .056 1.933	.015 .087 1.731	.019 .006 2.807	.015 .026 2.268	.014 .016 2.455
LOGASSET	Coefficient P-value t-statistic	-.039 .016 -2.462	-.067 .000 -3.656	-.038 .006 -2.827	-.043 .001 -3.354	-.039 .002 -3.154
AGE	Coefficient P-value t-statistic	.001 .034 2.150	.001 .256 1.143	.001 .130 1.526	.001 .133 1.514	.001 .046 2.019
LEVERAGE	Coefficient P-value t-statistic	-.027 .176 -1.362	-.028 .183 -1.341	-.021 .133 -1.516	-.016 .147 -1,461	-.015 .282 -1.082
	P-value F-test D-W value R^2 VIF-RANGE	.002 4.449 1.592 15.9 1.019-1.041	.002 4.446 1.665 15.9 1.039-1.055 .	.001 5.148 1.675 18 1.005-1.030 .	.000 5.762 2.021 19.7 1.035-1.126	.000 5.969 1.899 20.3 1.017-1.139

Source: Compiled by Researcher

The analysis further suggests that for all the five years IDI has a significant impact at 10% or below significance level, on the accounting returns of the company measured in terms of ROE. Hence we may reject the null hypothesis H_{01} and conclude that there is a significant relationship between independent directors and accounting returns (ROE) of the company. Firm size is proxied in terms of total assets of the company. It is largely assumed that bigger firms tend to perform better than smaller firms as they enjoy economies of scale and customer goodwill. Contrarily, the analysis revealed a negative but significant impact of firm size on the returns of the company. The result is consistent with Bhandari et al. (2014). Thus we may reject the null hypothesis H_{03} that there exists no significant relation between firm size and return on equity.

Age of the company refers to the number of years it has been existing. Older companies are assumed to have better experience and knowledge. The study concludes that age has a positive impact on ROE but is significant only in two years. Thus it can be concluded that age though has a positive influence on returns of the company but is not an important variable that impacts returns. Thus the null hypothesis H04 that there is no significant impact of age on the earnings of the company may be accepted. Leverage or debt-equity is assumed to have a negative impact on the earnings of the company as higher the debt less the returns. Although in the study the impact is negative but it is insignificant. Thus the null hypothesis H05 that leverage does not have a significant impact on earnings of the company measured in terms of ROE may be accepted.

Independent Director Index and Tobin's q

Regression analysis is run on the data for all the five years to find the association between Tobin's q and the explanatory variables under study. The results conclude that for all the five years the test is significant at 1% significance level. The VIF values for all the five years are below the benchmark level of 10 and thus it can be said that the analysis is free from multicollinearity. Durbin-Watson value for all the five years ranged from 1.574 to 1.763 which is within the acceptable range of 1.5 to 2.5 and hence it can be concluded that the data is free from auto correlation.

The analysis further suggests that for all the five years IDI has a positive and significant impact at 10% or below significance level, on the market returns of the company measured in terms of Tobin's q. Hence we may reject the null hypothesis H_{02} and conclude that there is a significant relationship between independent directors and market returns (Tobin's q) of the company. Firm size has been proxied in terms of total assets of the company. It is largely believed that large amount of assets improve the performance of the company as they help in raising capital easily and thus help the company in taking better advantage of investment opportunities as compared to smaller firms. Ironically the analysis reveals a negative and highly significant impact of firm size on the market returns of the company measured in terms of Tobin's q. The result is however consistent with Bhandari et al. (2014).Thus the null hypothesis H_{03} that firm size does not have a significant impact on Tobin's q may be rejected.

Table 1.6 Regression Results of Impact of IDI and TQ

		2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**
INDEX	Coefficient P-value t-statistic	.250 .047 2.012	.286 .093 1.698	.275 .062 1.890	.317 .080 1.239	.261 .088 1.183
LOGASSET	Coefficient P-value t-statistic	-.653 .013 -2.542	-1.396 .000 -4.030	-.988 .001 -3.481	-1.336 .000 -3.796	-1.233 .000 -3.636

AGE	Coefficient P-value t-statistic	.024 .030 2.208	.016 .266 1.120	.015 .191 1.318	.024 .091 1.705	.017 .227 1.216
LEVERAGE	Coefficient P-value t-statistic	-.684 .035 -2.138	-.874 .052 -1.964	-.528 .077 -1.787	-.517 .101 -1.654	-.602 .104 -1.643
	P-value F-test D-W value R^2 VIF-RANGE	.001 5.413 1.638 18.9 1.020-1.035	.000 5.368 1.763 21.3 1.040-1.055 .	.001 5.337 1.574 18.5 1.005-1.030 .	.000 6.462 1.757 21.6 1.035-1.126	.000 5.744 1.587 19.6 1.017-1.139

Source: Compiled by Researcher

Age of the company refers to the number of years it has been existing. Older companies are expected to perform better as they have accumulated experience and resources that boost investor confidence as compared to smaller firms who are new in the trade. The study concludes that age has a positive impact on Tobin's q but is significant only in two years. Thus it may be concluded that age though has a positive influence on returns of the company but is not an important variable that impacts returns. Hence we may accept the null hypothesis H_{04} that there is no significant impact of age of the company on its earnings measured in terms of Tobin's q. It is presupposed that leverage or debt-equity has a negative impact on the earnings of the company as higher leverage tend to eat up the earnings of shareholders. Although in the study the impact is negative but is significant only in two years.

The results are not consistent and hence it cannot be concluded that leverage has a significant impact on the market returns of the company. Thus the null hypothesis H_{05} that leverage does not have a significant impact on earnings of the company measured in terms of Tobin's q may be accepted.

Thus to conclude it is found that IDI has a significant and positive association in improving both the accounting returns as well as market returns of the company measured in terms of ROA, ROE and Tobin's q. However the impact is comparatively stronger for Tobin's q. Firm size has a negative yet highly significant impact on all the three ratios. Age though has a positive impact on all the ratios but the impact is insignificant while leverage has a negative effect on all the three ratios but the impact is significant only for return on assets.

Regression results with Pooled Data

In the previous section, an attempt has been made to study the impact of presence of Independent Directors on the accounting as well as market performance of the companies on yearly basis. This section has summarised the regression analysis with pooled data for all the five years on 497 firm year observations. In pooled data, the elements of both time series and cross section units are included. Firm year observations have been summarised in the table 1.7 given below

Table 1.7 Firm Year Observations

Year	Number of companies
2008-09	99
2009-10	99
2010-11	100
2011-12	99
2012-13	100
Total	**497**

Multiple regression analysis using enter method is done to find out if there is any association between accounting returns measured in terms of ROA, ROE and TQ with IDI along with control variables such as firm size, firm age and leverage. Results obtained are summarised in the table 1.8. Analyzing the table 1.8, it is observed that linear relationship between the independent and dependent variables is significant and the regression equations for all the three dependent variables are relevant at 1% significance level. Further it is observed that the independent variables explain 19.9% of the variation in ROA. The remaining 80.1% of variance can be attributed to factors other than those which have been used in this study. This indicates a significant but minor influence of the Independent Directors and control variables on the return on assets.

Table 1.8 Regression Results of Pooled Data

		ROA	ROE	TQ
INDEX	Coefficient P-value t-statistic	.019 .029 2.213	.018 .013 2.538	.369 .038 2.109
LOGASSET	Coefficient P-value t-statistic	-.047 .004 -2.963	-.041 .003 -3.010	-1.101 .001 -3.369
AGE	Coefficient P-value t-statistic	.001 .319 1.002	.001 .186 1.333	.017 .209 1.266
LEVERAGE	Coefficient P-value t-statistic	-.047 .011 -2.594	-.023 .143 -1.476	-.686 .065 -1.871

	P-value	.000	.001	.001
	F-test	5.824	5.078	5.467
	D-W value	1.663	1.683	1.585
	R^2	19.9	17.8	19
	VIF-RANGE	1.030-1.036	1.030-1.036	1.028-1.035
			.	.

Source: Compiled by Researcher

Durbin-Watson value is computed to be 1.663 which lies within 1.5 - 2.5 and hence it can be concluded that the analysis is free from auto correlation. It is further observed that VIF values are between 1.030-1.036, thus they are far lower than the cut off value of 10 so multicollinearity is not a serious problem. Thus the regression analysis confirms a positive and significant relation between the Independent Directors Index and accounting returns measured as ROA at 5% significant level. Thus we may reject the null hypothesis (H_{01}) that there exists no significant relation between Independent Director Index and accounting return measured in terms of ROE. The results are consistent with the findings of Al-Matari et al.(2012), Afza and Nazir(2008), Hussein and Venkatram (2013)and Varshney et al.(2012). Further, the null hypothesis (H_{03}) that there exists no significant relation between firm size and accounting rate of return and null hypothesis (H_{05}) that the relationship between returns of the company and its leverage is not significant may also be rejected. We also observe that age of the company though has a positive impact but the impact is insignificant and hence we may accept the null hypothesis (H_{04}) that the relationship between returns of the company and its age is not significant. Thus we get the following equation

ROA=.140+.019IDI-.047FIRMSIZE-.047LEV+STD.ERROR .....Eqn (1)

The table also shows the relationship between IDI and ROE. It is found that the independent variables explain 17.8% of the variation in ROE. The remaining 82.3% of variance can be attributed to factors other than those which have been used in this study. This indicates a significant but minor influence of the Independent Directors and control variables on the return on equity. Durbin-Watson is also within 1.5 to 2.5 and hence it satisfies the assumption of auto correlation. Further it is seen that VIF values lie between 1.030-1.036, thus they are far lower than the cut off value of 10 so multicollinearity is not a serious problem. The regression analysis confirms a positive and significant relation between the Independent Directors Index and accounting returns measured as ROE at 5% significant level. Thus the study may reject the null hypothesis (H_{01}) that there exists no significant relation between Independent Director Index and accounting return measured in terms of ROE. The results are consistent with the findings of Varshney et al.(2012), Chakrabarti et al. (2010), Kyereboah-Coleman (2007). The table also shows a negative significant correlation between the firm size and ROE at 1% significance. Thus, the null hypothesis (H_{03}) that there exists no significant relation between firm size and accounting rate of return may also be rejected. It is observed that there is a low degree of negative correlation between firm size and ROE. Age of the company though has a positive impact but is insignificant and hence we may accept the null hypothesis (H_{04}) that the relationship between returns of the company and its age is not significant. Further we also observe that leverage though has a negative impact on the returns but it is insignificant. Thus we may accept the null hypothesis (H_{05}) that the relationship between returns of the

company and its leverage is not significant. Thus, following equation is obtained

ROE= .040+.018IDI-.041FIRMSIZE+ERROR .....Eqn (2)

Multiple regression to test the relationship between Independent Directors index and market returns measured in terms of Tobin's q shows that the independent variables explained19% of the variation in Tobin's q as depicted in table 1.8. The remaining 81% of variance can be attributed to factors other than those which have been used in this study. This indicates a significant but minor influence of the Independent Directors and control variables on the Tobin's q of the company. Also Durbin-Watson value lies within the specified range of 1.5 to 2.5, indicating that the regression is free from auto correlation. Table 1.8 further suggests that VIF values lie between 1.028-1.035, and thus the regression is free from multicollinearity issue. The regression analysis confirms a positive and significant relation between the Independent Directors Index and accounting returns measured as Tobin's q at 5% significant level. Thus the null hypothesis that there exists no significant relation between Independent Director Index and accounting return measured in terms of Tobin's q may be rejected. The results are consistent with the findings of Afza and Nazir(2008), Reddy *et al.* (2010),Al- Matari et al.(2012), Jackling and Johl(2009) and Chan and Li (2008).The table also shows a negative yet significant correlation between the firm size and Tobin's q at 1% significance and leverage and Tobin's q at 10%. However there is no association between the age of the company and its market return measured in terms of Tobin's q. Thus we may also reject the null hypothesis that there is no significant relation between firm size and Tobin's q and leverage and Tobin's q. It is further observed that there exists a low degree of negative correlation between firm size and Tobin's q. Thus following equation is obtained

Tobin's q =2.887+.369INDEX-1.101FIRMSIZE-.686AGE+STD.ERROR..... Eqn (3)

The year wise findings of the impact of the explanatory variables on the dependent variables are given below

- **2008-09**

IDI has a positive impact at 10% for ROE and ROA and at 5% for Tobin's Q. Firm size has a negative impact on ROA at 1% and ROE and TQ at 5% significance level. Age has a positive impact on ROA at 10% and ROE and TQ at 5% significance level whereas leverage has a negative significant impact at 5% only on ROA and TQ. It was insignificant for ROE.

- **2009-10**

IDI has a positive impact at 10% for ROE and ROA and Tobin's Q. Firm size has a negative impact son ROA, ROE and TQ at 1% significance level. Age though has a positive impact on the financial and market returns but is insignificant for all the performance measures. Leverage has a negative significant impact at 5% on ROA and 10% significance level on TQ. The impact is negative but insignificant for ROE.

- **2010-11**

IDI has a positive impact at 1% for ROE, 5% level for ROA and 10% level for Tobin's Q. Firm size has a negative impact on ROA at 5% significance level and at 1% significance level on ROE and TQ. Age though has a positive impact on the financial and market returns but is significant only for ROA at 10% significance level. It is insignificant for ROE and TQ. Leverage has a negative significant impact at 5% on ROA and 10% significance level on TQ. The impact is negative but insignificant for ROE.

- **2011-12**

IDI has a positive impact at 5% level for both ROE and ROA and at 10% level for Tobin's Q. Firm size has a negative impact on ROA, ROE and TQ at 1% significance level. Age though has a positive impact on the financial and market returns but is significant only for TQ at 10% significance level. It is insignificant for ROA and ROE. Leverage has a negative significant impact at 1% on ROA but is insignificant for ROE and TQ.

- **2012-13**

IDI has a positive impact at 5% level for both ROE and ROA and at 10% level for Tobin's Q. Firm size has a negative impact on ROA, ROE and TQ at 1% significance level. Age though has a positive impact on the financial and market returns but is significant only for ROE at 5% significance level. It is insignificant for ROA and TQ. Leverage has a negative significant impact at 1% on ROA but is insignificant for ROE and TQ.

- **2008-2013**

When the variables are considered on an aggregate basis regression analysis confirms a positive and significant relation between the Independent Directors Index and ROA and ROE at 5% significant level and TQ at 10%. There exists a negative significant correlation between the firm size and ROA at 1% significance level and with TQ at 5% significance level. However there is no association between the age of the company and its ROA and ROE while there exists a positive correlation between age and TQ at 10% significance level. Leverage has a negative impact on performance but is significant only for TQ at 10% significance level.

Thus on running secondary analysis we find that independent directors has a positive impact on the firm value both in terms of accounting returns as well as market returns. Further it is found that though the impact is positive but has a weak significance level. It is also observed that the impact of independent directors on market value measured in terms of Tobin's q is greater as compared to its impact on the accounting returns of the company. This can be explained by the fact that having an independent and competent board sends positive signals in the market thereby increasing investors' confidence. This enhanced confidence is reflected in higher stock prices of companies thereby impacting Tobin's q. Another observation is that though for ROE the value of R^2 is showing an increasing trend indicating that the independent variable is becoming stronger each year in predicting the value of dependent variable (ROE) but in case of ROA and Tobin's q no such consistency is observed. This can be explained by the fact that 2008-2013 is a corrective period wherein lot of changes took place with regard to independent directors. There were lot of speculations regarding the changing roles,

responsibilities, powers and liabilities of these directors which sent mixed signals in the market and hence no trend could be established.

CONCLUSION

Thus the secondary analysis of the data leads us to the conclusion that presence of Independent Directors on the board of the companies has a positive impact on the earnings of the company measured in terms of both accounting as well as market returns. However the impact is found relatively higher for the market returns as compared to the accounting returns. Given the increasing trend of independence in Indian boards it can be said that if due care is taken in appointing competent and unbiased people on the board as Independent Director, these directors can help in adding value to the firm by increasing investor confidence. Companies Act 2013 has raised the standards further by laying strict provisions on appointment, selection, tenure etc. of the Independent Directors but it is a known fact that unless the attitude changes, Independent Directors will not be taken seriously for what they are really worth and will continue to be independent only by definition and not in practice. Apart from appointment of right number of Independent Directors on the board steps need to be taken to improve their effectiveness so that the impact of these directors on the firm and its value can be further increased. Act 2013 had bought about a paradigm shift in the area of Independent Directors. The act has elaborately laid down the provisions for selection, training and remuneration of Independent Directors. The demand for effective vigil mechanism has increased tremendously after the emergence of various corporate scandals in India. However, it is yet unknown, empirically, whether this will actually have an impact on the financial performance of the company or not.

To sum up, this paper has important implications for both academicians as well as regulators. The study develops an Independent Directors Index for the first time that can be further used by researchers for their future researches. The result of the analysis also reveals that there is positive association between independent directors and returns of the company, specially the market returns. The Indian corporates need to realise the importance of independent directors on the boards of the company and take steps for their proper selection, training and evaluation. Directors should be reappointed strictly on the basis of their competence and performance evaluation report. Companies should realise that having mere puppets on the boards would not take them far. The policy makers and regulators also need to strengthen the provisions related with the appointment, selection and remuneration of independent directors and put in efforts to further professionalize the institute of independent directors.

LIMITATIONS OF THE STUDY

Although due care was taken while conducting the study but it has been rightly said that no study is perfect. There are few limitations that are inherent with the study and cannot be overcome due to technical and feasibility issues. The drawbacks related with the study are mentioned below and can be taken care in future researches.

1. The primary limitation of the study can be associated with the time period presumed for the purpose of this study. The study encompasses on the time period between 2008-2013. The study only considers the five year period before the implementation of the new Companies Act 2013. The act

has brought radical changes in the area of independent directors but its effect is beyond the scope of this study.

2. The scope of the study has been limited to the role of independent directors in corporate governance in India and not much focus has been paid to other countries where this concept originated like UK and US.

3. The study takes into account only those companies that were listed on BSE SENSEX, BSE100 and CNX NIFTY as on 1st January2012.

4. The study only focuses on non-financial and non-government listed companies. It is not sure whether the study would give similar results for financial and unlisted companies also.

5. Secondary data used for the study has been collected from annual reports and prowess database and the researcher is not responsible for any printing or omission error in the reports studied.

REFERENCES

Adams, R. B., & Mehran, H. (2005). Corporate performance, board structure and its determinants in the banking industry. *In EFA 2005 Moscow meetings.*

Afza, T., & Nazir, M. S. (2008). Working capital approaches and firm's returns in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, *1*(1), 25-36.

Al Matari, E. M., Al Swidi, A. K., & Fadzil, F. H. B. (2014). Audit committee characteristics and executive committee characteristics and firm performance in Oman: empirical study. *Asian Social Science*, *10*(12), 98.

Al-Matari, E. M., Al-Swidi, A. K., Fadzil, F. H., & Al-Matari, Y. A. (2012). The impact of board characteristics on firm performance: Evidence from nonfinancial listed companies in Kuwaiti stock exchange. *International Journal of Accounting and Financial Reporting*, *2*(2), 310.

Alnaif, K. L. (2014). Determinants of the size of board of directors: Evidence from Jordanian corporation. *Research Journal of Finance and Accounting*, *5*(8), 54-63.

Balasubramanian, B. N., Black, B. S., & Khanna, V. S. (2008). *Firm-level corporate governance in emerging markets: A case study of India.* In 2nd Annual Conference on Empirical Legal Studies. Working Paper No. 119, 8-11.

Bhagat, S., & Black, B. (1999). The uncertain relationship between board composition and firm performance. *The Business Lawyer*, 921-963.

Bhandari, V., Lamba, A., & Seth, R. (2014). Does corporate governance increases firm performance and value among specific sectors in Indian context? An Empirical Analysis. *Business Analyst, Special Edition March.*

Black, B. S. (2005). *How corporate governance affects firm value: Evidence on channels from Korea*. Doctoral dissertation, School of Law and Economics Research Paper Number 09-23. University of Texas. School of Law and Economics. Working Paper No. 51. University of Texas, McCombs School of Business.

Black, B. S., Jang, H., & Kim, W. (2006). Predicting firms' corporate governance choices: Evidence from Korea. *Journal of Corporate Finance*, *12*(3), 660-691.

Cadbury Committee. (1992). Report on the financial aspects of corporate governance. *GEC, London*.

Chakrabarti, R., Subramanian, K., & Tung, F. (2010). Independent directors and firm value: Evidence from an emerging market. *Available at SSRN 1631710*.

Chan, K. C., & Li, J. (2008). Audit committee and firm value: Evidence on outside top executives as expert-independent directors. *Corporate Governance: An International Review*, *16*(1), 16-31.

Dalton, C. M., & Dalton, D. R. (2005). Boards of directors: Utilizing empirical evidence in developing practical

prescriptions. *British Journal of Management*, *16*, S91–S97.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, *26*(2), 301- 325.

Garg, A. K. (2007). Influence of board size and independence on firm performance: A study of Indian companies. *Vikalpa*, *32*(3), 39-60.

Gatti, S., & Caselli, S. (2007). Corporate governance and independent directors: Much ado about nothing? The evidence behind private equity investment performance. *The Evidence Behind Private Equity Investment Performance*.

Gordon, J. N. (2007). The rise of independent directors in the United States, 1950-2005: Of shareholder value and stock market prices. *Stanford Law Review*, *59*, 1465-1568.

Haldar, A., & Rao, S. V. D. (2013). Governance practices of Indian firms: An empirical analysis. *The Empirical Economic Letters*, *12*(9), 975-984.

Hermalin, B. E., & Weisbach, M. S. (1991). The effects of board composition and direct incentives on firm performance. *Financial Management*, 101-112.

Hussein, S. K., & Venkatram, R. (2013). Corporate governance and firm's value: An empirical analysis of agri-input firms in India. *International Journal of Commerce, Business and Management*, *2(*6), 353-362.

Hutchinson, M. R. (2014). Is CEO human capital related to firm performance?. In *2014 Financial Markets & Corporate Governance Conference*.

Iwu-Egwuonwu, D., & Chibuike, R. (2010). Corporate reputation & firm performance: Empirical literature evidence. *Corporate Reputation & Firm Performance: Empirical Literature Evidence.*

J., Park, Y. W., Reising, J., & Shin, H. H. (2005). Board composition and firm value under concentrated ownership: the Canadian evidence. *Pacific-Basin Finance Journal*, *13*(4), 387-410.

Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review*, *17*(4), 492–509.

Jensen, M.C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, *3*(4), 78-79.

Kajola, S. O. (2008). Corporate governance and firm performance: The case of Nigerian listed firms. *European Journal of Economics, Finance and Administrative Sciences*, *14*(14), 16-28.

Khanchel El Mehdi, I. (2007). Empirical evidence on corporate governance and corporate performance in Tunisia. *Corporate Governance: An International Review*, *15*(6), 1429-1441.

Kiel, G. C., & Nicholson, G. J. (2005). Evaluating boards and directors. *Corporate Governance: An International Review 13*(5), 613-631.

Kumar, N., & Singh, J. P. (2012). Outside directors, corporate governance and firm performance: Empirical evidence from India. *Asian Journal of Finance & Accounting*, *4*(2), 39-55.

Kyereboah-Coleman, A. (2007). Corporate governance and shareholder value maximization: An African perspective. *African Development Review*, *19*(2), 350-367.

Liang, N., & Li, J. (1999). Board structure and firm performance: New evidence from China's private firms. In *Academy of Management Annual Conference*, 7-10.

Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance. *The Business Lawyer*, 59-77.

Raheja, C. G. (2005). Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis*, *40*(2), 283-306.

Reddy, K., Locke, S., & Scrimgeour, F. (2010). The efficacy of principle-based corporate governance practices and firm financial performance: An empirical investigation. *International Journal of Managerial Finance*, *6*(3), 190-219.

Sarkar, J., Sarkar, S., & Sen, K. (2012). A corporate governance index for large listed companies in India. *Available at SSRN2055091*.

Varshney, P., Kaul, V. K., & Vasal, V. K. (2012). Corporate governance index and firm performance: Empirical evidence from India. *Available at SSRN2103462*.

IDENTIFICATION AND SELECTION OF A GOOD RESEARCH PROBLEM THROUGH ANALYTICAL HIERARCHY PROCESS

Hamendra Kumar Dangi[1] and Vandana Munjal[2]

This paper aims at developing a matrix that can help a researcher in making a choice amongst the alternative research problem objectively and scientifically. For developing this matrix, various criterions that need consideration before choosing a research problem are identified through extensive literature review. Analytical hierarchy process is used for developing the Choice of Research Problem Criterion Matrix (CRPCM) that ranks alternative research problem based on weights of different criterion so derived. Researcher's dilemma with respect to choice of research problem can be resolved in scientific and objective manner. The most important contribution of this paper is development of CRPC matrix which can be used by any researcher in any discipline to identify the most suitable research problem for his doctoral thesis. On practical grounds, this matrix can be adopted by various Research institutes and universities for evaluating various research proposals received by students before picking them for further research. This matrix can also be used by various Research funding agencies to score alternative research topics in the light of various criteria so as to decide worthiness of a research problem for a grant. The list of criterion so provided for identification and selection of research problem is not exhaustive.

Keywords: *Good Research Problem, Analytical Hierarchy Process, Research-ability, Originality, Novelty, CRPC matrix.*

INTRODUCTION

Deriving itself from an old French word-'*Recerche*', the term Research has acquired deeper meanings in the field of academics. It has been defined and redefined in academic literature time and again as per various ideologies (Positivism and Post positivism), under various branches (descriptive research, action research, analytical research) and with various approaches (Qualitative & Quantitative) (Dangi & Dewen, 2016). In comprehensive terms, Research is defined as "an inquisitive process requiring careful investigation and inquiry to find solutions to various scientific and social problems" (Kothari,2004). Scientific inquiry and logical thinking are essence of this process and existence of research problem marks the beginning of it.

The process of research gets triggered as and when a research problem surfaces itself. A Research problem refers to "a difficulty which a researcher or a scientific community or an industry or a government organization or a society experiences. It may be a theoretical or practical situation. It calls for a thorough understanding and possible solution" (Rajasekar *et al.,* 2006). Identification and selection

[1] Associate Professor, Department of Commerce, University of Delhi.
[2] Assistant Professor, Sri Aurobindo College, University of Delhi

of a research problem is the most critical step of research process. This is because a research problem directs an entire research process.

According to Leedy & Ormrod (2005) "A research problem serves as the starting point for the research and is a unifying thread that runs throughout all the elements of the research endeavour. It is the axis around which the whole research effort revolves" (as cited by Ellis & Levy, 2008). The quality of execution of research process depends upon how well the research problem has been crafted at the beginning. It is the selection of a right problem that fetches its investigator with a handsome grant from a research funding organization and eventually reduces his struggles at the later stages of the process. But it is also the most difficult task to execute as it involves decision making, the course of action to which is unknown. Every research scholar at the start of his doctoral thesis goes through this dilemma of choosing a research problem to be taken up for study. He feels puzzled in the wake of so many alternatives available and sometimes feel indecisive on account of trade-offs involved such as whether to take risk of exploring virgin areas or pursue research in an area which has well defined methodology and techniques. Researcher generally resolves these dilemmas of choice making through simplified means such as approaching the supervisor, choosing a topic which conveniently satisfies right hemisphere of his brain (intuitive, random, spontaneous) or even sometimes defines the research problem at the end of entire process itself. Resorting to these techniques of choice making destroys the spirit of research vested in scientific inquiry at the beginning only.

Another issue is that a poorly selected research problem poses several risks for a researcher. Most common is risk of aborting the problem in between the process. Sometimes a researcher puts his stakes convincingly on a research problem in the beginning but in between the process of execution realize that it is not worth investing time, money and energy. It may happen on account of several reasons such as lack of availability of adequate literature, data, methods & techniques, audience and soon. This scenario is common reoccurrence in practical life as most of the researchers are unaware about the difference between a problem, a research problem and a good research problem.

A *Problem* describes a situation that needs attention, consideration and an inquiry. A problem is always active (need of the hour), have an impact (on society, business or nation) but adequate solutions to which are not available (Ellis & Levy, 2008). A simple problem becomes a *Research problem* when it finds its theoretical framework in literature (Gap between current state and ideal state), requires a scientific inquiry (Data collection, facts and evidence with no scope of hunch, intuition and guess) and solutions of which are subjected to tests of Significance, Validity and Reliability. A research problem becomes a *Good research problem* when it emerges after satisfying various criterion of goodness defined by experts and academicians over a period of time. A good research problem is an outcome of systematic and logical thinking applied by researcher at the time of selection of the research problem. It is a ripped fruit of time, patience and scientific choice making who's each layer unfolds as research process moves further. A researcher need to understand that at the beginning of research process, his task is not to choose a research problem but a good research problem, identification and selection of which needs scientific inquiry. A good research problem acts as a rear view mirror which gives direction to the researcher and makes him aware about the potential threats and opportunities coming his way.

Next concern in this area is that theory of research so far has merely prescribed various guidelines that a researcher must stick on to while selecting a research problem but fails to provide an answer to the question that how choice of research problem can be made for a doctoral thesis work in an objective and methodical manner. It is one such area which goes undefined and unmeasured in research literature and is still dependent on idiosyncratic assessments of a researcher. A very important question that needs to be addressed here is-when definition of research accentuates scientific inquiry to solve a problem, can the decision of choosing a Research problem be left to intuition, hunch and gut feeling of a researcher? If no, then what is the technique of choosing a good research problem?

The answer to this question lies in further sections of this paper. In Sec.2, this paper identifies and defines a criteria incorporating various factors that must be looked into at the time of selection of research problem. Based on criteria identified, a "CRPC Matrix" (Choice of Research Problem Criterion Matrix)" have been developed that will help a researcher in making a choice amongst the alternative Research Problems. This matrix is nothing but a tool that ranks alternative research problems according to their weighted average score on various criteria. In sec. 5, the matrix have been elaborated and interpreted. The design and development of this matrix has been done through Analytical Hierarchy Process (AHP); methodology related toit is discussed in Sec.3 of this paper. The findings and results of AHP process has been discussed in sec. 4. In sec. 6, an illustration explaining the working of criterion matrix have been given and finally in sec. 7 we have concluded our study and offered possible implications of it.

REVIEW OF LITERATURE

When an attribute 'good' is prefixed to the term research problem, it becomes very important to specify various parameters that defines it. Academicians over a period of time have prescribed varying criteria for adherence at the time of selection of research problem. The most famous one is FINER criteria in Medical Research proposed by Hulley and colleagues. In their book on *Designing Clinical Research*, they mention that "Characteristics of a good research problem assessed in the context of the intended study design, are that it be *feasible, interesting, novel, ethical, and relevant* (which form the mnemonic **FINER)"** (2013). This Criteria is very popular in medical research and has been quoted by lots of studies as an aid in choosing the research question/ problem (Kwiatkowski *et al*., 1998)**.**

Fraenkel and Wellen (1993) in their book on "*How to Design and Evaluate Research in Education*" state that a Good Research problem is "Feasible, Clear, Significant & often Investigate Relationships". Jacob *et al.* (2013) stated that a research problem needs evaluation on certain normative grounds before taking further. These normative grounds are-a research problem should be suitable for researcher, it should be researchable, significant and must be ethically appropriate. Krathwohl (1993) put it very interestingly in his paper that problem of the problem is to find a good research problem that interests a researcher, have basis in theory and impact in its field, is original and achievable with in social, ethical, institutional & resource limitations. Yalcin *et al.* (2016) developed a comprehensive criteria for identifying a research problem on the basis of the data collected & interviews conducted with practitioners. Under this criteria they stated that a research problem is selected on the basis of its originality, researchability & topicality along with researcher's personal factors such as interest, curiosity, time and cost and as per the situation in the literature (gaps) and academic environment (opinions of practitioners, mentors and instructors). Ellis & Levy (2008) in their paper defined 'Worthiness of a Research problem' by describing what a research worthy problem is not.They say that

a research worthy problem is not the one that has been chosen merely on the basis of personal observation. It is not the one that makes irrelevant comparisons between variables and bases itself on methodology which is not capable of further interpretation.

In defining criteria for a good research problem, academicians are mostly emphasizing on originality, novelty, feasibility and relevance of research problem. In the further sub-sections, we have detailed about the most mentioned criterion in literature and we have redefined them in the context of the present study.

Researchable

As per the studies, a Good research problem is Researchable. Different authors relate Researchability with different dimensions such as according to Jacobs *et al.,* (2013) a researchable problem is one that can be attacked empirically i.e. the one which is testable and Falsifiable through sufficient evidence. Krathwohl (1993) explains that a researchable problem is one having a basis in theory; similar to it, Bahcekapili *et al.* (2013) in their paper stated that a good research problem originates, defined and limited by a rich literature background. Tracy (2010) stated that a researchable problem is rich in terms of theories and abundant in terms of data. Luse*et al.* (2012) defines a problem as researchable when it can be investigated through either available methods or for which appropriate methodology is discoverable. There are some authors who relate researchability with feasibility in terms of on time completion and cost effectiveness (Aslam & Emmanuel, 2010; Yalcin*et al.,* 2016; Alon, 2009; Luse*et al*. 2012). An important distinction need to be made between the terms 'Researchability' and 'Feasibility'. A good research problem is Researchable first and then comes the Feasibility. Franklen & Wallen (1993) stated that a researchable problem is answerable scientifically i.e. one with respect to which some data, information, facts, evidences can be collected on the other hand, Non-researchable problems are one which involves value judgement or are metaphysical in nature i.e. with respect to which no definite answer exist. They further define a feasible research problem as one which can be investigated with available resources. Cummings *et al.* (1994) define Feasibility (as part of FINER criteria) as availability of adequate number of subjects, availability of required skills and expertise, affordability and timeliness.

For the purpose of this paper, the term Researchable is being defined both in terms of Researchability and Feasibility. Thus, a good research problem is one which is answerable scientifically i.e. sufficient evidence with respect to which is accessible in terms of both literature and data and techniques to find answer to it area discoverable within a reasonable amount of time and cost.

Interesting

A good research problem is interesting. Previous literature states that a research problem which interests a researcher, is going to keep him motivated (Krathwohl, 1993); is going to contribute to his knowledge and career prospects (Jacob *et al.,* 2013) and will help him in overcoming hurdles and frustrations in the research process (Cummings *et al.,* 1994). Therefore, being interesting is very important part of a good research problem. But how do we define what is interesting and what is not?

The answer to this question can be found in the work of Davis (1971). According to Davis (1971), *Interesting* is something which grabs the attention of the audience by attacking their routinely held assumption about a phenomenon. However, Davis clarified that Interesting should not be confused with

criticizing and non-acceptability of current theories. The role of the researcher is not just to attack the routine held truth of audience but to replace it with one which in their opinion is "not Obvious", "not Absurd" and "not irrelevant". It is always the audience of a researcher who tell whether a problem is interesting or not by confirming that-*a problem which is of interest to the researcher is actually not Non-interesting*. Most of the studies define 'Interesting' as a personal criteria in making a choice of research problem but a researcher should always keep in mind that a good research problem is not only of interest to him but to people at large such as peers, experts in the field, supervisor and other academicians. As quoted by Bartunek *et al.* (2006) in his paper "Scholarly articles that are more interesting to their readers are more likely to induce positive effect and are also more likely to be read, understood and remembered".

Ethical

It is one such Criterion of a Research problem which cannot be compromised upon. Tracy (2010) in his study states that 'Being Ethical' is the "Universal end goal of any study". Ethics in Research is one of the most discussed and concerned area in research literature. Institutional Review Board (IRB), National Advisory Board on Research Ethics (NABRE) and various other agencies prescribe basic principles that every study should abide by such as Minimum risk to participants, Protection of vulnerable participants such as minor, privacy & confidentiality of Data, informed consent, non-discrimination, safety, right of withdrawal, honesty, objectivity, legality, no harm to animals, environment or society at large and soon (Halsinki,2009; Resnik, 2011; Frenklen & Wellen, 1993). In context of choosing a research problem, it can be stated that a Good Research problem is ethical when it entails no potential harm to environment, society, law and subjects under study (physical, psychological or financial) (Cummings *et al.*,1994; Jacob *et.al.*, 2013; Frenklen & Wellen, 1993).

Originality and Novelty

The Council for Doctoral Education of the European Universities Association recommends that "the core component of doctoral training is advancement of knowledge through original research" (as cited by Baptista *et al.,* 2015). Cummings *et al.* (1994) in their book mentioned that "a study that merely reiterates what is already established is not worth the effort and cost". Morris Klein says "I think in Research you want to satisfy your own ego. You want to know you did it before other fellow" (as cited by Krathwohl, 1993). It is evident how various studies stress on the importance of Originality and Novelty in research. But how to define Originality and Novelty?

Originality is defined very broadly in Social science research and stated to have varying degrees. Baptista *et al.* (2015) define Originality as using a new approach, method or data, studying a new topic or building a new theory, filling the research gap or producing contradictory findings. Cummings *et al.* (1994) states that a problem need not be totally original-anything which has been researched with a different subjects, at different point of time, in different context or refines previously established relationships can be called as original. Originality and Novelty are part of the same continuum. When a researcher finds an idea which has never been discussed before; process it in a new scientific way resulting in outcomes never been thought before-this extreme form of originality is called as Novelty. Often the term Originality and Novelty are used interchangeably, but in this paper we define them as two separate criterion. Thus, a good research problem is Original and Novel.

Relevant

A research problem can be interesting, novel and original but all these criterion find their justification when relevance is attached with them. Baptista *et al.* (2015) in their paper stated that when originality is attached with relevance- it leads to *Creativity and Innovation*, both of which are necessary for a nation and society to succeed. Bartunek *et al.* (2006) in his paper stated that research especially empirical research are nothing if they have no practical implications, no matter how interesting they may sound. Frenklen & Wellen (1993) in their paper stated that every researcher should ask himself one question - How my research is going to contribute to society, to educational practice, to advancement in knowledge, administrative decision making and Program planning.

The issue in analysing the relevance of a research problem is that there is a divide in the opinions of academicians and policy makers. Harris (2015) stated that impact of research in academics is usually measured through number of publications, citations, type of journal in which it is published, match between the field and the journal and so on. In contrast, practitioners believe in analyzing the impact of research by the degree of its attraction for policy makers and businesses. Young (2008) claims that "for research to have any impact, the results must inform and shape policies and programmes and be adopted into practice" (as cited by Harris, 2015). Shanley and López (2009) stated that evaluating a research in terms of its publications and number of citations discourage impact oriented research (Harris, 2015).

Now a days, research funding organizations are following a practitioner's point of view in analysing the impact of research. The Research Council of the UK emphasize upon the academic impact of a research (in terms of advances in knowledge made by the research) but it also stresses upon the need to analyse the economic and societal impact of research in terms of offering practical solution to various social, economic and national problems (Harris, 2015).

Being an emerging practice, in this paper relevance of a research problem is defined from practitioner's point of view. Although the true relevance of it is known only after the entire process but in this paper we have put this criteria in name of 'Potential output' with three sub criterion- social implications, policy implications and managerial implications.

Table-1 below operationalise the variables identified in the study

Table -1

Defining the Criteria for selection of Good Research Problem

Criterion	Meaning	Sub-criterion
Researchable	A problem is researchable when it can be answered through scientific investigation or experimentation within the social, institutional and personal constraints.	• Assess whether a research problem is doable within reasonable time duration or not. • Check whether financial support for carrying out the research is available or not. • Check whether sufficient evidences, facts and data can be collected to testify it or not. • Do a literature background check and • Check whether the know-how of the research problem is available/discoverable or not.
Nature of the Research Problem	Describe the complexities, exceptionalities, dissimilarities involved in solving a research problem that makes it unique.	• *Interesting*: intellectual curiosity that a research problem arouse in a researcher and academic community at large. • *Originality:* application of creativity at any stage of research process. • *Novelty:* highest degree of originality incorporated at every step of research process • *Ethical*: being harmless to society, Environment, subjects under study and animals.
Potential output	This criteria captures the potential outcomes of research problem	• *Social implications*: possible solutions a research offers to social problems. • *Managerial implications*: potential innovative solutions of research is capable of offering in economic decision making. • *Policy making*: assistance a research can offer in context of national issues.

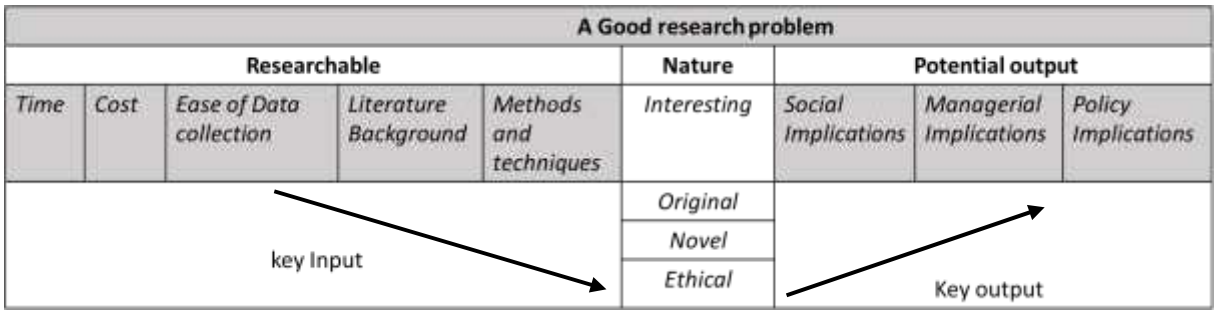
The above theoretical framework states that the process of selecting a research problem starts as and when a researcher encounters a problem which he finds interesting. At this time, researcher should make sure that the problem which is of interest to him is also arousing intellectual curiosity in other academicians as well. If the researcher is undertaking a novel area altogether he should rigorously analyse the feasibility of it and then only should move forward. He should see that ideas in his head

cloud can be earthed within a time frame and with certain methods and techniques. On the other hand if a researcher is taking up a problem already been explored before in that case he should look for the points where originality can be incorporated. All these endeavours are worth when solutions to research problem are extendable to solve practical issues faced by managers, society and nation at large.

Hence, a Good research problem can be precisely defined as "A*n idea which is Feasible in conduct, interesting, novel, original and ethical in nature and have potential of creating an impact on business, society or nation".* We can summarize the above discussion through a framework below:

Fig.1

Criteria for selecting a Good research problem



In the further sections of this paper, it has been explained that how a good research problem can be chosen based on the criteria described above.

1. Methodology

After extracting various factors that should be looked into a research problem, it is important to determine as to what extent each individual factor will affect the selection of research problem. Also it is necessary to provide an answer to the question that how a good research problem will be selected on the basis of this criteria. The solution of above two questions lies in determining the weights of all individual criteria and development of tool that could rank alternative research problem incorporating these criteria. For developing these solutions Analytical hierarchy process has been followed.

Analytical hierarchy process is a technique of decision making involving multiple criteria. In this technique once the factors/criteria are identified, they are arranged in a hierarchy descending from an overall goal to criteria, sub-criteria and alternatives (Satty, 1990). It involves use of relative scale which basically measure and weights those factors for which there is no standard scale of measurement example love, political etc. A relative scale is required wherever there is a need to represent subjective understanding (Satty, 1990). The value on relative scale are derived from judgements given by experts in pairwise comparison of criteria on Satty scale (Table-2). Pairwise comparison of criteria in a hierarchical structure is most unique feature of Analytical Hierarchy Process as it allows comparison of homogenous factors and segregates the heterogeneous factors. The pairwise comparison values are normalised using Satty's (1980) Eigen value method and accordingly priority weights are calculated for criteria and sub criteria. Priority weights are put to test of consistency. Once the priorities (weights) satisfy the consistency requirements, Satty also proposed methodology for converting Local priorities into global priorities as per the problem hierarchy. The AHP is used with two types of measurement-one

is relative and second is absolute. In case of Relative measurement we make pairwise comparisons throughout the hierarchy starting from Criteria to alternatives. But in case of Absolute measurement, we restrict pairwise comparison to criteria only and Alternatives are simply rated on a scale with respect to each criteria (Satty, 1990). You can read details on full methodology of analytical hierarchy process in the work of Satty (1980; 1990).

Table-2
Satty Scale

Intensity of Importanceon AbsoluteScale	**Definition**	**Explanation**
1	Equal Importance	Two Criteria are Equally important for Goal Achievement
3	Moderate importance of one overother	In opinion of experts one criteria is contribute moderately more in goal achievement than other
5	Strong importance	One Criteria is strongly favoured over another
7	Verystrong Importance	One criteria stands preferred over another very strongly
9	Extreme Importance	Dominance of one Criteria over another is extremely stated
2,4,6, 8	Intermediate values between two value judgements	When compromise is needed

Source: Satty (1990): How to Make a decision: Analytical Hierarchy Process

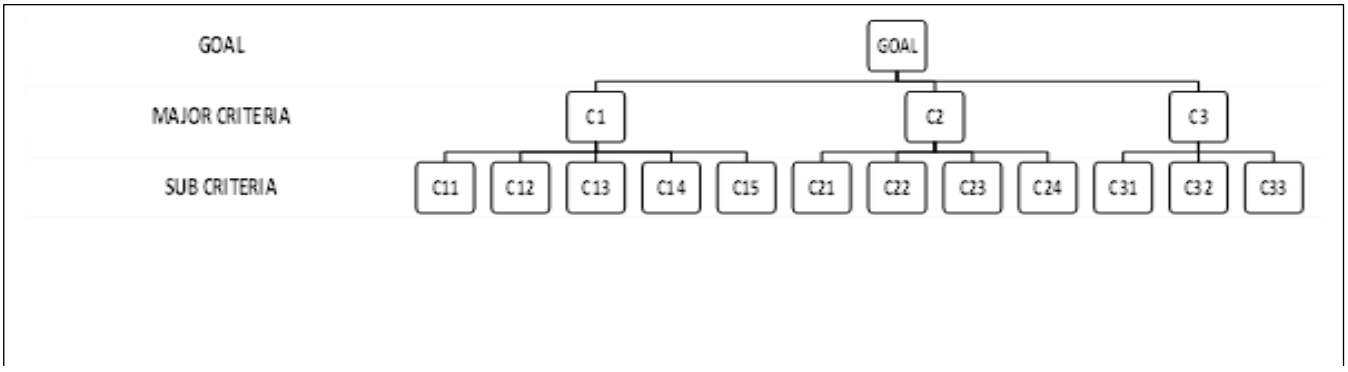
Using analytical hierarchy approach we determined the weights of various criteria and developed 'Criterion matrix' for identification and selection of a good research problem. The details about the same have been discussed in the next section of this paper.

FINDINGS AND DISCUSSIONS

In the very first step under analytical hierarchy process, we have structured our problem as hierarchy as presented in the Figure-2below:

Fig.2

Structuring the Problem as Hierarchy



Defining the above hierarchy in AHP terminology, our goal is the "choice of a Good Research Problem". For achieving this goal, we have three Major Criteria at level one- Researchable (C1), Nature of Research Problem (C2) and Potential Output (C3). Under the Major criteria of 'Researchable' we have five sub-criteria at level two- Time (C11), Cost (C12), Ease of Data Collection (C13), Literature Background (C14) and Methods and techniques (C15). Under the second major criteria head 'Nature of research problem' we have four sub criteria- Interesting (C21), Original (C22), Novel (C23) and Ethical (C24) and lastly under the third major criteria head 'Potential Output' we have three sub criteria- Social Implications (C31), Managerial Implications (C32) and Policy implications(C33).

After arranging the problem in a structural hierarchy the next step is to conduct pairwise comparison of criteria. For this, we elicit judgements from three experts about the relative importance of criteria with respect to the overall goal – Choosing a Good Research Problem. The scale used for soliciting judgements is given in Table-2. Our respondents for this questionnaire are experts in the field of research work. The Matrix of pairwise comparisons of each criteria given by experts along with resulting vector of priorities is given in Table (3.1-3.4):

Table: 3.1

Pairwise Comparison of Major Criteria at level 1

Major Criteria	**Researchable**	**Nature of Research Problem**	**Potential Output**	**Priority Vector/ Weights of the Criteria**
Researchable	(1,1,1)	(4,1/5,1/4)	(6,3,1/9)	**0.29**
Nature of Research Problem	(1/4,5,4)	(1,1,1)	(3,8,5)	**0.46**
Potential Output	(1/6,1/3,9)	(1/3,1/8,5)	(1,1,1)	**0.25**
λ_{max}= 3.007, CR = 0.007				

In the table-3.1, pairwise comparison values recorded on Satty scale for each of the three experts are given in cells. The column of priority vectors give us a consolidated score for all the three experts and indicate the weights of each criteria derived on the basis of pairwise judgement values (Researchable- 29%, Nature of Research Problem - 46% and Potential output- 25%). The scale of priorities is obtained by solving for Principal Eigen vector and then normalizing the results. Principal Eigen value λ_{max} = 3.007 and consistency ratio (CR = 0.007) of less than 10% validate the resulting priority vector.

Table- 3.2

Pairwise comparison matrix for sub-criteria at level two

Criteria	**Time**	**Cost**	**Ease of Data Collection**	**Literature Background**	**Methods and Techniques**	**Priority Vector**
Time	(1,1,1)	(3,1,1/3)	(1/4,1/5,1/7)	(1/7,1/5,3)	(1/7,1/5,1/5)	**0.06**
Cost	(1/3,1,3)	(1,1,1)	(1/5,1/6,1/6)	(1/5,1/7,5)	(1/8,1/9,1/3)	**0.064**
Ease of Data collection	(4,5,7)	(5,6,6)	(1,1,1)	(1/3,1/2,9)	(1/7,1/7,4)	**0.255**
Literature Background	(7,5,1/3)	(5,7,1/5)	(3,2,1/9)	(1,1,1)	(1/2,1/4,1/7)	**0.147**
Methods& Techniques	(7,8,6)	(8,9,3)	(7,7,1/4)	(2,4,7)	(1,1,1)	**0.475**
λ_{max}=5.104, CR=0.023						

In the table-3.2, pairwise comparisons of sub criteria under the major criteria head "Researchable" have been done. The priority vector column indicates weightage of time criterion to be 6%, of cost to be 6.4%, Ease of data collection to be -25.5%, Literature background to be-14.7% and Methods and techniques to be-47.5%. The resulting priority vector is valid as consistency ratio is less than 10% (λ_{max} =5.104, CR=0.023)

Table 3.3
Pairwise comparison of sub criteria at level two

Criteria	**Interesting**	**Original**	**Novel**	**Ethical**	**Priority vector**
Interesting	(1,1,1)	(1,1/5,1/8)	(1/5,4,1/5)	(1,3,1/9)	**0.136**
Original	(1,5,8)	(1,1,1)	1/5,8,4)	(1,5,1/3)	**0.383**
Novel	(5,1/4,5)	(5,1/8,1/4)	(1,1,1)	(2,1,1/8)	**0.206**
Ethical	(1,1/3,9)	(1,1/5,3)	(1/2,1,8)	(1,1,1)	**0.276**
λ_{max}=4.062, CR=0.023					

In table 3.3, pairwise comparison of sub criteria under the major criteria head "Nature of the Research Problem" have been done. Under this head, Originality scores the highest 38.3% followed by Ethical-27.6%, then novelty-20.6% and lastly interesting 13.6%. The priority vector scores stands validated with consistency ratio of less than 10% (λ max =4.062, CR=0.023).

Table-3.4

Pairwise comparison of Sub criteria at level two

Criteria	**Social implications**	**Managerial implications**	**Policy making**	**Priority vector**
Social Implications	(1,1,1)	(9,4,1)	(5,9,1/5)	**0.56**

Managerial Implications	(1/9,1/4,1)	(1,1,1)	(1/4,5,1/6)	**0.17**
Policy Making	(1/5,1/9,5)	(4,1/5,6)	(1,1,1)	**0.27**
λ_{max}=3.000, CR=0.00				

In the table-3.4, pairwise comparison of sub criteria under the major criteria head "Potential Output" has been done. In the resulting priority vector, Social implications is weighted at 56%, followed by 27% weight score for policy making and 17% for managerial implications. As the consistency ratio is less than 10% (λ max=3.000, CR=0.00), the priority vector indicates valid scores based on consistent judgements.

The weights (Local Priorities) of major criteria at level one and sub criteria at level two are summarized in Table-3.5 and composite weights (Global Priorities[1]) are shown in Table-3.6.

Table 3.5
Local priority weights for criteria

(a)														
Major criteria	Researchable (C1)					Nature of Research problem (C2)					Potential Output (C3)			
Weights	0.29					0.46					0.25			
(b)						(c)					(d)			
Sub criteria	C11	C12	C13	C14	C15	Sub criteria	C21	C22	C23	C24	Sub criteria	C31	C32	C33
Weights	0.06	0.064	0.255	0.147	0.475	Weights	0.136	0.383	0.206	0.276	Weights	0.56	0.17	0.27

Table 3.6
Global Priorities of criteria

C11	C12	C13	C14	C15	C21	C22	C23	C24	C31	C32	C33
0.0174	**0.01856**	**0.07395**	**0.04263**	**0.13775**	**0.06256**	**0.17618**	**0.09476**	**0.12696**	**0.14771**	**0.0425**	**0.0675**

Global priorities are calculated by multiplying the weights of the sub-criteria with weight of the major criteria above in the hierarchy. For example: the weight for C11 in Table-3.6 is calculated by multiplying the weight of C1 (Table 3.5) with weight C11 (Table-3.5).

Table-3.6, indicates the final weight score for various factors. Amongst these factors, C22- Originality (17.61%) scores the highest, followed by C31-Social Implications (14.771%), C15- Methods

and Technique (13.775%) and C24-Ethical (12.696%). The factor that have been allotted the least weight score least are C11-Time (1.74%) and C12-Cost (1.856%). Other factors score moderately, C13-Ease of data collection (7.3%), C14-Literature Background (4.2%), C21-Interesting (6.256%), C23-Novelty (9.476%), C32-Managerial Implications (4.25%) and lastly C33-Policy implications (6.75%). Thus, Originality of a research problem, its social implications, employability of methods and techniques and its ethical dimension are the most important factors affecting the choice of research problem.

1. Dangi Munjal Choice of Research Problem Criterion Matrix (DM- CRPCM)

After deriving the weights of various factors, a matrix can be developed where the alternative research problem can be listed and rated. This matrix has been named as Dangi Munjal Choice of Research Problem Criterion Matrix (DM-CRPCM), the basic structure of which is shown in Table-4.

Table-4

Choice of Research Problem Criterion Matrix

	(Wi)	**Alternatives**				**Factor scores of Alternatives**			
Criteria	**Weights**	**A1**	**A2**	**A3**	**……An**	**FS1**	**FS2**	**FS3**	**FSn**
C11	**0.0174**	A11	A21	A31	An1	0.0174*A11	0.0174*A21	0.0174*A31	0.0174*An1
C12	**0.01856**	A12	A22	A32	An2	0.01856*A12	0.01856*A22	0.01856*A32	0.01856*An2
C13	**0.07395**	A13	A23	A33	An3	……..	……..	……..	……..
C14	**0.04263**	A14	A24	A34	An4	……..	……..	……..	……..
C15	**0.13775**	…	….	……	……	……..	……..	……..	……..
C21	**0.06256**	…	……	……	…..	……..	……..	……..	……..
C22	**0.17618**	…..	….	…..	…..	……..	……..	……..	……..
C23	**0.09476**	…..	…..	…..	……	……..	……..	……..	……..
C24	**0.12696**	….	….	……	……	……..	……..	……..	……..
C31	**0.14**	….	…..	……	…..	……..	……..	……..	……..
C32	**0.0425**	…..	….	…..	…..	……..	……..	……..	……..
C33	**0.0675**	A1,12	A2,12	A3,12	An12	0.0675*A1,12	0.0675*A2,12	0.0675*A3,12	0.0675*An,12
SUMMATED SCORES $\sum(\boldsymbol{W_j * A_{ij}})$; where *i indicates the column number ranging from 1-n, and j indicates the row number ranging from 1-12*									
RANKING									

The above matrix so developed can be used to compare any number of alternative research problem in any area of research. With weights of the criteria **(**Col. Wi**)**remaining constant, we can have any number of alternative (A1, A2, A3…….An) for comparison. The only thing that needs to be done is putting the scores given by different experts for different alternative with respect to each criteria in the cell indicated by Aij (where i indicates the column number and j indicates the row number).In case of Absolute measurement approach of AHP, the scoring (Aij) of alternatives can be obtained on a Likert Scale designed as per the requirement of the situation. After recording the scores from experts, factor scores (FS1, FS2….FSn) for each alternative can be calculated by multiplying the weight of the criteria with corresponding score value given by expert to the alternative under a specific criterion. Sum total of factor scores under column head of each alternative gives us the total score of an alternative on all the

criterions. By comparing the summated score$\sum(\boldsymbol{W_j * A_{ij}})$ we can get the ranking of the alternative. The use of this matrix has been explained with an illustrative example in the next section.

2. Selecting Research Problem through CRPC Matrix : Illustration

Let us take an example of choosing a Good Research problem in the area of Marketing. We take up six areas of Marketing – Digital Marketing, Political Marketing, Sustainable Marketing, Sports Marketing, Content Marketing and Personalized Marketing for comparison. We requested our three experts to sit together and give their ratings for these six alternatives on a Likert scale of 1 to 5. The ratings of the alternative indicate the extent of suitability of a research problem in the light of the specific criteria head mentioned. A value of "one" on scale means "Most Unsuitable", "two" means "Unsuitable", three means "Neutral", four means "Suitable" and five means "Highly Suitable" research problem in the light of the criterion. After obtaining the scores from experts through a brain storming exercise, we placed them in the above matrix, obtained the factor scores and hence the ranking of the alternative. This is shown in Table-5 below

Table-5

Ranking the Alternatives													
		A1	A2	A3	A4	A5	A6	Factor Scores					
Criteria	weights	Digital Marketing	Political Marketing	Sustainable Marketing	Sports Marketing	Content Marketing	Personalized Marketing	A1	A2	A3	A4	A5	A6
Time	0.0174	4	4	4	2	3	4	0.0696	0.0696	0.0696	0.0348	0.0522	0.0696
Cost	0.01856	4	4	4	2	2	3	0.07424	0.07424	0.07424	0.03712	0.03712	0.05568
Data Availability	0.07395	3	3	4	3	3	4	0.22185	0.22185	0.2958	0.22185	0.22185	0.2958
Methods and Techniques	0.04263	5	4	5	3	3	4	0.21315	0.17052	0.21315	0.12789	0.12789	0.17052
Literature Background	0.13775	5	4	5	2	2	3	0.68875	0.551	0.68875	0.2755	0.2755	0.41325
Interesting	0.06256	5	5	5	4	3	4	0.3128	0.3128	0.3128	0.25024	0.18768	0.25024
Novel	0.17618	2	4	3	4	4	3	0.35236	0.70472	0.52854	0.70472	0.70472	0.52854
Original	0.09476	2	2	2	3	3	3	0.18952	0.18952	0.18952	0.28428	0.28428	0.28428
Ethical	0.12696	5	5	5	5	5	5	0.6348	0.6348	0.6348	0.6348	0.6348	0.6348
Social Implications	0.14	3	3	4	3	3	4	0.42	0.42	0.56	0.42	0.42	0.56
Managerial implications	0.0425	5	4	5	5	5	5	0.2125	0.17	0.2125	0.2125	0.2125	0.2125
Policy Implications	0.0675	3	4	5	3	3	4	0.2025	0.27	0.3375	0.2025	0.2025	0.27
								3.59207	3.78905	4.1172	3.4062	3.36104	3.74521
								IV	II	I	V	VI	III

The results indicate that Alternative-3 i.e. Sustainable Marketing ranks first followed by Alternative- 2 (Political Marketing), then Alternative- 6 (Personalized Marketing) then Alternative-1(Digital Marketing), then Alternative 4 (Sports marketing) and lastly Alternative- 5 i.e. Content Marketing. From these results, it can be interpreted that sustainable marketing is the most original, interesting, novel, ethical, researchable and relevant research problem of all.

CONCLUSION AND RECOMMENDATIONS

Research can be a tiring and frustrating process especially at the time of selection of a research problem. Selection of research problem although important but most ignorant part of the research literature. Every research scholar wants to shoot off to the further steps of research process. The real challenge comes when he faces difficulties with respect to literature, or data or methods & techniques during the process and sometimes fails to justify the significance of work that he has done. The issue is that researcher leaves these things to the time and thinks about them after the damage has been done. Academicians and researchers in the past has identified various normative grounds to be complied with at the time of selection of research problem but no one has ever come up with a scientific tool to resolve this issue. This paper suggests that a researcher need to have a scientific outlook at the time of selection of Research problem. This paper offers a new insight as to how the choice of a research problem can be made scientifically and objectively by a researcher. The most important contribution of this paper is development of CRPC matrix which can be used by any researcher for choosing a research problem in any area of Research. Any number of alternatives related to any discipline can be placed in this matrix and ranked. The resulting problem from criterion matrix will be the one that satisfy all criteria of Goodness. In economic decision making, as we assume that a decision making entity is rational and will only stop at point where his utility or satisfaction is maximized, in the very same way a rational researcher will stop at point where he is choosing an optimized research problem. Optimised choice of Research problem is possible only when all the criterion have been duly met to the required extent and CRPC matrix helps a researcher in making this optimised choice. On practical grounds, this matrix can be adopted by various Research institutes and universities for evaluating various research proposals received by students before picking them for further research. This matrix can also be used by various Research funding agencies to score alternative research topics in the light of various criterion so as to decide worthiness of a research problem for a grant. Although the list of criterion mentioned in this paper is not exhaustive but the methodology adopted in this paper can be reapplied to extend the work further.

REFERENCES

Alon, U. (2009). How to choose a good scientific problem. *Molecular Cell*, *35*(6), 726-728.

Ary, D., Jacobs, L.C., Sorensen, C.K. & Walker, D., (2013). *Introduction to research in education*. Cengage Learning.

Aslam, S. & Emmanuel, P. (2010).Formulating a researchable question: A critical step for facilitating good clinical research. *Indian Journal of Sexually Transmitted Diseases*, *31*(1), 47.

Bahçekapili, E., Bahçekapili, T., FisErümit, S., Göktas, Y. and Sözbilir, M. (2013). The factors affecting definition of research problems in educational technology researches. *Educational Sciences: Theory and Practice*, *13*(4), 2330-2335.

Baptista, A., Frick, L., Holley, K., Remmik, M., Tesch, J. and Åkerlind, G. (2015). The doctorate as an original contribution to knowledge: Considering relationships between originality, creativity, and innovation. *Frontline Learning Research*, *3*(3), 55-67.

Bartunek, J.M., Rynes, S.L. and Ireland, R.D. (2006). What makes management research interesting, and why does it matter? *Academy of Management Journal*, *49*(1), 9-15.

Dangi, H. K. & Dewen, S. (2016). *Business research methods.* Cengage Learning.

Davis, M.S. (1971). That's interesting! Towards a phenomenology of sociology and a sociology of phenomenology. *Philosophy of the Social Sciences*, *1*(2), 309-344.

Ellis, T.J. and Levy, Y. (2008). Framework of problem-based research: A guide for novice researchers on the development of a research-worthy problem. *Informing Science: International Journal of an Emerging Trans discipline*, *11*, 17-33.

Fraenkel, J.R., Wallen, N.E. and Hyun, H.H. (1993). *How to design and evaluate research in education*. New York: McGraw-Hill Humanities/Social Sciences/Languages.

Harris, R. (2015). The impact of research on development policy and practice: This much we know. In *Impact of Information Society Research in the Global South*. Springer. Singapore, 21-43.

Hulley, S.B., Cummings, S.R., Browner, W.S., Grady, D.G. and Newman, T.B. (1994). Conceiving the research question. *Designing Clinical Research. 2nd ed. Philadelphia, PA: Lippincott Williams & Wilkins*, 335.

Hulley, S.B., Cummings, S.R., Browner, W.S., Grady, D.G. and Newman, T.B. (2013). *Designing clinical research*. Lippincott Williams & Wilkins.

Kothari, C.R. (2004). *Research methodology: Methods and techniques*. New Age International.

Krathwohl, D.R. (1993). *Methods of educational and social science research: An integrated approach*. Longman/Addison Wesley Longman.

Kwiatkowski, T. and Silverman, R. (1998). Research fundamentals: II. Choosing and defining a research question. *Academic Emergency Medicine*. *5*(11), 1114-1117.

Leedy, P.D. and Ormrod, J.E. (2005). *Practical research*. publisher not identified.

Luse, A., Mennecke, B.E. and Townsend, A.M.(2012). Selecting a research topic: A framework for doctoral students. *International Journal of Doctoral Studies*, *7*, 143-152.

Rajasekar, S., Philominathan, P. and Chinnathambi, V. (2006).Research methodology. *arXiv preprint physics/0601009*.

Resnik, D.B. (2011). What is ethics in research & why is it important. *National Institute of Environmental Health Sciences*, *1*(10), 49-70.

Satty, T.L. (1980). *The analytical hierarchy process: planning, priority setting, resource allocation*. RWS Publication. Pittsburg.

Shanley, P. and López, C. (2009). Out of the loop: why research rarely reaches policy makers and the public and what can be done. *Biotropica*, *41*(5), 535-544.

Tracy, S.J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry*, *16*(10), 837-851.

World, M. A. I. (2009). Declaration of Helsinki. Ethical principles for medical research involving human subjects. Journal of the Indian Medical Association, *107*(6), 403.

Yalçın, M., Bektaş, F., Öztekin, Ö. and Karadağ, E. (2016).Factors affecting the identification of research problems in educational administration studies. *Educational Sciences: Theory and Practice*, *16*(1), 23-62.

Young, J. (2008). Impact of research on policy and practice. *Capacity.org*, *35*, 4-7.

UNDERSTANDING DIGITAL CONSUMERS: A COMPARATIVE STUDY OF TOP MARKETS BY MPI

Amit Kumar Singh[1] and Sheetal Maurya[2]

This paper is based on a comparative study on digital consumers of China, Hong Kong and India. It contributes towards the understanding of digital consumers in today's world by interpreting the data on several aspects such as internet usage and user segmentation, research and purchase behaviour, international purchases, search for local information, source of first awareness about products and services to name a few. The comparative study reveals that, customers' interaction and discussion in-person rather than via social network/E-mail/text message is a crucial source of information about new product/services. Online advertising is most effective way to advertise a new product in Chinese market whilst television and in-store ads is most effective in Indian market. Online buying is quite popular in Chinese and Hong Kong markets. Consumers actively search for product information (online/offline) before buying it online/offline, but rarely engage in any online post purchase behaviour. Internet is most preferred medium of pre-purchase inquiry, but purchases are often made at offline store. Indian consumers are most averse to online international purchases than consumers in china and Hong Kong. Translation is a major hurdle for Chinese consumers making international purchases and they rarely use translation services.

Keywords: *Digital Consumers, Market Potential Index, Digital Savviness and Motivation, Device Usage, Product Awareness, Research Behaviour, Purchase Behaviour.*

INTRODUCTION

Simply put, Digital Consumers are the people who use internet to purchase or sell product or services via various digital devices and platforms that are currently available to them due to growth and advancement in technology and telecommunications. This proliferation of digital devices and platform has not only altered the purchase and research behavior of consumers in market but has also affected the way marketers now communicate and engage with consumers to meet their need in a profitable way. To put it straight, it has led to a new era of digital marketing.

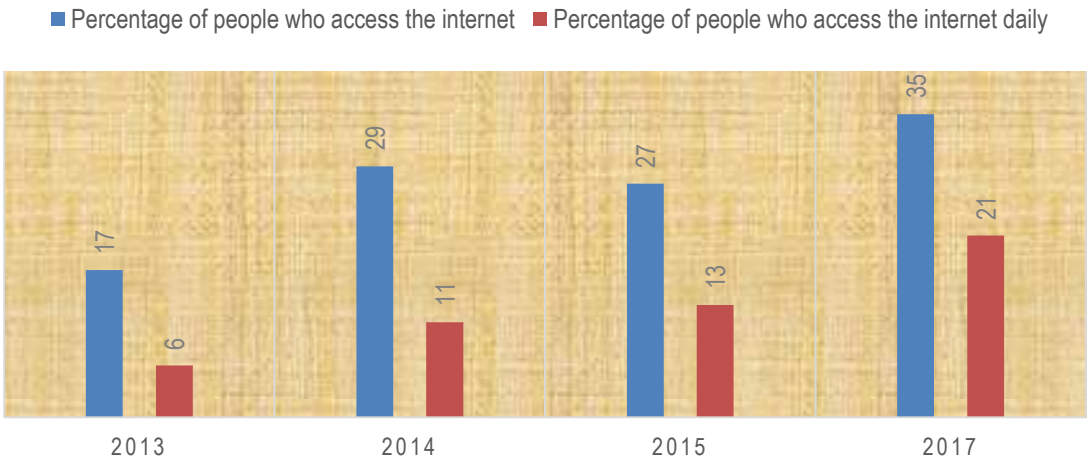
When it comes to understanding today's digital consumers, establishing assumption such as, digital savvy consumers are well informed, they want relevant and quick information, they share a lot, etc. is not the ideal approach. Instead, to understand the purchase and research behaviour of today's digital consumers a detailed research is desirable. The present study, therefore, aims at looking at the various aspects of behaviour of a digitally empowered consumer. We further attempt to compare such behaviour across select countries.

[1]Associate Professor, Department of Commerce, Delhi School of Economics, University of Delhi.
[2] M.Phil. Research Scholar, Department of Commerce, Delhi School of Economics, University of Delhi.

TREND ANALYSIS

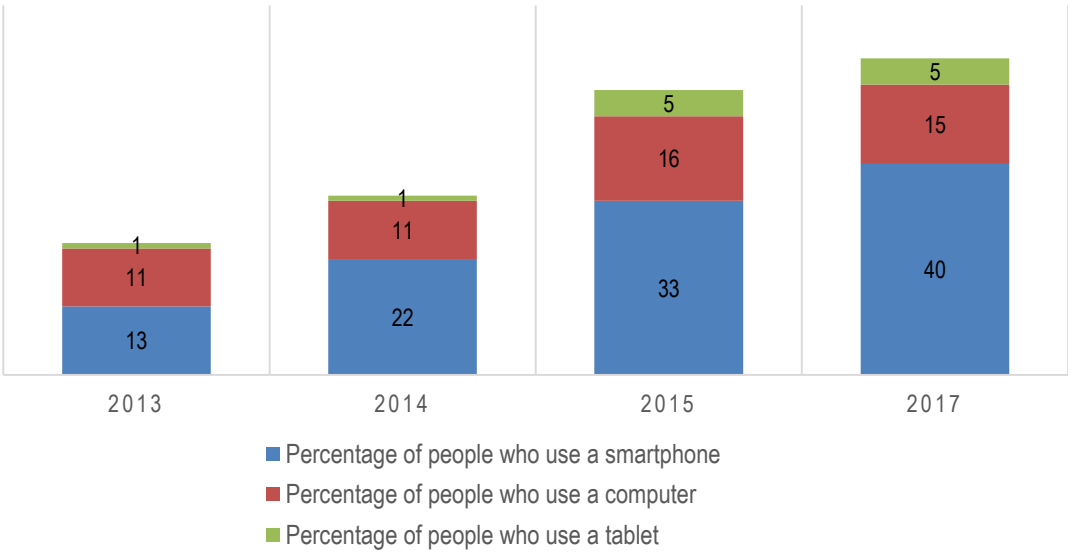
The following charts presents a trend analysis of internet and device usage patterns of India, China and Hong Kong.

FIGURE 1: INTERNET ACCESS



Source: Think with Google

FIGURE 2: DEVICES USED

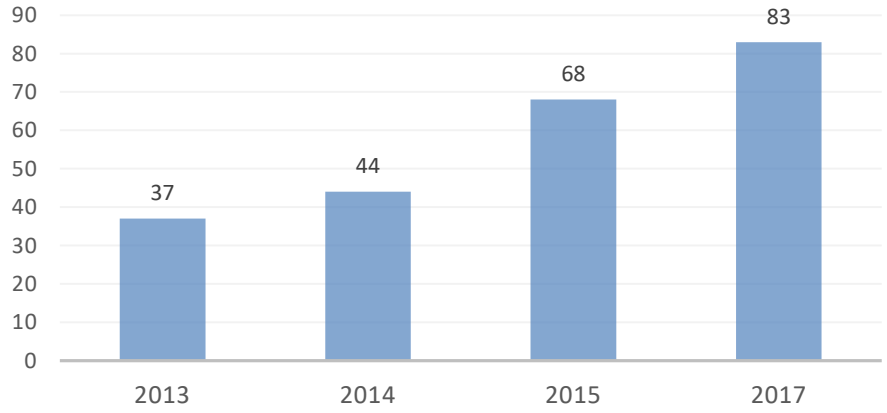


Source: Think with Google

Figure1 presents the internet usage patterns in India. It can be observed that percentage of people who access internet has increased over period of past 4 years. However, percentage of people who access internet on daily basis is although increasing over time but it's still significantly less in comparison to total access to internet. Figure 2 presents a comparative chart of type of devices used by people in India, as can be noticed, percentage of smart phone user at any point in time is higher than computer user and

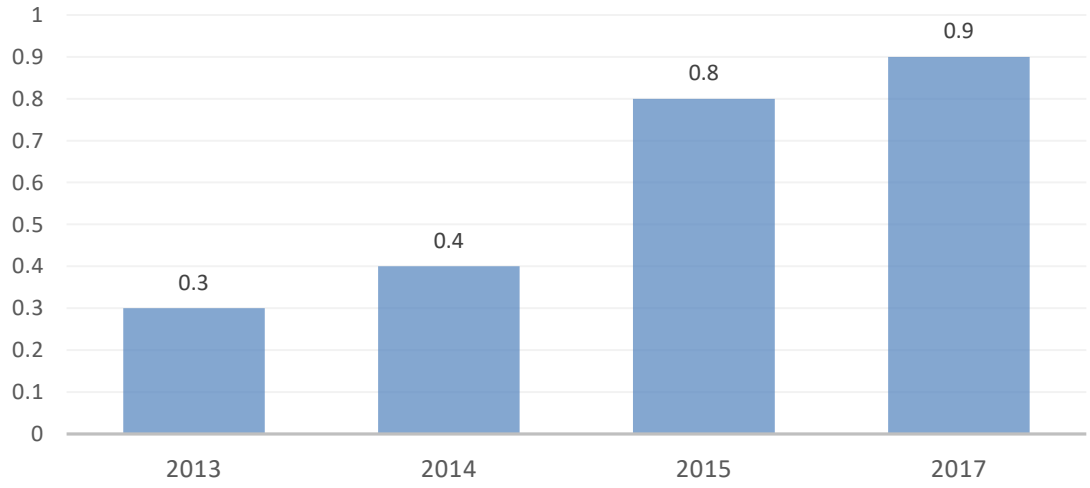
Tablet users are significantly less. Hence, after smartphones computer is most commonly used device. Also, percentage of smartphone user is continuously increasing overtime.

Figure 3: Percentage of people who access the internet at least as often via smartphone as computer



Source: Think with Google

Figure 4: Average number of connected devices per person



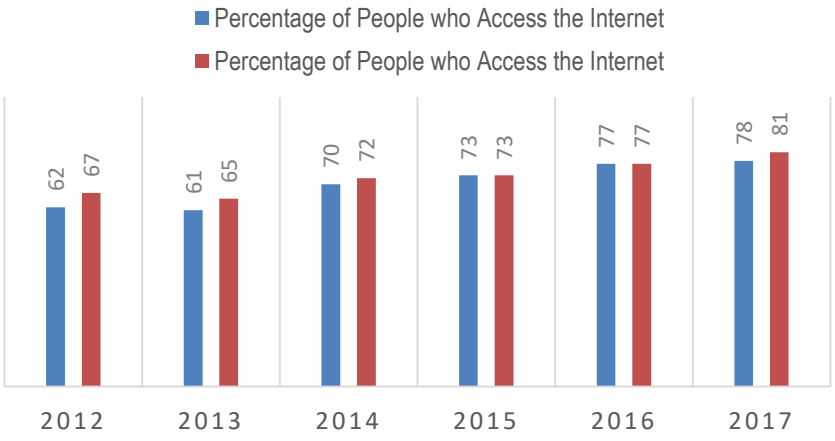
Source: Think with Google

Figure 3 exhibit that percentage of people who access the internet at least as often via smartphone as computers has increased overtime to capture a greater percentage of Indian consumers. However, looking at the average number of connected devices per person exhibited in figure 4, it can be observed that although this average has increased it is still very small in comparison to that of China and Hong Kong shown figure11.

Comparative Trend Analysis of China and Hong Kong

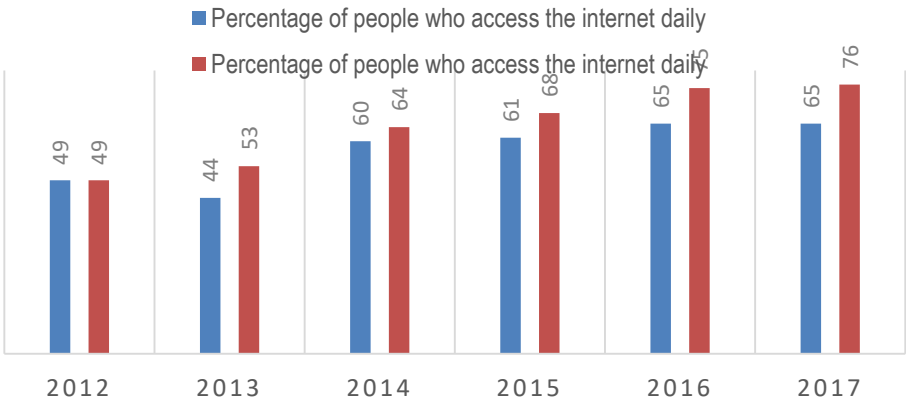
The following sub division of trend analysis presents a comparative trend analysis between China and Hong Kong on internet and devise usage patterns observed over time. Figure 5 exhibits the internet access in China and Hong Kong, as can be seen the percentage of people having access to internet has increased overtime for both the countries, and this percentage to begin with is significantly higher than that of observed in case of India. Hence, it can be said that in comparison to India, people in China and Hong Kong have greater access to internet. Similarly, there is a growing trend in daily access to internet in both the countries (see figure 6) and this growth trend in percentage of people who access internet on daily basis is significant than that observed for India in figure2.

FIGURE 5: INTERNET ACCESS



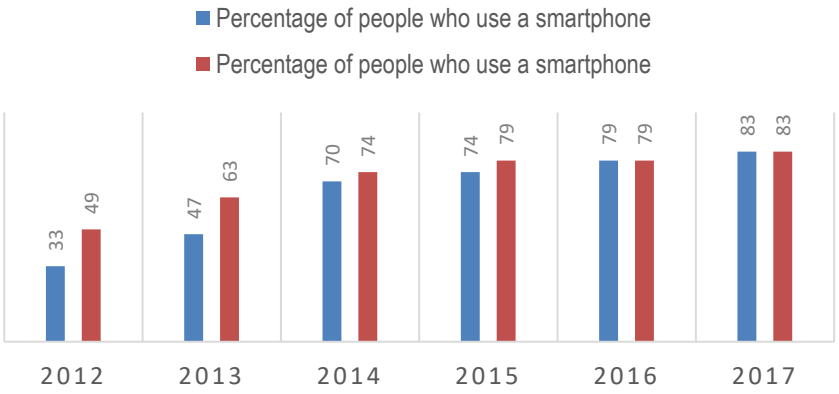
Source: Think with Google

FIGURE 6: DAILY INTERNET ACCESS



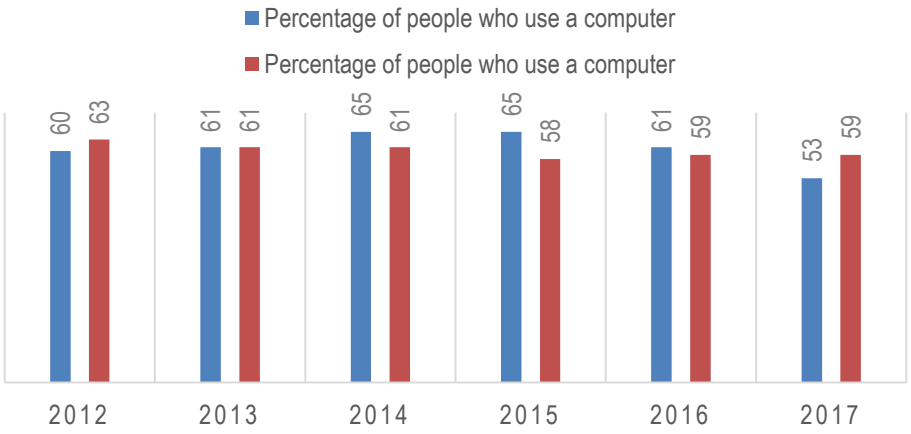
Source: Think with Google

FIGURE 7: SMARTPHONE USAGE



Source: Think with Google

FIGURE 8: COMPUTER USAGE

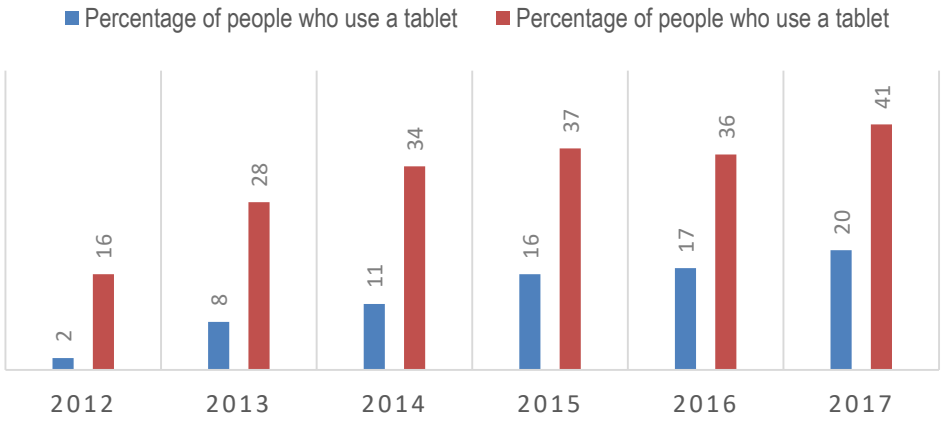


Source: Think with Google

Figure 7 presents an increasing trend of smart phone usage in china and Hong Kong over period of past 5 years. However, trend in use of computer remains a bit in conclusive for both the countries. Up till year 2012 and 2013 percentage of smart phone users remained outnumbered by percentage of people using computers, this trend, however, reversed from 2014 onwards. It is also observed that percentage of smart phone users and computer users in China and Hong Kong is significantly greater than the those in India. The trend in tablet users is also increasing for all three countries and this is significantly higher for Hong Kong than other two countries, the percentage of tablet users is least for India.

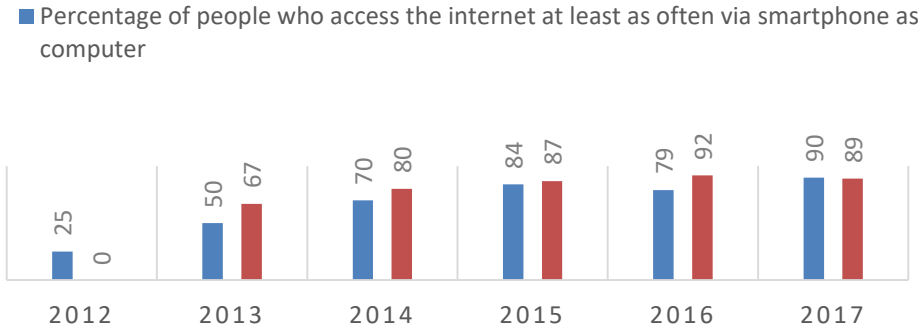
Overall trend in percentage of people who access the internet at least as often via smartphone as computer is increasing in all three countries of our interest (see figure 3and10).

FIGURE 9: TABLET USAGE



Source: Think with Google

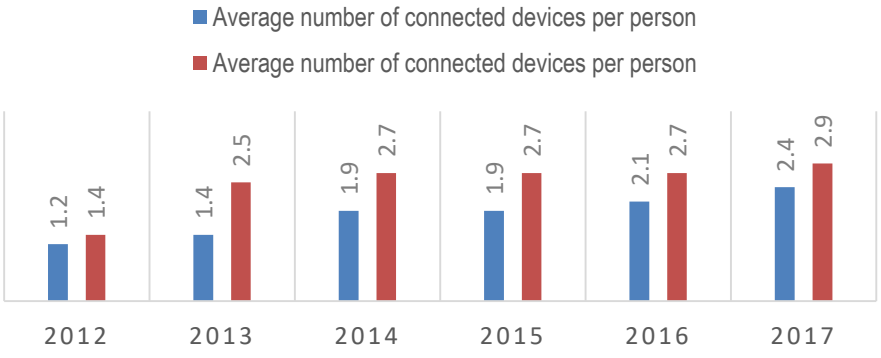
FIGURE 10: PERCENTAGE OF PEOPLE WHO ACCESS THE INTERNET AT LEAST AS OFTEN VIA SMARTPHONE AS COMPUTER



Source: Think with Google

Figure11 exhibit the trend in average number of connected devices per person which is increasing for all three countries. However, this average is comparatively higher in Hong Kong. On the other hand, average number of connected devices per person is found to be lowest in India.

FIGURE 11: AVERAGE NUMBER OF CONNECTED DEVICES PER PERSON



Source: Think with Google

OBJECTIVES

To understand digital consumer behavior of China, Hong Kong and India and its implications for local and international businesses.

DATA AND METHODOLOGY

For the purpose of comparative study, Market Potential Index (MPI 2017) has been used to identify the top countries by their market potential. While China and Hong-Kong has been ranked first and second respectively for four consecutive years, India has recently joined the race of top three countries by their market potential. The index has been pioneered by Michigan State University—International Business Center to help companies compare prospect markets on several dimensions. It primarily uses eight dimensions of markets viz., size, intensity, growth rate, consumption capacity, commercial infrastructure, receptivity, economic freedom and country risk. Each of these dimensions are measure on a scale of 1 to 100 and are given a relative weight.

We propose to use descriptive research design based on Secondary data analysis, the required data and latest reports has been collated and retrieved from *Think with Google*. With data provided and trends tracked by Google think, we compare them amongst the selected countries to get the comparative insight into how technology and internet has affected consumer behaviour and its implications of businesses.

ANALYSIS

The comparative analysis amongst selected countries is divided into following sections where each section addresses a specific aspect of digital consumers' behaviour and characteristic.

Comparative Internet Usage Pattern

Observing the internet usage rate and frequency it is found that in comparison to India (35%), more people in Hong Kong (81%) and China (78%) use internet for their personal purposes that do not concern their business and work-related purposes and a significant portion of such segment use internet for personal purposes on daily basis. Hence, population of China and Hong Kong are more frequent users of internet in comparison to India. People in China and Hong Kong use internet more frequently for personal uses i.e. non-business related while Indian user stick to business and work-related uses of internet.

Digital Savviness and Motivation

Digital savviness of people measured by factors such as how often they post content online, how often they guide people about how to do things online, how often they use internet as first source to search for information, whether they see digital activities as fun source and if they prefer to do a task digitally; indicates that people in India exhibit comparatively greater digital savviness than people in China and Hong Kong on above mentioned factors.

From the base of internet users (accessing via computer, tablet or smartphone), a major segment (79%) is found to be having a highly optimistic view toward new technology believing that new technologies offer more opportunities than risk, whereas this percentage is 58% and 46% percent for China and Hong

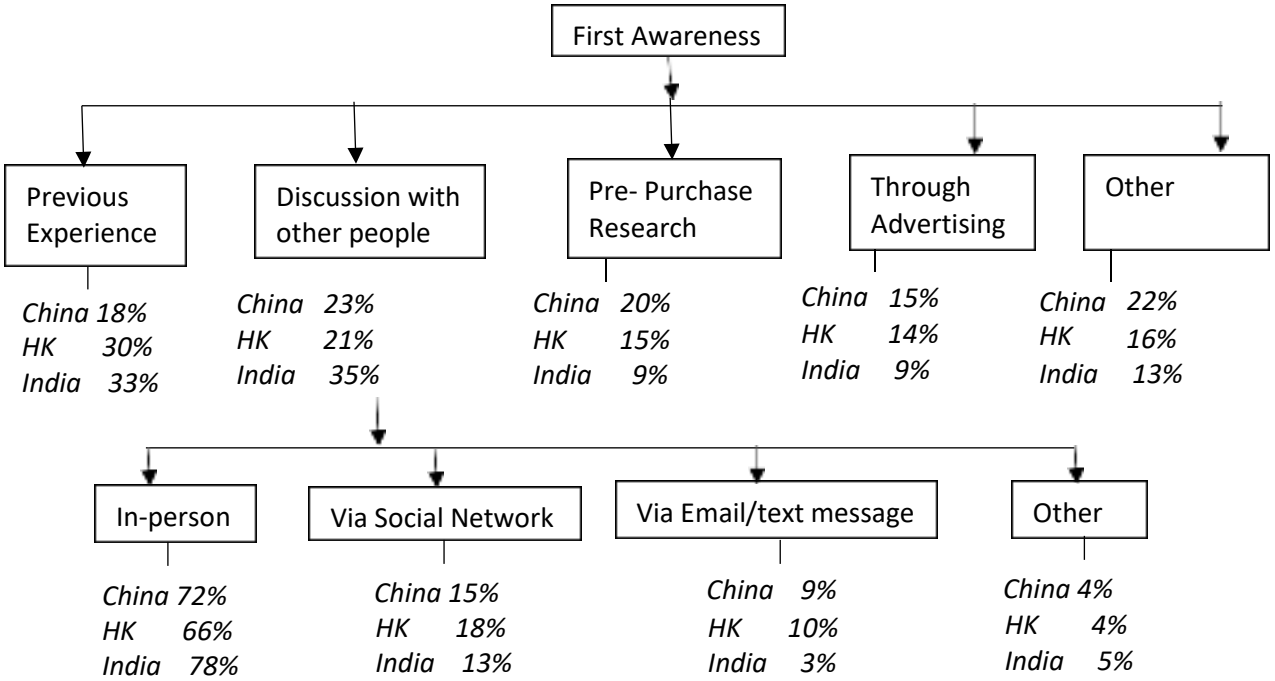
Kong respectively.

Devise Usage

Mobile phones are most commonly used devices in all 3 countries; however, smart phone users are significantly less in India (only 40% in comparison to 83% in China and Hong Kong). User in china and Hong Kong most actively engage in using smart phone functions such as access travel/traffic/maps, news, check weather etc. than in India. Indian consumers use more frequently use their smart phones for music, videos, playing games and taking photos. Almost in all online activities such as using search engines, visiting social network sites, checking email, playing games and video, online purchase and information search etc., Hong Kong users are observed to be more active.

Majority of consumers get to know about a new product/service either through their previous experience or discussion with other people in person particularly in-person. While doing pre- purchase research, Indian consumer prefer in store/shop/showroom enquiry while consumers in china mainly search for product online via website/apps. Amongst the advertising media, online media is relatively more effective in China (49%) and Hong Kong (26%) than in India (16%). In India, on the other hand, Television (31%) and in-store adds (25%) are observed to be more effective.

Figure 12: Product Awareness



Source: Data Retrieved from Think with Google

Research Behaviour of Consumers

Research behaviour of consumer in select countries can be examined on factors such as time spent on

product research, motivations for purchase, number of brand considered, extent of online/offline research and their sources, online pre-purchase activities and use of internet in purchase stages, and devices used in research. A comparative analysis of select countries on these factors revealed the following characteristics of research behavior of consumers in select countries:

- Majority people engage in pre-purchase information search of any type (93% in China, 84% in Hong Kong and 91% in India.) and only small percentage of people do not perform any kind of pre-purchase information search.

- Only a small portion of people who engage in pre-purchase information search, rely solely on online research (i.e. 9% in China, 12% in Hong Kong and 3% in India). A combination of both online and offline research is much more common amongst buyers. 'Only offline' research is much common amongst Indian consumers (44%) than that of China (21%) and Hong Kong (17%).

- Amongst the offline information sources, discussion with family/friends/colleagues/others and in-store research (brand's or retailer's store) are comparatively more effective in all three countries. Other offline information sources viz. TV and Radio Programs/ads, printed material, salesperson/company representative/ consultant, billboard/ posters are not very effective source of information to initiate or finalise a purchase decision process.

- Amongst the online sources of information, search engine is observed to be most effective source particularly in China and Hong Kong. Followed by this, online search on brand and retailer websites as next most effective online source of information. Comparatively a greater proportion of customers in China and Hong Kong rely on this source for information search than in India. Social network and online video sites are comparatively more effective in India than in China and Hong Kong. But they are less effectiveness than other online sources of information.

- People usually spend one hour to a week-long time on product research before purchasing it. This product research behaviour is consistent across select countries in present study.

- The primary motivation behind a purchase decision is to meet an urgent need followed by a 'a gift for oneself' and a regular purchase and refill.

- Before product purchase Indian customer usually consider one (48%) or two brands (31%). On the other hand, customers in China and Hong Kong are more likely to consider greater number of brands than Indian customers before arriving at final purchase decision. Interestingly, the proportion of people who don't consider any brand in particular is significantly higher for China (25%) and Hong Kong (31%) than India (8%).

- Looking at the role of internet in pre-purchase activities of customer in select countries it is observed that a majority of Indian consumers use internet to get initial ideas and inspirations (55%) in their purchase decision. Whereas internet is most commonly used to compare products/prices/features online in China (62%) and Hong Kong (57%). It's also common to use internet to discover relevant brands online and look for opinion/ reviews/ advices online.

- Computers are most commonly used device in any stage of product research followed by smart phones. And this pattern is relatively much strong in China and Hong Kong. In India, however, use

of smart phones and computers in product research is not significantly different. In fact, proportion of consumers using only smart phones for product research is significantly higher for India.

- Those who search offline usually go for offline purchase and those who search online also prefer offline purchase.

Purchase Behaviour

Purchase behaviour of consumers can be studied from several dimensions like, specific purchase location both online and offline, devices used for purchase, method of receiving product, post-purchase activities, and research and purchase behavior (ROPO). The following purchase behavior has been identified on selected dimensions**:**

- A majority population in all three select countries prefer to purchase offline (e.g. store, agency, office, kiosk, restaurant etc.) and such segment is significantly large in India (82%) in comparison to China (51%) and Hong Kong (62%). The second preferred purchase location is 'online'. However, in comparison to China and Hong Kong only a small percentage of Indian consumer prefer to purchase online (11%).

- Just like in case of product research, those who purchase online, reported Computer as commonly used device followed by smart phones. It is also observed that; smart phone user segment is comparatively larger in India than in China and Hong Kong. It can then be said that, product purchase is often made using same devices that has been used in product research.

- The most common method of receiving product is observed to be 'collection from store' which is consistent with the observation that people usually prefer to purchase offline.

- It is also observed that only a small segment of consumer engages in post purchase behaviour such as, sharing purchase experience on social network(s), posting reviews and ratings and looking online for product set-up and usage. This post purchase behaviour is consistent across select countries.

- Research and purchase behaviour (ROPO) of consumers is categorised into four categories viz. which is presented in following ROPO Matrix:

Figure 13: Source of Product Research

Product Purchase Method		Online	Offline
	Online	Category I *China: 36%* *Hong Kong: 23%* *India:* 9%	Category II *China: 15%* *Hong Kong: 8%* *India: 3%*
	Offline	Category III *China: 36%* *Hong Kong: 44%* *India:29%*	Category IV *China: 42%* *Hong Kong: 38%* *India: 49%*

Source: Data Retrieved from Think with Google

As can be seen Category II is least common ROPO amongst consumers in all three countries. Category I consumers are least common in India in comparison to other two countries of our interest. Category IV is most common type of research and purchase behaviour in all three select countries followed by Category III type of ROPO i.e. consumer generally research offline and also purchase offline or they may also search for product on various online sources and then purchase it offline.

International Purchases

International purchase behaviour of consumers is studied on attributes such as frequency of purchase, attitudes, challenges, motivations etc. the following characteristics has been observed:

- Majority of consumers in India (84%) and China (52%) have never bought products online from abroad. However, percentage of consumers who have purchased international product online at least once a year is higher for Hong Kong (48%) and China (32%) than India (10%). This indicates that international purchases are not quite common in India and China.

- Chinese consumers who make international purchases usually purchase food (groceries, delicacies, and special food); Cosmetics, beauty and health products and clothing & accessories or footwears. Whereas, Indian consumers primarily make international purchases of clothing & accessories or footwears followed by Cosmetics, beauty and health products and mobile phones, SIM cards. It is observed that unlike international purchases by consumers in India and China, international purchases from Hong Kong is quite dispersed amongst various major product categories such as; food, Cosmetics, beauty and health products, books/CD/DVDs/Video games, clothing & accessories or footwears, personal and domestic appliances, Home & Household goods, Home furnishing/furniture and toys.

- Looking at the attitude of consumers in select countries toward international purchase it is observed that majority consumers in China (52%) and India (75%) prefer to buy products from within their country. Whereas, consumers from Hong Kong apparently are more open to international purchases.

Shipping cost does not appear to be a problematic issue in international purchases as only small percentage of customer expect shipping cost to be very high when items are delivered from abroad, however, longer delivery time is observed as one of the key issue in international purchases and Indian consumers in particular are highly impatient about the long delivery time involved in such international purchases with only 4% willing to accept longer delivery time. And finally, majority of those who are willing to buy products from abroad do not have any specific preference for country to import from.

- For majority of consumers in Chinese market Quality is the primary motivation to initiate international purchase, apart from this better availability, better conditions viz. service and terms of payment, recommendations from others, appealing offers are some other commonly stated reasons for international purchase. For Indian consumers better quality and appealing offers are the prominent reasons of opting for international purchase. Better availability and appealing offers, on the other hand, are commonly stated reason by consumers in Hong Kong.

- In international purchases language is a major hurdle for Chinese consumers whereas consumers in India and Hong Kong are relatively much comfortable with foreign language.

CONCLUSION

Customers' interaction and discussion with other person in-person rather than via social network/E-mail/text message is a crucial source of information about new product/services. Online advertising is most effective way to advertise a new product in Chinese market whilst television and in-store ads is most effective in Indian market. Although, online businesses are growing in India, approx. 82% of Indian consumers still prefer buying from stores. Online buying is quite popular in Chinese and Hong Kong markets. Consumers actively search for product information (online/offline) before buying it online/offline, but rarely engage in any online post purchase behaviour. Internet is most preferred medium of pre-purchase inquiry, but purchases are often made at offline store. Indian consumers are most averse to online international purchases than consumers in china and Hong Kong. Indian consumers are most comfortable with buying products from within India. Amongst those Indian consumers who make international purchases, better quality and appealing offer is the primary driver of purchase intention. International purchases are usually done by those Chinese consumers who look for better quality and availability. Better availability and appealing offer is primary motivation to Hong Kong consumers. Local language, long delivery time, lack of suitable payment methods, unclear process for ordering, security issues are found to be common hurdle with international purchases. Translation is a major hurdle for Chinese consumers making international purchases and they rarely use translation services.

REFERENCES

Galat, G. (2013). Retrieved from: https://econsultancy.com/blog/61961-understanding-the- digital-consumer

Manicom,S.(2015). How Digital is Changing Consumer Behaviour. Retrieved from:http://www.mediavisioninteractive.com/blog/social-media/how-digital-is-changing-consumer-behaviour/

Reach First (2017). Understanding Digital Consumer. Retrieved from ReachFirst:https://www.reachfirst.com/understanding-digital-consumers/

The Nielsen Company (2014). The Digital Consumer. Retrieved from https://www.nielsen.com/wp-content/uploads/sites/3/2019/04/the-digital-consumer-report-feb-2014.pdf

Nielsen,F.(2014). The U.S. Digital Consumer Report. Retrieved from https://www.nielsen.com/us/en/insights/report/2014/the-us-digital-consumer-report

The Nielsen Company (2014). What's Empowering the New Digital Consumer. Retrieved from http://www.nielsen.com/us/en/insights/news/2014/whats-empowering-the-new-digital-consumer.html

Think with Google (2017). Retrieved from: https://www.consumerbarometer.com/en/graph-builder/?question=N38&filter=country:china,india,hong_kong_sar

Case Study

GOVERNING FAMILY BUSINESSES-LESSONS FROM INDIA

Shital Jhunjhunwala[1]

The article using examples from India presents governance concerns of family businesses and how they can be addressed. Most of the companies in the world are family owned. Founder's aspirations and values define the company. Ownership and management both rest with the family members. There is thus a need to balance the interest of family and business. As both family and business grow, new governance issues arise such as dispute among family members, struggle for power and addressing the interest of non-family shareholders. Conflicts and splits can lead to the company's downfall. As the business expands, public money may be raised, requiring transparent and formal governance systems such as induction of independent directors be put in place. Hence success calls for fair distribution of ownership among family members, well defined roles and responsibilities of each member, professional management and proper succession planning. Continuous transformation of governance structures enables them to create legacies for future generations.

Keywords: *Family Business, Corporate Governance, Generations, Succession Planning.*

DOMINANCE OF FAMILY BUSINESSES

Your neighborhood Kirana stores aren't the only family businesses around you. Some of the largest public companies in the world – Facebook, Wal-Mart, Volkswagen and Berkshire Hathaway are all family owned. It is estimated that 80% to 90% of all business are family owned. "Since 2006, family owned companies have outperformed broader equity markets" (Credit Suisse Report, 2018).

Of the top 1000 family owned firms more half are from Asia according to the Credit Sussie Report of 2018. Among those, India (11%) has the third-largest number of family-run businesses after China (16%) and US (12%). "Indian companies owned by families generated average annual returns of 13.9 per cent since 2006, more than double the 6 per cent reported by companies that were not" (Hindu Business Line, 2018).

Indian families like the Birlas and Tatas who began setting up industries even before independence, own diversified conglomerates churning billions of dollars of wealth and contributing a significant portion of the economic value and employment creation of the nation. Post-Independence (1947- 1990) saw the development of public sector enterprises (Government or State owned enterprises) such as ONGC, SAIL and BHEL coupled with growth and dominance of few business houses (family business groups) such as Ambanis (Reliance) and Bajaj that were able to benefit from the 'licence raj' and crony

[1] Shital Jhunjhunwala, Associate Professor, Faculty of Commerce and Business Studies, University of Delhi.

capitalism prevalent during that period. Post liberalization (1991 onwards) the changing business environment along with global business opportunities saw many new family businesses make their mark. (See table1) At the same time absence of protectionism and global competition led to the collapse of many public sector enterprises. As a result today about 90% of all listed companies in India are family controlled.

Table 1: India's Top 20 Business Groups

Rank	1951	1990	2016
1	Tata	Tata	Tata
2	Birla	Birla	Mukesh Ambani
3	Martin Burn	Ambani	Birla AV
4	Sahu Jain	JK Singhania	Anil Ambani
5	Bird Heilgers	Thapar	Vedanta
6	Andrew Yule	Mafatlal	Bharti
7	Shriram	Bajaj	L&T
8	Mafatlal	Modi	Adani
9	Kasturibhai Lalbhai	MA Chidambaram	HDFC
10	JK Singhania	TVS	Mahindra
11	Walchand	Shriram	ICICI
12	Thapar	UB	OP Jindal
13	Bangur	Bangur	JSW Group
14	Khatau	Kirloskar	Jaypee Group
15	Indra Singh	Walchand	Infosys
16	Seshayee	Mahindra	Wipro
17	Ramakrishna	Goenka	DLF

18	Kirloskar	Nanda (Escorts)	Axis Bank
19	Mahindra	Lalbhai	GMR
20	Shapoorji	Ruia (Essar)	Rahul Bajaj

Note: In 2016 out of 20, 15 are family owned

Source:*Krishna Kant ,In India,15 of the top 20 business groups are family-owned, Aug 18, 2006, https://www.rediff.com/money/report/special-in-india-15-of-the-top-20-business-groups-are-family-owned/20160818.htm*

IT'S ALL IN THE FAMILY

While there is no universal definition, a business may be considered a family business when the founder either individually or along with family members, or their descendents own majority stake or control decision making. Family-owned businesses may be the oldest form of business organization. Farms are probably the earliest form of family business where members of the family are involved in farming activity. Family life and business get intertwined. Family structure defines organization structure. Key positions are kept in the family.

In patriarchal society of India the senior most male member who is the head of the family will be the Chairman cum Managing Director of the company. As there is now a need to separate these positions the younger brother or son will be made CEO. Several members of the board will be family members. In addition many extended family members or relatives are employees of the company. Hence ownership, board of directors, senior management and even employees are all family members. 49.3% of the shares of Bajaj Auto Ltd the flagship company of the Bajaj group are owned by 23 family members and other family owned organizations of which Bajaj Holdings and Investment Ltd controls 32%. Almost half the directors of the board are family members and all three top positions are with the family. (see Table 2)

Table 2: Board of Bajaj Ltd

Name of director	***Position***	***Relationship with other directors***
Rahul Bajaj	Executive Chairman	Father of Rajiv Bajaj and Sanjiv Bajaj, father-in-law of Manish Kejriwal
Madhur Bajaj	Executive Vice Chairman,	Brother of Shekhar Bajaj and Niraj Bajaj
Rajiv Bajaj	Managing Director	Son of Rahul Bajaj, brother of Sanjiv Bajaj, brother-inlaw of Manish Kejriwal

Pradeeep Shrivastava	Executive Director	
Sanjiv Bajaj	Non-executive	Son of Rahul Bajaj, brother of Rahul Bajaj, brother-inlaw of Manish Kejriwal
Shekhar Bajaj	Non-executive	Brother of Madhur Bajaj and Niraj Bajaj
Niraj Bajaj	Non-executive	Brother of Madhur Bajaj and Shekhar Bajaj
Manish Kejriwal	Non-executive	Son-in-law of Rahul Bajaj, brother-in-law of Rajiv Bajaj and Sanjiv Bajaj
DS Mehta	Independent	
Dj Balaji Rao	Independent	
JN Godrej	Independent	
Naresh Chandra	Independent	
Nanoo Pamnani	Independent	
P Murari	Independent	
Dr. Gita Piramal	Independent	

As on 31st March 2017
Source: Adopted from Annual report of Bajaj Ltd

Facebook founder Mark Zuckerberg owns less than 18% shares but controls nearly 60% voting rights as his class B shares have 10 votes per share while the Class A shares that trade have only one vote per share. Dual class shares with "super voting" powers is a common way in which founders in USA are able to retain control while raising large amounts from investors. Generally speaking the family (or descendents) are referred to as promoters of the company in India. They only hand pick the independent directors, who rubber stamp their decisions. The institutional investors have confidence in the promoters due to the past success of the company and hence by and large go along with their decisions. Small shareholders are usually not very active. As a result promoter group can have effective control or 'controlling interest' of the company with a small block holding of only 15% to 30% and need not hold on to the entire 50% shares of the company. They dominate decisions and run the company in a way that best protects their own interest. They often pay themselves hefty salaries, transfer funds out of the company and misuse company funds for personal agendas.

GOVERNANCE THROUGH STAGES OF GROWTH

As the business grows and family expands governance complexities increase. I posit that the ownership structure and governance institutions need to evolve as new governance challenges emerge with business progressing across family generations.

1st Generation: The initial phase belongs to the founders. The founder starts the business and focuses on making it a success. The business is owned and managed by the founder. He exercises complete control and takes all major decisions. The success or failure of the business depends on the entrepreneurship skills of the founder. Often his individual or spouses funds are used for starting the business and their assets (jewellery/house) used as collateral to borrow. Thus begins the intermingling of business and family funds. The founder's value and ethics is internalized into the culture of the company. Dhirubhai Ambani's Reliance is known for massive risk taking and bending rules, JRD's Tata companies for being ethical and Vijay Mallya's flamboyance can be seen in the (in)famous Kingfisher Calendars.

2nd Generation: In this stage the children of the founder start taking charge of the business. Traditionally only male members were brought into the business and the elder son given the senior post and groomed to take over the family business. Continued success of the business depends on the teamwork of the siblings. Decisions are generally made at dinner table. As the business grows the wealth and reputation of the family multiplies. Mukesh Ambani is the richest man in India, (Forbes, 2018) and holds immense influence across spectrums thanks to his business group being number two. Business collapse will similarly cause a spiral downfall for the family as witnessed in the case of Kingfisher and Vijay Mallya.

3rd Generation: When the third generation comes into picture the number of members increase. There are several small families coming together to form a joint family. (See figure2). Three generations are now involved. Each member has his own aspiration, business ideas and style of operation. If proper succession planning has not been carried out in the earlier phase this can lead to conflicts and splits. In the case of Ambani's, in the absence of the towering personality of their father the conflict between Mukesh and Anil (second generation only) led to the split of Reliance. Hardly three out of 100 businesses make it to the third generation of a business family (Piramal, 2000). Those that do, however, tend to perform well overtime compared with their corporate peers.

As the business group expands it is likely that the family will need to go public to raise money. As outside shareholders come in to picture and regulation compliance kicks in there will be need for greater transparency, induction of independent directors and balancing the needs of family and shareholder expectation.

Governance becomes complex and a formal governance structure needs to be put in place. A formal family assembly or forum could be established similar to a shareholders meeting where all members of the family get together and are informed about roles and responsibilities of different members, major business developments and any proposed changes. A family council representing a board of directors may formally or informally take shape where few key members get together to decide direction and strategy of the company.

4thGeneration: The family is now very huge. There are several sub-families and number of members could be high as 100, especially as female members are also claiming their place. It is not possible for every one to

be part of the business. Some members may not be interested others may not have adequate business acumen. As the family size increases and managing it becomes difficult a family charter or constitution may be a good idea to define the relationship between family and business, ownership pattern, governance structure, selection of leadership and communication mechanism. A formal family council with elected members helps the family maintain control while creating shareholder wealth. It took the Burmans of Darbur Ltd in their 5^{th} generation 18 months and several family get-togethers to finalize their charter (Madhavan, 2017). Over the last two decades it has helped professionalize the business enabling rapid growth while keeping the family united.

Making it Work

Managing family business successfully across generations is tricky if not impossible. Only a small percentage of family businesses survive and grow beyond second and third generations. However, there is global evidence that with appropriate governance mechanisms and timely actions, both families and their businesses can not only preserve but prosper.

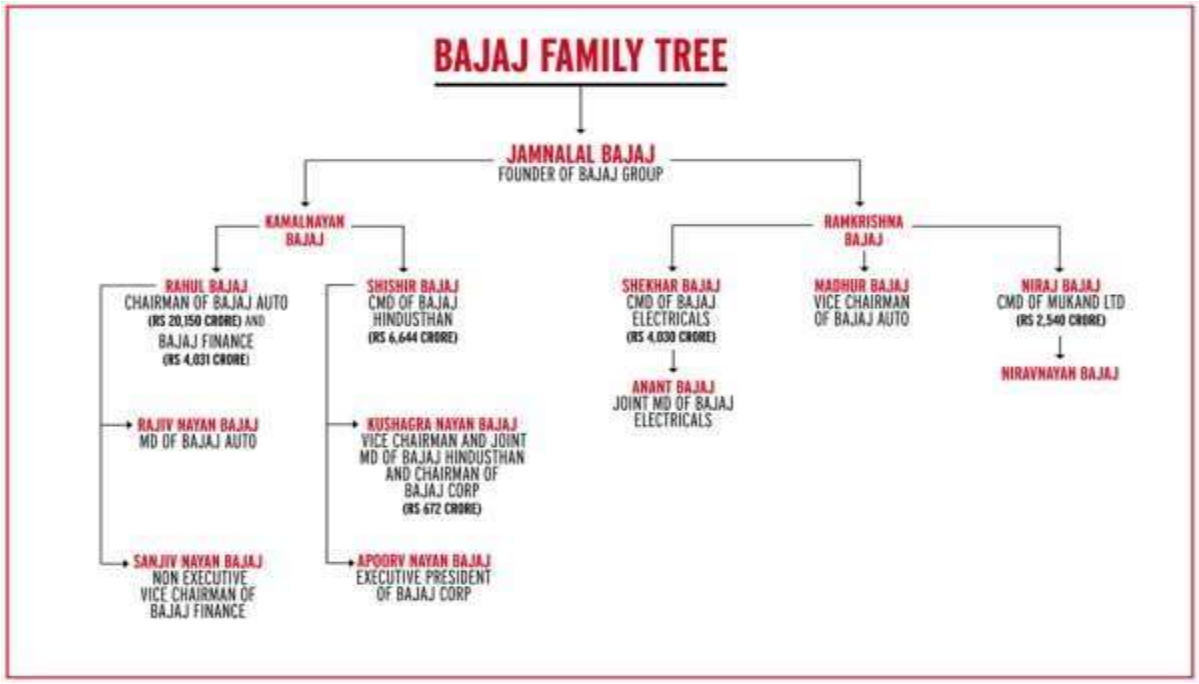
Well Defined Roles

Most business groups typically work through a network of companies that are connected through cross holdings and interlocking of directors with each other. Each company in the Bajaj group is headed by a different family member (See figure 2). This helps each member have control of some part of the business with ownership remaining with all members. Clear division of roles and responsibility prevents conflict while joint ownership helps create a sense of oneness. Rahul Bajaj demerged the finance division from the auto business arguing that it would release shareholder value, but the primary purpose was to give each of his sons a separate business to manage. Rajiv heads the auto business and Sanjeev the finance, giving them autonomy to do their own thing, yet both are on each other's board keeping them together as part of the group (Philip, 2014).

Succession Planning

Inadequate succession planning has been the cause of many family business failures. Often the next generation just does not have the adequate leadership and entrepreneurship skills required for the business. Training and mentoring of the next generation is very important. At Apollo hospitals the four daughters of Dr. Reddy have been involved in the family business from the beginning where as young girls they spend weekends interacting with patients collecting feedback on measures to improve the hospital. Each sister has a clear role depending on her interest and talent. Shobana the eldest designs and executes new projects, Suneeta the second daughter handles finance, Sangita a people person heads human resources and Preeta the youngest manages the hospitals. Each one of them brings their individual and distinct acumen to the growth of the company. Sangita likes to put it this way: "It's always nice to check out a financial idea with Suneeta, talk about something entrepreneurial with Shobana, and look up to Preetha to build on those (Dhamija, 2017). To prevent any conflict the chairmanship of the company is rotated between the sisters. This way the group benefits from the strengths of each of them.

Figure 2: Network of Companies owned by Bajaj Group



Source: https://m.businesstoday.in/story_image.jsp?img=/images/stories/july2014/bajaj_1000_070214032246.jpg&caption

Professional Management

To continue building on past success and growing for future generations, professionals must be brought in. Choosing the right independent directors could go a long way. They can provide expertise in areas that the family lacks. They can objectively help assess the family managers and accordingly help structure leadership roles and in succession planning. The family corporate board (family council) of Apollo group consist of five family members and three independent directors to ensure that third generation onwards entry to the business is on merit. Another key role that independent directors can play is reduce if not eliminate promotion of family aspirations and needs at the cost of business and outside shareholders.

As the family grows in size and business expands both increase in complexities. Family members may give up their day-to-day operational roles and professionals brought in. As Amit Burman, vice chairman, Dabur puts it "We realised that for Dabur to grow rapidly there was a need to professionalise the management, and to attract the best managerial talent it was important to keep the top slot vacant," (Madhavan, 2017)**.**

LEGACY FOR FUTURE GENERATIONS

Though family businesses face some unique challenges in balancing family and business it is also their strength. They focus on sustaining the business for future generations. Family's wealth and reputation is tied to the business. They thus hold a long term view and are not obsessed with quarterly results. As a

result family firms do better in comparison to their industry peers in tough business conditions then during economic boom. The need to create a legacy for future generations is what makes them sustainable. It should then come as no surprise that many family businesses make it to the coveted Fortune 500 list.

REFERENCES

Anshul, D. (2017). *How Dr Prathap Reddy avoids ambiguity on succession andstructure at Apollo Hospitals*. Retrieved from http://www.forbesindia.com/printcontent/46379

Credit Suisse Report (2018). Retrieved from https://www.credit-suisse.com/corporate/en/articles/news-and-expertise/the-family-business-premium-201809.html

India has third highest number of family firms (2018).*Hindu Business Line*. Retrieved from https://www.thehindubusinessline.com/economy/india-has-third-highest-number-of-family-firms/article24949621.ece

Forbes India (2018). India's 100 Richest on Forbes List see modest growth in combined wealth, Retrieved from https://www.forbes.com/india-billionaires/list/

Kant,K.(2006).*InIndia,15ofthetop20businessgroupsarefamily-owned.*Retrieved fromhttps://www.rediff.com/money/report/special-in-india-15-of-the-top-20-business-groups-are-family owned/20160818.htm

Madhavan, N.(2017). *A family constitution can bridge the gap between family and business values*. Retrieved from Forbes India:http://www.forbesindia.com/article/indias-family-businesses/a-family-constitution-can-bridge-the-gap-between-family-and-business-values/46417/1

Piramal, G. (2000). *Business Maharajas.* Penguin UK.

Philip, L, (2014), *Post division, brothers Rajiv and Sanjiv Bajaj taking Bajaj Group to new highs*, Retrieved from https://economictimes.indiatimes.com/news/company/corporate-trends/post-division-brothers-rajiv-and-sanjiv-bajaj taking-bajaj-group-to-new-highs/articleshow/37547161.cms

THE FOURTH INDUSTRIAL REVOLUTION (2017) BY KLAUS SCHWAB, WORLD ECONOMIC FORUM, SWITZERLAND, P 172

Vijay Kumar Shrotryia[1]

There is no doubt about the speed of change that has accelerated in last few decades due to technology interventions. It has affected our thinking so much so that we are not able to predict the future even for next one decade. Last three hundred years have transformed the world in its demography, geography, economics and politics. Europe and Americas have dominated the scene till the 20th century and it is presumed that this century belongs to Asia.

In these changing times and trials Klaus Schwab (famously known for founding World Economic Forum) brings out this book out of his experiences and interactions to advocate the case for fourth industrial revolution which is going to be dominated by technology at a different level. The term Fourth Industrial Revolution or 4IR is in currency for last few years and has attracted the academia, practitioners and policy makers to get prepared and respond to this revolution in order to stay relevant. The book argues the exponential nature of change with the disruption created by technology in all kinds of market, industry and services.

The evolution of industry over the last few centuries has demonstrated transformations in business, industry, market, society and polity. The inventions and explorations have made life easier and comfortable. Railways facilitated movements and transportation, electricity brought light to human life and internet opened unthinkable opportunities which culminated into ubiquitous market spaces. The algorithms and binaries have redefined the way search engines operate and researches are conducted. It has revolutionized thinking, expectations and experiences. Last few centuries and decades also witnessed marketable knowledge creation affecting development of new disciplines of study.

Klaus Schwab informs that there are going to be four main physical manifestations of the technological megatrends, viz., autonomous vehicles, 3D printing, advanced robotics and new materials. The way research is being conducted and availability of physical space is reducing, nano technology shall change the way manufacturing happen in future and products are developed. The tipping points that are expected by 2025 are just terrific - 91.2 per cent of the respondents feeling that 10 percent of people shall be wearing clothes connected to the internet; around 90 per cent of the respondents feeling that there would be around 1 trillion sensors connected to the internet; more than 80 per cent of the respondents feel that 90 per cent population shall be using smart phones; around half of the respondents

[1] Professor, Department of Commerce, Delhi School of Economics, University of Delhi.

felt that there would be AI (Artificial Intelligence) machine on a corporate board of directors; etc. These are not vague estimations or wild imagination, this is how things are expected to shape in the 4IR domain and all stakeholders needs to get prepared for this time.

Technology shall impact growth and GDP as demand shall accelerate and so would production. Nature of job in future shall change as automation shall take away traditional jobs and new opportunities and jobs shall get created in the domain of new technologies. As highlighted in the book, occupations like telemarketing, tax preparers, insurance appraisers, legal secretaries, real stake brokers etc shall be more prone to automation as compared to mental health, choreographers, psychologists, counselors, HR managers, sales managers, CEOs, etc.

Because digital technology knows no borders, there are many questions that come to mind when considering the geographic impact of technology and the impact of geography on technology. What will define the roles that countries, regions and cities play in the fourth industrial revolution? Will Western Europe and the US lead the transformation, as they did the previous industrial revolutions? Which countries will be able to leapfrog? Will there 71 be greater and more effective collaboration for the bettering of society, or will we see increased fragmentation not only within countries but also across countries? In a world where goods and services can be produced almost everywhere, and where much of the demand for low-skilled and low-wage work is overtaken by automation, will those who can afford it congregate in countries with strong institutions and proven quality of life? (p74).

The whole ecosystem of interactions, interventions, governance, employment, ethics, delivery, citizenship, and society is expected to witness paradigm shift beyond imagination. Some of it would be gradual so may not surprise much, some of it would also be abrupt and shall steal away human creativity beyond imaginarium. The way forwards as briefed by Klaus Schwab for disruption by nurturing and applying four different types of intelligence, viz., contextual (the mind); emotional (the heart); inspired (the soul); and physical (the body). Certainly these are important and they need to be looked at from the perspective of a caution as well. The deep shifts as given in the appendix of the book provide an insight into the expected future in 4IR environment. There are 23 shifts that are narrated with their respective positives and negatives.

1. Implantable Technologies; 2. Our Digital Presence; 3. Vision as the New Interface; 4. Wearable Internet; 5. Ubiquitous Computing; 6. A Supercomputer in Your Pocket; 7. Storage for All; 8. The Internet of and for Things; 9. The Connected Home; 10. Smart Cities; 11. Big Data for Decisions; 12. Driverless Cars; 13. Artificial Intelligence and Decision-Making; 14. AI and White-Collar Jobs; 15.Robotics and Services; 16. Bitcoin and the Blockchain; 17.The Sharing Economy; 18. Governments and the Blockchain; 19. 3D Printing and Manufacturing; 20. 3D Printing and Human Health; 21. 3D Printing and Consumer Products; 22. Designer Beings; and 23. Neurotechnologies,

It is a fascinating story based on facts and figures, experiences and experiments, observations and studies which opens the eyes of the reader for embracing technology driven future. Technology and time shall certainly influence the nature of instant gratification which would not be a good sign for human well-being. But that is the price humans shall have to pay by succumbing. The book is a must read for the young students of today and teachers of tomorrow so that they are able to see the future and develop an appropriate appetite. Only time shall tell us how it is distributed and digested.

GUIDELINES FOR AUTHORS

Submission

Soft copy of the manuscript typed in MS Word send at commercejournal.dse@gmail.com.

The manuscript should be accompanied by:

- A separate cover page containing title of the paper, author's name, designation, official address, contact address, phone/ fax numbers and e-mail address.
- A non-mathematical abstract of about 150 words on the first of the paper. Nowhere in the body of the paper, the name or affiliation of author(s) be written in explicit or implicit form.
- Four to five keywords with JEL classification

Length, Font Style and Font Size

- The recommended length of the article is 5000 words including figures and tables on "8.5 x 11" (A-4) size papers with 1.5 inch margin on all four sides. In case of length of paper increases up to 6000 words a separate justification may be added in a separate document.
- Font Style – Times New Roman, Headings - 14-point font size, Sub-Headings – 12 point font size, Text – 12 point font size, spacing between lines- 1.0 line.
- Headings to be set in 'bold' letters and shall not be lettered or numbered. The same pattern should be followed in the entire paper.

Tables and figures

- All tables, charts, and graphs should be in black, not in colour and preferable compressed in excel sheet.
- Tables must be numbered consequently, titled and typed on separate page, with 1.0 inch line spacing, following the reference section. The number and the complexity of the tables and figures exhibited should be as low as possible.
- All figures should be indicated in Indian currency and equivalence in million orbillion in bracket.
- The location of the table should be marked within the text. Wherever necessary, the source should be indicated at the bottom.

Questionnaires & Referees

Authors using questionnaires should include a copy of the questionnaire along with the manuscript (length of the questionnaire is excluded from the limit prescribed). Authors can also send names of up to five potential referees on a separate sheet. Please mention their area of expertise, designation and full mailing address. The suggested referees should not have been students or teachers of the author at any time. They should also not be co-authors on any work, Proofs may be sent to the authors, if necessary, for correction. They should be carefully scrutinized and sent within two weeks after highlighting the changes incorporated in the text.

In-text references

The in-text references should include the author's surname, and year of publication, for eg: 'Chapman (1983) has argued... Many questioned the equality of working Japanese women (Sano, 1983). Where an author has more than one publication in the same year, use alphabetical ordering to distinguish: '… for example, (Dabscheck, 1986b).

The reference list should be arranged in alphabetical order by the first author. The full reference in the reference list will be:

- For books: Fait, R.C., (1984). Specification, Estimation and Analysis of Macroeconomic Models, Harvard University Press, Cambridge.

- For articles within books: Mehra, Y.P. (1994). Wage Growth and the Inflation Process: An empirical Approach. In B.B. Rao (Ed.) Cointegration for the Applied Economist (pp. 147-159). Basingstoke: Macmillan Press.
- For articles in journals: Verhoef, P. (2003). Understanding the effect of customer relationship management efforts on customer retention and customer share development. Journal of Marketing. (October), Vol.67, 30-45.
- Journal Article with DOI: Paivio, A. (1975). Perceptual comparisons through the mind's eye. Memory & Cognition, 3, 635-647. doi:10.1037/0278-6133.24.2.225
- Journal Article without DOI (when DOI is not available): Becker, L. J., & Seligman, C. (1981). Welcome to the energy crisis. Journal of Social Issues, 37(2), 1-7.
- Hamfi, A. G. (1981). The funny nature of dogs. E-journal of Applied Psychology, 2(2), 38-48. Retrieved from http://ojs.lib.swin.edu.au/index.php/fdo

References

References should be placed at the end of the manuscript. The list should mention only those sources cited in the text of the manuscript. Authors are requested to follow APA (6 ed.) style developed by American Psychological Association. For more information in this regard author is requested to refer American Psychological Association. (2009). Publication manual of the American Psychological Association (6thed.). Washington, DC: Author. American Psychological Association. (2007). APA style guide to electronic references (PDF). Washington, DC: Author.

Quotations

Quotations of four lines or more should be indented and typed in single space. Shorter quotations should be included in the body of the text.

Mathematical notations

Mathematical notations should be clearly typed and all equations should be numbered. Check the layout of mathematical expressions especially alignment, centring, length of fraction lines and type, position and closure of brackets. ***Footnotes***, which should be kept to a minimum, and should be numbered serially and included at the end of the article in double spaced typing.

Acceptance of Paper

- When a paper is accepted for publication author must submit a soft copy of the final version. Responsibility for the content of articles and communications, also for possible infringements of copyrights, remains entirely with the author(s) concerned.
- Upon acceptance of a paper, the author(s) deemed to have transferred the copyright of the article to the '-The Journal of Commerce and Business Studies', Department of Commerce, University of Delhi.
- The manuscript finally accepted for publication should be sent to 'The Editor, Department of Commerce, Delhi School of Economics, University of Delhi, Delhi- 110007, India'.
- A copy of the journal will be sent free of cost to each author.

Copyright

Proofs
Communication regarding editorial changes and proofs for correction will be sent to thefirst author unless otherwise indicated. Authors are responsible for ensuring that they have not duplicated an article already published or accepted. Authors should certify on the cover page of the manuscript that the material is not published, copyrighted, accepted or under review elsewhere.

DECLARATION

Statement about ownership and other particulars about 'Journal of Commerce and Business Studies' as required under Rule 8 of the Registration of Newspapers (Central Rule)

Form IV

1.	Place of publication :	Department of Commerce Delhi School of Economics University of Delhi, Delhi-110007
2.	Periodicity of publication:	Bi-annual
3.	Publisher's Name:	Prof. R.K.Singh (Head, Department of Commerce)
4.	Nationality:	Indian
5.	Address:	Department of Commerce Delhi School of Economics University of Delhi, Delhi-110007
6.	Editor's Name:	Prof. V.K.Shrotryia (Prof., Department of Commerce)
7.	Address:	Department of Commerce Delhi School of Economics University of Delhi, Delhi-110007
8.	Name and Address of the	Department of Commerce
9.	Individual who own the journal and Partners or shareholders holding more than one percent of the capital	Delhi School of Economics University of Delhi, Delhi-110007

I, Prof. R.K. Singh, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Prof. R.K. Singh
Head, Department of Commerce

Journal Subscription

The Editorial Advisory Board of Journal of Commerce & Business Studies in its meeting held on 9-12-2013 resolved that:

' Subscription price for the journal may be kept as Rs. 300 per issue and Rs. 500 for annual subscription….'

As per the board decision the journal may be subscribed as per following rates effective from the next issue (January-June, 2014):

Individual Issue: Rs. 300/-
Annual Subscription: Rs. 500/-

Subscription Form

The Head of Department
Department of Commerce
Delhi School of Economics
University of Delhi, Delhi-110007

Sir

I/ We wish to subscribe to 'Journal of Commerce & Business Studies' of Department of Commerce, Delhi School of Economics, University of Delhi. A Cheque/ Bank Draft bearing No…… dated……. for Rs… ..... drawn in the favour of 'Head of Deptt Journal & Other Pub A/c' and payable at Delhi is enclosed herewith.

Following details are furnished for correspondence:

Name/ Institution _____

Mailing/ postal Address_____

_____

_____

Phone (s)_____(O)_____(R)_____(Mobile)_____

E-mail_____Fax_____

Sincerely yours

Signature
(Stamp in case of Institutional members)

Journal of Commerce and Business Studies

Department of Commerce formally set up as a separate entity in 1967, has imbibed the Delhi School of Economics tradition of exploring new frontiers of knowledge and innovation in academics. In its history spanning over five decades, it has redefined commerce education in the country and its rapid growth is reflected in the expansion as well as novelty of its academic programmes. To extend further the dissemination of knowledge, department publishes a bi-annual journal titled **Journal of Commerce and Business Studies**.

Journal of Commerce and Business Studies - a refereed journal addresses a wide range of research areas related to Management, Commerce, Economics, Business, Retailing, Finance, Marketing, Human Resource, Banking, Insurance, Corporate Governance and emerging paradigms as allied areas of knowledge. Academicians, professionals and researchers in all parentheses related to commerce and business are, therefore, invited to submit their research articles and reviews, validations and the impact of new emerging issues on business, and case studies for publication in the journal. For publications, the papers will be selected through double peer review process to ensure their originality, relevance, and credibility.

Authors are invited to submit their manuscript, prepared as per the enclosed guidelines for publication in the journal. Manuscript should be submitted online at commercejournal.dse@gmail.com. Once accepted for publication author will be intimated about the specific issue of journal the manuscript will be published.

Department of Commerce
Delhi School of Economics
University of Delhi, Delhi-110007