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RESEARCH BULLETIN

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

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Mission Statement

The CMA professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting.

Vision Statement

The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally.

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Printed and Published by

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FOREWORD

India is expected to be the fourth largest private wealth market globally by 2028. India is today one of the most vibrant global economies on the back of robust banking and insurance sectors. The relaxation of foreign investment rules has received a positive response from the insurance sector, with many companies announcing plans to increase their stakes in joint ventures with Indian companies.

The Government and Reserve Bank of India (RBI) have taken various measures to facilitate easy access to finance for Micro, Small and Medium Enterprises (MSMEs). These measures include launching Credit Guarantee Fund Scheme for MSMEs, issuing guideline to banks regarding collateral requirements and setting up a Micro Units Development and Refinance Agency (MUDRA). With a combined push by Government and private sector, India is undoubtedly one of the world's most effervescent capital markets. In 2017, a new portal named 'Udyami Mitra' was launched by Small Industries Development Bank of India (SIDBI) with an aim to improve credit availability to MSMEs in the country. India has scored a perfect 10 in protecting shareholders' rights on the back of reforms implemented by Securities and Exchange Board of India (SEBI).

Over the coming quarters, there could be a series of joint venture deals between global insurance giants and local players. The Association of Mutual Funds in India (AMFI) is targeting nearly five-fold growth in AUM to Rs 95 lakh crore (US$ 1.47 trillion) and more than three times growth in investor accounts to 130 million by 2025. India's mobile wallet industry is estimated to grow at a Compound Annual Growth Rate (CAGR) of 150 per cent to reach US$ 4.4 billion by 2022, while mobile wallet transactions will touch Rs 32 trillion (USD $ 492.6 billion) during the same period.

I am pleased to present Research Bulletin, Vol.45, Nos. III & IV issue. I trust you will enjoy reading the Research Bulletin and will find it to be an extremely useful tool to enrich your knowledge base in the various aspects of the Indian economy.

CMA Balwinder Singh
President
The Institute of Cost Accountants of India

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CHAIRMAN'S COMMUNIQUÉ

I feel privileged to place before you the present volume of Research Bulletin, Vol.45, Nos. III & IV issue. Our Research Bulletin mainly highlights on pragmatic research articles and has a much wider reader base consisting of academicians, researchers, industry professionals and practitioners.

Financial literacy is imperative in today's tech-intensive digital world. Lack of it can lead to poor investments and bad monetary decisions. The data shows that people are eager to empower themselves by enhancing their financial knowledge in order to make better financial planning and makes the most of the available financial resources for maximum benefit. Financial Literacy has become one of the topmost priorities for most nations today as understanding basic financial concepts allows people to manage their wealth in a more organized way which in turn helps in the economic growth of the nation.

Financial literacy is nothing but the skill and perception about personal management of financial resources which ultimately helps to achieve financial empowerment. Financial empowerment refers to basic knowledge that may require financial planning and decision making. It provides twin benefit of protecting an individual from financial frauds as well as ensures planning for a financially secure future. Financial literacy gives consumers the necessary knowledge, skill, and power which are required to assess the suitability of various financial products and investments available in the financial market.

I take this opportunity to express my appreciation for my fellow members of the Journal and Publications Committee, esteemed members of the Review Board and the eminent contributors for their earnest effort to publish this volume in time.

This Bulletin comprises of articles on contemporary issues like Cost-Benefit Analysis, Consumer motivation for organic product consumption, Corporate Governance on Firm Valuation, Mega bank merger, Financial Literacy, etc.

The readers are invited to tender their valuable feedback towards enrichment of Research Bulletin.

Suggestions for improvement of this Bulletin shall be highly cherished.

CMA (Dr.) K. Ch. A.V. S. N. Murthy
Chairman, Journal & Publications Committee
The Institute of Cost Accountants of India

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EDITOR'S NOTE

Greetings!!!

The possibilities offered by digital technologies over the past two decades have been remarkable. The pervasiveness of broadband, ubiquitous connectivity, cloud computing, the 'Internet of Things', social networking — all of them have transformed how we work, communicate, socialize, and do business. These new digital technologies have brought many business opportunities. To fully embrace these digital technologies, you need to rethink your strategy. Innovative digital solutions can reduce costs and add value at every stage of a product's life-cycle, both within each stage of the value chain and across its entirety.

Business digitization allows you to better evaluate all production processes, analyze intensely each step and identify problems, incongruities and challenges accurately. The digitization of documents and the disappearance of space and time barriers derived into an optimization of resources and the streamlining of the production and commercialization processes. Business digitization reduces operating costs up to 20% and improves efficiency. It also enables efficient cost management that implies a more effective control of production and sale processes. Digitization also allows companies to create new business models and revenue sources. Also generates a closer bond with clients and prospective customers and create added value for them. Further, allows the use of new sales channels, such as e-commerce or social media networks.

The digitization of an organization is not a goal, but a way to improve business management and increase productivity. Currently, digitization is not an option, but a necessity if you want your company to be successful. Due to the continuous and fast technological transformation, the market has radically evolved. Consumers have changed their habits, needs, desires, ways of communicating and consuming. If you cannot read and understand this new scenario, all the money spent on the best technology and applications won't make a difference for your organization. An effective business digital transformation must be based on these three pillars: people, automated information management, intelligent digital communication.

We publish both theme based and non theme based articles on the contemporary issues. Inputs are mainly received both from academicians and the corporate stalwarts. Our attempt is to draw attention towards environmental, social, economical and market-related issues, so that the researchers and decision-makers can enrich their knowledge base and can take strategic decisions deliberately.

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We are extremely happy to convey that our next issue of Research Bulletin would be Vol.46 No.I April 2020.

We look forward to constructive feedback from our readers on the articles and overall development of the Research Bulletin. Please send your mails at *research.bulletin@icmai.in*. We express gratitude to all the contributors and reviewers of this important issue and wish our readers get plenty of academic inputs from the articles.

CMA (Dr.) Debaprosanna Nandy
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Journal & Publications Committee: 2019 - 20

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Contents

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ACCOUNTING – IMPACT OF TECHNOLOGY

S. Rajaratnam

Abstract:

Development of technology has had its effect on all aspects of life including accounting hitherto under the discipline of accounting principles prescribed as Accounting Standards for different purposes differently. The accounting records will now have to include printouts, floppies, discs, tapes, credit and debit cards, interfaces, NEFT, RTGS and BHIM and other electronic modes. Industry-wise accounting now available for purposes as for banking, insurance and co-operative societies may be extended further. Cost Audit facilitates cost control and cost reduction computing "true and fair view" of cost of production/ service providing a tool for analysis. Cost accounting has greatly helped optimization of production, improvement of marketability.

Institute of Companies Secretaries of India not lagging behind with plan for four Accounting Standards CSAS 1 to 4 with guidelines for first three on recommendatory basis published for public comments. It was hitherto confined to secretarial audit now extends its scope to evaluation of conclusions on audit process under any other statutes, besides more innovations prompted by developing technology.

With robotics taking over their normal functions, the auditors have to be creative being participants of the ever-expanding technology rather than being mere applicants of such technology.

Key Words:

Accounting Standards, Accounting Technology, Cost Accounting, Cost Audit, Taxation

We are living in an age of fast developing technology. Accounting including cost accounting is undergoing similar change. The concept of books of account is now not so narrow as in conventional accounting as is evident from an amendment introduced by the Finance Act, 2001 defining "books of accounts" under section 2(12A) of the Income-tax Act in a wider sense to include "print-outs and data storage in a floppy, disc, tape or any other form of electro-magnetic data storage device" in keeping with the present development of computer technology with its impact on business and law. Even diaries maintained by the assessee could be treated as books of accounts with reservation expressed in a book "Landmark Cases in Direct Tax Laws, 2019", co-authored by me as under:

> "In this context, the issue that arose in *Sheraton Apparels* v. *ACIT* [2002] 256 ITR 20 (Bom), was whether the entry recording the asset in a diary maintained by the assessee could be treated as books of account. The High Court found that books, which contain successive entries of items may be a good memorandum book, but if they are not totaled or balanced, there is no reckoning and no accounts, so that such books cannot be treated as books in commercial sense."

The Central Board of Direct Taxes has notified new Rule 6ABBA to the Income Tax Rules, 1962, which prescribed the "Other Electronic Modes". The Board has prescribed the following modes:

a) Credit card;
b) Debit card;
c) Net Banking;
d) IMPS (Immediate Payment Service);
e) UPI (Unified Payment Interface);
f) RTGS (Real Time Gross Settlement);
g) NEFT (National Electronic Funds Transfer);
h) BHIM (Bharat Interface for Money) Aadhar Pay.

These developments in India is a shadow cast on accounting by the developing technology.

Accounting is generally expected to follow mercantile system, which is mandatory under company law as explained in the above book as under:

> "Accrual system is the standard system of accounting
>
> Mercantile system of accounting has some set rules as understood in text books, Generally Accepted Accounting Principles (GAAP) and Accounting Standards, both national and international as well as accounting policies in commercial practice. Still there is often more than one way of understanding a commercial transaction for accounting purposes. Since the income for income-tax purposes is

computed under ordinary principles of commercial accounting, there is a fallout in tax accounting, where the accountant's concept of matching principle is not always acceptable, since taxable income is understood as a legal concept as ordained under the income-tax law. Since the accounts are kept on the basis of matching principle, there can be a difference between the taxable income and income as per accounts, so as to require adjustment to the income as per books to arrive at taxable income for purposes of income-tax.

The law on the subject has been spelt out in the *locus classicus* on the subject in *Calcutta Co. Ltd.* v. *CIT* [1959] 37 ITR 1 (SC). After review of both English and Indian precedents, the Supreme Court found that the income even in commercial sense would require computation by taking into consideration all expenditure "actually incurred or liability in respect thereof as accrued even though it may have to be discharged at some future date". Where an expenditure or liability does not relate to the year for which income is computed, the accountants would treat such amount as prepaid and show it as an asset, even in cases where such amount is not refundable in case the goods or services for which the payment is made in advance are not availed. There may be other variations between accounting for income-tax and accounting on matching principle."

Method of accounting for certain industries are prescribed in statutes governing them as for insurance, banks, co-operative institutions and others. Cost accounting in prescribed form is a recent development for specified industries.

Reginald H. Smith in his book "Honest and Simple Account" refers to the task of accountants to make it intelligible to all sections of the community. But he suggests that the P&L Account and balance sheet by themselves may not be so intelligible for those unfamiliar with accounts, but suggests Notes on Accounts, qualifications incorporating responses and explanations made available, if not in accounts, but at least in Directors' Report, which will make the accounts more intelligible, while being an answer to the allegations of inadequacy of information from any quarter.

Artificial disallowances like cash payments beyond specified limits under section 40A(3) or cash loans and deposits beyond the specified limits under section 269SS and 269T of the Income-tax Act, 1961 are not matters expected in the accounts, but should incorporate the existence of reasonable cause for those transactions in cash, since the provisions themselves have been upheld as constitutional and disclosure of larger scale transactions in cash with explanation therefor would serve the purpose of not only for income-tax, but makes the accounts more reliable because of clarification in the accounts in justification for large cash transactions, which are always suspect because of doubts amounting to prejudice against such cash transactions, making the accounts themselves unpalatable, because cash payments lack proof in contrast with cheque payments.

Technology in accounting has been developing in different directions. The Reserve Bank of India has come with new accounting norms to be applicable from the fiscal year 2023. It was observed, that the banks are not implementing global accounting standards probably because these standards would place a burden of higher capital necessitated for them. Rs.1.1 lakh crores would be necessary for the public sector banks along with confirmation for adherence to global standards. But it is hardly realised that the global accounting standards have to be adopted sooner or later in order, that banks in India are recognised in the global community as having a sound system of accounting. As otherwise, Indian banks in comparison may suffer, for example, from the inference of lack of capital adequacy. But then, steps are not being initiated in India for the implementation of global accounting standards. It is a potential bubble with India being isolated with its banking accounts considered as totally unreliable. It may necessitate further infusion of capital by the Government or the banks themselves to raise capital by other means. The estimated requirement to fall in line with global accounting standards is Rs.3.5 lakh crores. This staggering requirement necessitates immediate initiation of the steps to reach the global accounting standards sooner or later, so that India may not be isolated from the rest of the world.

Another aspect of accounting technology, which one has to bear in mind is the requirement of transfer pricing with materials in the accounts themselves to indicate, that an international transaction with associated enterprises falls in line with the requirement of such transactions to be at arm's length. Sooner or later steps must be taken to bridge the gap between the actual price and the arm's length price, wherever there is a significant variation, so that familiarity with transfer pricing regulations is an essential part of the requirement of present accounting technology. The choice of most appropriate method and selection of comparables either as between businesses or comparable segments functionally similar with adjustments necessary to the benchmark so arrived at is also a study necessary in the present and future accounting technology.

While technology is developing fast, India is not conforming even to the existing Ind Accounting Standards (Ind AS). See Annexure for Ind AS for notified ICDS on par with International Financial Reporting Standards (IFRS 9) *inter alia* requiring banks to undertake recognition of provisions for losses which can be done only by monitoring the use of the loans already granted to the business from time to time. Generally Accepted Accounting Principles (GAAP) would also require banks to recognise mark-to-market losses. Ind AS expects increased transparency, for example, to enable the comparability of financial standards of Indian banks with global counterparts. But in actual practice, IFRS 9 itself does not recognise the necessary provisions for expected losses at the earliest point of time. What is more is the absence of information regarding capital adequacy ratio, which is necessary all the time, but it is hardly accepted as a requirement of general accounting policy stipulated for the banks under the Reserve Bank regulations. The recent merger of banks has been prompted for ensuring capital adequacy among other reasons.

A recent study in a US report reads, that Wall Street approach is totally inadequate from accounting point of view as bank stocks are over-inflated with forecast of dot-com bubble, if Nasdaq does not rally to set right the prices being fueled by low interest rate encouraged by World Wide Web (WWW) misleading the potential investors for both private and listed shares having their value boosted with technology fueling the enthusiasm created by Apple, Amazon, Alphabet, Google, Facebook and Netflix competing with each other creating S&P 500 Rally leading to the apprehension of expectation of the bubble bursting at any time. It has been estimated by Nasdaq that the increase in value is now eight times the value in 2002, which is clearly one arising out of over-valuation, notwithstanding the claim, that valuation rules are adopted. These developments are being reported in Economic Times from time to time as a warning to the banking industry.

One of the factors which is overlooked in the rationality in asset monetization reflected by problems of recovery of receivables.

Accounts, universally are expected to be simple, so that in the words of Billy Carter on law wonders "sometimes even lawyers need lawyers", so that on parity of reasoning, accountants may need accountants to explain the accounts. Accounting systems are not static, since they undergo changes with technological development with newer and newer improvements, other than what is already available in any text book on Accounting, so as to be not convenient for adoption of developing technology.

One has to remember that tax is always based upon accounting and law ever changing making one to recall the interesting observation of Margaret Mitchell in her novel "Goes with the Wind", that "Death and taxes and child birth! There's never any convenient time for any of them!".

Good accounting anticipates and protects the business from adverse consequences, if one bears in mind not only the requirement of accounting principles but other laws wherever they have application. One has to remind oneself all the time that the accounts themselves should not lead to any inference of any possible violation of any law.

The format of certification of any audited account not only meets the present requirement, that the accounts are based upon requirements of company law with information obtained from the books of accounts, which satisfy the requirement of both accounts and cost records in conformity with the standards including cost accounting standards.

Conventional accounting, which follows Generally Accepted Accounting Principles (GAAP), has undergone radical changes. But for section 209 of the Companies Act, 1956, accounting in general sense could be any system regularly employed, while the choice is ordinarily between accrual and cash system of accounting. Section 145 of the Income-tax Act, 1961 permits either cash or mercantile system of accounting. But such accounting, whatever is chosen, is required to be regularly followed. Cash system of accounting, though accepted for tax purposes, may not indicate the real net worth of the business from the balance sheet framed on the basis of such accounts.

It is not unusual to adopt both accrual and cash system for different specified activities known as hybrid system, which is also not barred as long as they are consistently followed, so that there is no distortion of taxable profits by changes in method of accounting from year to year. Even so, it is not permissible for income-tax purposes. But the Courts have taken a broader view as decided in the case of a chit company, which followed its own system in the light of the complex nature of its business. In CIT v. Bilahari Investment P. Ltd. (2008) 299 ITR 1 (SC), the assessee, a private company, subscribed to chits as part of its business activity. They maintained their accounts on mercantile basis and computed the profit/loss at the end of the chit period following the completed contract method. This was accepted by the Department, but for the assessment years 1991-92 to 1997-98, the Assessing Officer came to the conclusion that the completed contract method for chit discount was not accurate in recognizing/identifying income year to year and that the percentage of completion method was to be preferred. The High Court held that the completed contract method of accounting adopted by the assessees for chit discount was valid and the Department erred in spreading the discount over the remaining period of the chit under the percentage of completion method on proportionate basis.

Justice S.H. Kapadia on grant of leave delivered the judgeemnt of the Court in following words:

> "19. In the judgment of the Bombay High Court in Taparia Tools Ltd. it has been held that in every case of substitution of one method by another method, the burden is on the Department to prove that the method in vogue is not correct and it distorts the profits of a particular year. Under

the mercantile system of accounting based on the concept of accrual, the method of accounting followed by the assessees is relevant. In the present case, there is no finding recorded by the Assessing Officer that the completed contract method distorts the profits of a particular year. Moreover, as held in various judgments, the chit scheme is one integrated scheme spread over a period of time, sometimes exceeding 12 months. We have examined the computation of tax effect in these cases and we find that the entire exercise is revenue neutral, particularly when the scheme is read as one integrated scheme spread over a period of time."

It found that whatever the system adopted by the assessee could be accepted as long as they are regularly followed, so that even the change in company law should not affect the acceptance of a system, if it continues the same method of accounting which it had followed before the amendment under company law making accrual system mandatory, even as pointed out in Cyber Media (India) Ltd. v. CIT (2011) 338 ITR 177 (Del).

Cost Accountants cannot ignore the law hereinbefore. In fact, the format of Cost Audit Report requires in Paragraph 5 of the certificate conformity with company law requirements, while it also refers conformity with Cost Accounting Standards solely for enabling computation of input cost with output result meant as a tool for management in budgeting and in setting up cost control supervision to enable improvement in margin. Since it is an internal tool of management, it need not conform to the rigid principles of accounting applicable as for financial accounting as long as it conforms to the requirements of cost accounting.

Some costs tend to remain the same even during busy periods, unlike variable costs, which rise and fall with volume of work. Over time, these "fixed costs" have become more important to managers. Examples of fixed costs include the depreciation on plant and equipment, and the costs of departments concerned with maintenance, tooling, production control, purchasing, quality control, storage and handling, plant supervision and engineering. These can be located in any sound system of accounting.

Financial accounting computes the current or accounting period status and results in the form of Profit and Loss Account and Balance Sheet. Cost Accounting computes the cost of production/service in a manner that facilitates cost control and cost reduction.

Financial accounting aims at presenting 'true and fair' view of transactions, profit and loss for a period and a Statement of financial position (Balance Sheet) on a given date. Cost accounting aims at computing 'true and fair' view of the cost of production/services offered by the firm. Cost accounting provides an analysis, which may combine both the objective and subjective assessment of costs contributing to a standard result.

New system of accounting due to digitalization has come up like bitcoins with the later evolution of blockchain, which is a recent one, which came into vogue in 2009 as the first digital cryptocurrency, which was also called bitcoin, through the use of the blockchain technology, wherein a blockchain network stores the information required in hash of the previous block. A hash is a unique mathematical code, which belongs to a specific block paving the way for blockchain, which keeps the block secured. Blockchain is tamper-proof like a finger print. A blockchain can be a private one agreed between the parties in a group or it could be a public one with access for all. Blockchain is a development consequent on the world getting more digitized paving the way for a universal online, so that interaction between different States is facilitated, while at the same time intellectual property rights and other rights governed by a patent or copyright can also be guarded by the use of the programme meant for ensuring privacy. Blockchain technology, which is probably the first application of cryptocurrency with more and more applications later found for the system, has caused a major transformation at the global level with further development in the cards.

These developments have their impact on cost accountants, but reconciliation of the additional burden on cost accountants on his functions is not insurmountable. The classification as between fixed and variable cost, a tool in decision making process is still needed and the task made easier for the accountant with the development of the technology. A "true and fair view" expected of accounts, whether for financial or cost accounting, is best ensured by the technological developments, with greater accuracy as regards traceability of direct and indirect cost in different activities relating to business, so that it is possible to make improvement in accounting, whether financial or cost accounting in any specified area giving ample choice with all the information available for all the relevant costs, whether opportunity cost or replacement cost or shut down cost or capacity cost or what is merely a sunk cost.

Standard cost accounting with more accurate allocation of fixed cost over a period of time enables better business strategy in a competitive business environment, besides enabling correction of any shortfall by using variance analysis, which is an important aspect of standard accounting. Identification of constraints, an exercise, which became popular in the last three decades, will be a normal exercise enabling the optimum utilization of all resources especially a scarce one, while saving the cost by sparing underutilized resources by substituting a more suitable device.

The recent development of lean accounting to enable control and measurement of different methods and processes is a major one, which dispenses with traditional management accounting standards like standard costing, activity-based costing, variance reporting, cost-plus pricing, complex transactional control systems, enabling reconciliation of untimely and often confusing financial reports. Identification of fixed and variable cost to arrive at contribution of margin known as cost volume profit analysis or marginal costing is possible with the volume of information in this system of accounting digitalized and safeguarded.

The new system of accounting prompted by improvement in technology would take into account both the requirements of financial accounting and requirement of management accounting, so as to be useful as an internal tool for management. It is easier to adopt activity based costing, because overhead cost can be more easily identified under the improved system of accounting. The lean accounting pertaining to cost accounting will help to improve the financial management itself, so that the interlinking between the cost accounting and financial accounting will become a reality facilitating improved marginal costing analysis enabling identification of factors relevant for further expansion of business, which is rendered easier consistent with the objective of promoting "ease of business", which is a recently popularized objective of the Government. Both financial accounting and cost accounting have made rapid strides, which will complement each other to optimize production and improve marketability, so as to be irreplaceable tools of business management. Combining the requirements of both the systems in a more preferable format will be the challenge in future both for financial and cost accountants.

One of the concerns of businessmen is the matching principles to ensure that its cost is fully covered by the sale price and correspondingly the cost does not exceed the selling price, so as to affect its margin. Such matching need not be in the same year, so that it is better assured by spread over of expenses, where the benefits overrun the year, as for example in the matter of advertisement outlay of the year in which it is incurred or paid. But such treatment does not always accord with strict accounting principles as pointed out in CIT v. Brilliant Tutorials P. Ltd. (2007) 292 ITR 399 (Mad).

But extraordinary expenditure with benefit for future years is permitted to be amortized as in the case of discounts for bonds and debentures covering a long period. For example, debenture interest is either paid as discount in the year of issue or made available in the year of encashment. There could be no objection of spread over of the liability. Such departures from the ordinary concept of accrual or cash system are permissible as for example in non-recognition of income from sticky loans or what are known as Non-Performing Assets (NPA). This treatment was accepted by the Supreme Court in UCO Bank v. CIT (1999) 237

ITR 889 (SC) in a landmark judgement taking the view that there is no need to take credit for interest from doubtful debts. Some banks do not credit such interest on sticky loans to the P&L Account, but carry it to suspense account. Even this system is not impermissible. The Supreme Court in UCO Bank Ltd.'s case (supra) referred to the question "Whether, on the facts and in the circumstances of the case, the Tribunal is justified in law in cancelling the Commissioner of Income-tax's order under section 263 of the Income-tax Act, holding that when the assessment was completed, the only paper available was the Board's circular dated October 9, 1984, where the issue was whether interest in suspense account to the extent of Rs. 49,15,435 could be treated as income accrued". The High Court answered in favour of the Revenue in view of the decision of this court in State Bank of Travancore v. CIT (1986) 158 ITR 102 (SC) in following words:

> "The method of accounting which is followed by the assessee-bank is the mercantile system of accounting. However, the assessee considers income by way of interest pertaining to doubtful loans as not real income in the year in which it accrues, but only when it is realised. A mixed method of accounting is thus followed by the assessee-bank. This method of accounting adopted by the assessee is in accordance with accounting practice. In Spicer and Pegler's Practical Auditing the relevant passage occurring at page 186-187 has been reproduced in the minority judgment of this court in State Bank of Travancore v. CIT [1986] 158 ITR 102 at page 120. It is as follows:

"Where interest has not been paid, it is sometimes left out of account altogether. This prevents the possibility of irrecoverable interest being credited to revenue, and distributed as profit. On the other hand, this treatment does not record the actual state of the loan account, and in the case of banks and other concerns whose business it is to advance money, it is usual to find the interest is regularly charged up, but when its recovery is doubtful, the amount thereof is either fully provided against or taken to the credit of an interest suspense account and carried forward and not treated as profit until actually received."

Similarly, referring to interest on doubtful debts, Shukla and Grewal on Advanced Accounts, ninth edition, at page 1089 state as follows:

"Interest on doubtful debts should be debited to the loan account concerned but should not be credited to interest account. Instead, it should be credited to interest suspense account. To the extent the interest is received in cash, the interest suspense account should be transferred to interest account; the remaining amount should be closed

> by transfer to the loan account. This treatment accords with the principle that no item should be treated as income unless it has been received or there is a reasonable certainty that it will be realised." (Vide State Bank of Travancore v. CIT [1986] 158 ITR 102, 120).

The assessee's method of accounting, therefore, transferring the doubtful debt to an interest suspense account and not treating it as profit until actually received, is in accordance with accounting practice."

There have been differential treatment of prior period items or in making distinction between provision and reserves or what are known as quasi-contract liability besides on matters, where spreadover is possible or claimed. The treatment of disputed items, which had become due need not be accounted, though it had accrued even as decided by the Supreme Court in P. Mariappa Gounder v. CIT (1998) 232 ITR 2 (SC):

> "This decision was quoted with approval in CIT v. Hindustan Housing and Land Development Trust Ltd. [1986] 161 ITR 524, in which case also this court was called upon to deal with a question as to when the additional compensation awarded was liable to be taxed. In that case the amount of compensation awarded by the arbitrator was in dispute. On an appeal having been filed by the State Government it was held that the said amount could be taxed only when the dispute was resolved because if the appeal had been allowed in its entirety, the right of payment of enhanced compensation would have fallen altogether."

A mere claim not accepted by the other party, but pending adjudication, though recorded as a receipt, has to be dealt with in a realistic manner with reference to probability or improbability of realisaiton as was pointed out in CIT v. Shoorji Vallabhdas and Co. (1962) 46 ITR 144 (SC) *inter alia* approving CIT v. .Chamanlal Mangaldas and Co. (1960) 39 ITR 8 (SC) in following words:

> "No doubt, the Income-tax Act takes into account two points of time at which the liability to tax is attracted, viz., the accrual of the income or its receipt; but the substance of the matter is the income. If income does not result at all, there cannot be a tax, even though in book-keeping, an entry is made about a "hypothetical income", which does not materialise. Where income has, in fact, been received and is subsequently given up in such circumstances that it remains the income of the recipient, even though given up, the tax may be payable. Where, however, the income can be said not to have resulted at all, there is obviously neither accrual nor receipt of income, even though an entry to that effect might, in certain circumstances, have been made in the

books of account. This is exactly what has happened in this case, as it happened in the Bombay case, which was approved by this court. Here too, the agreements within the previous year replaced the earlier agreements, and altered the rate in such a way as to make the income different from what had been entered in the books of account. A mere book-keeping entry cannot be income, unless income has actually resulted, and in the present case, by the change of the terms the income which accrued and was received consisted of the lesser amounts and not the larger. This was not a gift by the assessee firm to the managed companies. The reduction was a part of the agreement entered into by the assessee firm to secure a long - term managing agency arrangement for the two companies which it had floated.

In our opinion, the High Court was right in coming to the conclusion that on the facts of this case the larger income neither accrued nor was received by the assessee firm."

A cost accountant cannot ignore the principles decided in these cases when they relate to factors relevant in cost accounting notwithstanding the listed duties assigned to the objectives of cost audit in following words:

"The basic objective of cost audit is to ensure that the cost of production as well as cost of sales includes only those factors which are absolutely necessary and that those factors are used in the most efficient way. 2. To verify that that cost accounts/records are accurate. 3. To detect all errors or frauds in cost records. 4. To introduce some sort of internal audit with a focus on costs to reduce the work of financial auditor. 5. Cost system must be different for different objectives and the cost auditor designs a system which works best and quickest. 6. To see that the organisation maintains proper cost books, accounts and records either required by law or otherwise as a managerial decision. 7. To verify that the basic principles of cost accountancy or related rules framed thereto to implement certain statutory provisions are properly carried out in maintaining cost accounts in the right manner. 8. To report on the optimum utilisation of national resources, to the Government".

In the context of audit, one cannot ignore the recent four Auditing Standards (CSAS) to be followed by the Practising Company Secretaries (PCS), while undertaking assignments under any statute. Guidelines are prescribed in three standards. CSAS 1 is mandatory for secretarial audit apart from internal audit and audit of stock brokers and investment advisors, portfolio managers and credit rating agencies among others as long as the auditor has no conflicting interest in the auditee. The audit ends with an eligibility certificate which is confidential.

The procedural aspect is set out in CSAS 1, while the audit process and documentation is set out CSAS 2. The principles involved in evaluation and conclusions derived out of audit are set out in CSAS 3, which because of its applicability for all audit is reproduced below:

- Consider the materiality, while forming opinion.
- Adhere to principle of completeness, i.e., consider all relevant audit evidence before issuing audit report.
- Adhere to principle of objectivity, i.e., apply professional judgment and skepticism to ensure evidence is factually correct.
- Adhere to principle of timeliness, i.e., prepare audit report within the agreed time-frame.
- Adhere to principle of a contradictory process i.e., when two contradictory facts emerge on same subject matter of audit, auditor must strive to find additional evidence/ material which supports or negates one of them.
- Verify accuracy of facts and responses from concerned persons.
- Indicate if third party report is provided by the auditee and also consider important findings of third party.
- Carry out a supplemental test to check veracity of third party report.

Express unmodified opinion if satisfied that:

- Applicable laws have been duly complied with in terms of timeliness as well as process and
- Relevant records are free from misstatement.

Express modified opinion in bold or italic letters. Modified opinon is to be issued if:

- Non-compliance of applicable laws is found.
- Relevant records are not free from misstatement.
- Sufficient and appropriate audit evidence to ensure the above is not available.
- Ask auditee to remove any such limitation on scope of audit which is likely to make the Auditor give modified opinion or disclaimer.
- In case of absence of sufficient and appropriate evidence, if the auditor concludes that effects of unavailability of such evidence will be non-material, he shall give unmodified opinion. However, if the effects are likely to be material, he shall express disclaimer of opinion.

Audit report further requires any general information regarding appointing authority, responsibilities expected in the audit report along with information of any peer review, if it had been undertaken. The audit report is designed on the basis of Auditing Standards to ensure 'good corporate governance" and thereby enhancing level and quality of compliance.

The special features of each case again has to be borne in mind as industry-wise accounting system has been recognised as in the case of banks and security transactions and contracts. In the case of construction contracts, retention moneys withheld by the contractee till such period for payment elapses after completion has been a matter of controversy. Circular No.10 of 2017 dated March 23, 2017 (2017) 392 ITR (St.) 60 refers to this issue under the title "Clarifications on Income Computation and Disclosure Standards (ICDS) notified under section 145(2)" (See Annexure), so that it can be taken as income only if there is a reasonable certainty of receipt as explained in this Circular of the Board.

The issues relating to circulation schemes and development agreements, cash incentives by way of subsidies, are some of the other outstanding issues decided one way or the other. There is also no finality as regards hire purchase agreement, where the interest element is taken as credit by splitting up the receipt by adoption of Sum of Digits (SOD) method for determination of income even as provided in the Accounting Standards, which would require recognition of interest on this basis. But it now offers a choice as between SOD method or Equated Monthly Instalment (EMI) method. EMI method was found acceptable in CIT v. Ashok Leyland Finance Ltd. (2012) 82 CCH. 287. Not all Income Computation and Disclosure Standards (ICDS) have been found to be binding as some of them are found to be invalid as for example in the matter of payment of tax as held in Chamber of Tax Consultants v. Union of India (2018) 400 ITR 178 (Del), where "prudence" is accepted as a fair test for treating a receipt as income or not. ICDS I to X and the clarifications thereon are annexed as Annexure 1 and 2.

Warning from tax point of view

(i) Concept of tax planning

The following extract from Chapter 1 "A Tax Executive's role in Tax Management" in the author's book "Tax Management" reads as under:

> "The general approach of the courts in respect of tax planning has been to recognise the right to plan one's taxes by means, which are not artificial, sham or make-believe. In other words, they should be credible and prompted by commercial considerations. The Supreme Court in *Union of India* v. *Azadi Bachao Andolan* [2003] 263 ITR 706 (SC) had occasion to review the case law in the context of what was alleged as an abuse of double tax avoidance agreement by choosing agreements, which are more favourable to the taxpayer by taking advantage of those

agreements, which are favourable to the taxpayer by locating business or industry in favoured countries. The Supreme Court held that treaty shopping should not be understood as illegal, merely because of tax advantage and that the inference that a transaction is sham or a device actuated by improper methods cannot be lightly made. Certain remarks made by O. Chinnappa Reddy J. in *McDowell and Co. Ltd*. v. *CTO* [1985] 154 ITR 148 (SC), it was observed "cannot be taken as having the concurrence of the other Judges to the radical thinking, when Ranganatha Mishra J. as he then was clearly expressed his view that tax planning may be legitimate within the framework of law and that what are discredited are colourable devices, dubious methods and subterfuges". The inference that the Westminster principle has been exorcised in England, it was pointed out, is mistaken as had been explained in *Craven* v. *White* [1990] 183 ITR 216 (HL). The cardinal principle is that where there is a chain of transactions with intent to produce a single composite over-all result with the other transactions in the chain not having a meaningful purpose, the effect of such transactions will be ignored by the court. It is in this view that it was found that Westminster principle is not dead, but very much alive and kicking. *McDowell's* case [1985] 154 ITR 148 (SC) was understood in *Banyan and Berry* v. *CIT* [1996] 222 ITR 831 (Guj), not to mean that every action or inaction on the part of the taxpayer in reduction of tax liability to be a device irrespective of the legitimacy or genuineness. A person is certainly not obliged to arrange his affairs in such a manner that he pays maximum rate of tax.

We may also refer to the judgment of the Gujarat High Court in Banyan and Berry v. Commissioner of Income-tax [1996] 222 ITR 831 at 850 where referring to McDowell's case [1985] 154 ITR 148 (SC), the court observed:

"The court nowhere said that every action or inaction on the part of the taxpayer which results in reduction of tax liability to which he may be subjected in future, is to be viewed with suspicion and be treated as a device for avoidance of tax irrespective of legitimacy or genuineness of the act; an inference which unfortunately, in our opinion, the Tribunal apparently appears to have drawn from the enunciation made in McDowell's case [1958] 154 ITR 148 (SC). The ratio of any decision has to be understood in the context it has been made. The facts and circumstances which lead to McDowell's decision leave us in no doubt that the principle enunciated in the above case has not affected the freedom of the citizen to act in a manner according to his

> requirements, his wishes in the manner of doing any trade, activity or planning his affairs with circumspection, within the framework of law, unless the same fall in the category of colourable device which may properly be called a device or a dubious method or a subterfuge clothed with apparent dignity."

There is, therefore, no doubt, costing in a broader view should consider the scope for saving tax as for saving cost.

Accounting Standards having been made mandatory require the accounts not only to be transparent, but also understandable, a difficult exercise in view of all the complexities, which have been brought to bear on accrual system of accounting. The task of the tax executive is to interpret such accounts for tax purposes. On the same reasoning, it is the task of accountants including cost accountants to bear in mind costing principles and their impact on business.

Notes to the accounts, the qualifications, the responses and the explanations, which may be available in directors' report may well ensure fair treatment for the assessee and save him from allegation of non-disclosure of information.

(ii) Necessary precautions from tax angle

The law has many artificial disallowances. Cost accountants cannot totally neglect attention to them. While accrual system is mandatory, some of the expenses like taxes, welfare dues relating to labour and payment of interest to bank and financial institutions are allowed only on payment under section 43B of the Income-tax Act, so that liability of the taxpayer would depend upon the dates of payment. Due care to have it paid before the due date for filing return will reduce tax liability and even bring it in conformity with advance tax paid, so that interest for short-payment is also avoided. In such cases, section 43B, which is onerous in its effect itself becomes a tool for tax costing, since even payment of disputed and/or doubtful taxes like central excise or sales-tax, which can be got stayed by appropriate remedy, helps to reduce income-tax liability, while such disputed and untenable tax liability subsequently gets reduced enabling postponement of income-tax.

A disallowance under section 40A(3) of the Act of payments made by means other than account payee cheque or account payee bank draft is another avoidable tax cost. Ensuring that a single payment does not exceed Rs. 20,000 or where it exceeds, it is paid by an account payee cheque or an account payee draft makes all the difference to the tax liability, though it has no impact on assessee's income in commercial sense. Such artificiality in our law is required to be countered by matching care on the part of the taxpayer, as it is a no-win area, which can be won only by timely adherence to them. Constitutionality of the section has been upheld by the Supreme Court in Attar

Singh Gurmukh Singh v. ITO (1991) 191 ITR 667 (SC).

A still another area is the requirement that acceptance of loan or deposit as well as return of deposit (now loan too) of sums exceeding Rs. 20,000 by means other than account payee cheque or account payee draft under section 269SS and 269T at the cost of disallowance of payment along with penalty equal to the amount, if the requirement is neglected without reasonable cause. Constitutionality of section 269SS has been upheld by the Supreme Court in Asst. Director of Inspection (Investigation) v. Kumari A. B. Shanthi (2002) 255 ITR 258 (SC).

Payment of advance tax in time and filing of return in time are other no-win areas, which are certainly not unavoidable.

The mantle of the tax collector has fallen on every assessee making payments, which are prescribed for tax deduction and collection at source under Chapter XVII with consequences of interest and possible consequences of penalty placing a vicarious responsibility on the taxpayer, which can certainly be avoided with due care and better organisation. Even prosecution was possible till the Finance Minister decriminalised defaults under the statutes like income-tax or company law. While interest can be waived and penalty may be dropped, there is no scope for avoiding disallowance of payments without deduction of tax at source where required under section 40(a)(i)/(ia) of the Income-tax Act, even where the failure is a *bona fide* one. The rationale of such a harsh provision is difficult to understand. One can only wonder with Rutledge J in a US decision "for the law, as lawyers best know, is full of perplexities". The law can be less harsh and still achieve its purpose. But then the taxpayers have no choice except to adhere to such laws as long as they are part of the statute.

The following Ten Commandments to a lawyer by E.J. Couture, in La Abogacia translated and reproduced in American Bar Association Journal (Sept. 1958) should be equally applicable to all auditors. It reads as under:

1. *Study.*—Law is continually being transformed. If you do not follow its changes, you will be less of a lawyer every day.
2. *Think.*—Law is learned by study, but it is exercised by thought.
3. *Work.*—Law is arduous toil put in the service of justice.
4. *Fight.*—Your duty is to fight for the law; but in the day when you find the law in conflict with justice, fight for justice.
5. *Be Loyal.*—Be loyal to your client, whom you must never forsake until he proves to be unworthy of you. Be loyal to your adversary, even when he is disloyal to you. Be loyal to the judge who, not knowing all the facts, must rely on your word, and, as far as the law is concerned, at one time or another, he must have confidence that you trust him.

6. *Be Tolerant.*—Tolerate the truth of others as much as you would have others tolerate your own.
7. *Be Patient.*—Time will vindicate those things which are done with its collaboration.
8. *Have Faith.*—Have faith in the law as the best instrument for the co-existence of men; in justice as the normal destiny of the law; in peace as the generous entity of justice; and above all, have faith in freedom without which there is no law, no justice and no peace.
9. *Forget.*—Advocacy is a struggle of passions. If in each combat you would burden your soul with rancour, there will come the day when life will be impossible for you. The combat over, quickly forget your victory or your defeat.
10. *Love Your Profession.*—Seek to consider advocacy in such a way that the day when your son asks for advice as to his destiny, you will consider it an honour to propose that he become a lawyer.

A note explaining the case for a deduction or exemption attracts the attention of the Assessing Officer to the item. There may be a temptation to dispense with such note in the hope that the item may not be noticed by the Assessing Officer. The American Bar Association in its Ethical Standards for its members practising tax warns that likelihood of audit or detection is not determinative of the requirement of disclosure. The determination has to be on the basis, that the issue is in dispute for adjudication in court and not on the basis that the issue may not surface because of possible success in "audit lottery", i.e., not chosen for audit by IRS. This is a sound advice not only as a matter of ethics, but also on practical grounds.

Frederick Pollock has this to say in his Holmes-Pollock Letters published by Harvard University Press "I never heard of any authority for any such proposition as that one owes full disclosure of truth to all men at all times". *Suppressio veri suggestio falsi* may not always be a safe advice, since there is no half way truth, so that such exercise may not be worth the candle.

Romancing with facts may be an interesting past-time, but may be a dangerous game in the light of the serious consequences under the law.

The following steps including preliminary step of preparation of accounts and auditing have to be done within a rigid time schedule. Organising internal audit or contemporary checks for clients will solve many problems.

New tides may bring in new conditions and more rigid compliance rules. Arnold Bennet, an eminent novelist in his "Thoughts on the Business and Life" wrote as under:

> "We shall never have more time. We have, and have always had, all the time there is. No object is served in waiting until next week or even until tomorrow. Keep going day in and out.

> Concentrate on something useful. Having decided to achieve a task, achieve it at all costs."
>
> Non-compliance in no-win areas is worse than non-attendance to one's avocation.

Every professional has to bear in mind, that technology is fast evolving and has assumed great importance. The Information Technology (IT) industry equals 6.6% of the country's GDP, directly employs over 4.1 million people and earns in excess of $130 billion in foreign exchange with $180 billion in overall revenue. Thus, the IT industry is playing a very significant and crucial role in bringing to friction the Government's dream of a 5 $ trillion economy.

As was observed recently, intellectual property has become a major factor which cannot be overlooked. Unless a professional has enough knowledge of programming for a computer, he may fall behind his competitors, because robotics has made many routine work the task of robots, while professional is more expected to frame computer programmes for ease of business, so that auditors can avail what are described as shrink-wrap software available off-the-shelf in respect of which both programmers and users. The use of them may be advisable for the auditors, if they do not have necessary expertise to prepare a software themselves, to engage a professional for the purpose, because the non-use of technology will place much heavier burden and also will be a disadvantage, if one is not familiar with the latest technology in the competitive world in which we are living.

Richard Nixon used to advise his colleagues in his Government, that preparation is important not only in business but in every other kind of activity. Preparation for at least two hours for a meeting expected to end within an hour was his advice. Academic achievement is no qualification enough for successful management including tax management. It is the formal and informal management education and the experience which one gets, which is important as pointed out by J Livingston in his Book "Myth of the Well-educated Manager". Education is not all found in books. While educating the client is the duty of an auditor, it is much more important that the tax auditors educate themselves. A physician who cannot heal himself can hardly cure others. Ignorance on the part of tax auditors is inexcusable. It has been said "lawyers are the only persons in whom ignorance of law is not punished". This is not quite correct, because they are bound to lose their briefs sooner or later, where they continue to be ignorant. They should update their knowledge by subscribing to journals and participating in workshops and seminars. This applies to auditors too.

ANNEXURE

ICDS Annexure-1: *Notification dated 31st March, 2015 by Government of India Ministry of Finance (Department of Revenue) (Central Board of Direct Taxes)[Link: https://www.incometaxindia.gov.in/communications/notification/notification33_2015.pdf]*

ICDS Annexure-2: *Circular No. 10 of 2017F. No.133/23/2016-TPL, Government of India Ministry of Finance, Department of Revenue Central Board of Direct Taxes (TPL Division) Dated: 23rd March, 2017, Subject: Clarifications on Income Computation and Disclosure Standards (ICDS) notified under section 145(2) of the Income-tax Act, 1961*

A STUDY ON THE IMPACT OF CORPORATE GOVERNANCE ON FIRM VALUATION

Subir Sen

Abstract:

Existing literature on corporate governance is of the opinion that poor governance invariably destroys value; however, evidences on the impact of good governance on value creation remains inconclusive. Does the market then reward firms that practices good corporate governance? In this paper, we analyze firms comprising Nifty-50 over a 10 year time-frame from (2005–2015) to provide insights in the Indian context. While, the basic parameters of governance were not found to have any significant impact on performance, the advanced ones had tested positive. This confirms that there is a threshold level beyond which a firm's value increases with an increase in governance score. Further, it was also revealed that the threshold level itself rises over time as corporate climate matures.

Key Words:

Corporate Governance, Risk Metrics, Valuation, Firm Performance, Credit Score

Introduction

According to Cadbury (2002), corporate governance (CG) is defined as a set of systems by which businesses are directed and controlled. In other words, corporate governance is a general set of customs, regulations, habits, and laws that determine how a firm should be run. In a broader sense, corporate governance is maximizing the shareholder value of a firm while ensuring fairness to all stakeholders, including customers, employees, investors, vendors, the government and the society at large. Corporate governance is all about transparency and raising the trust and confidence of stakeholders that a firm is in safe hands. It is also about owners and the top managers operating as trustees on behalf of every shareholder - big or small. Though what is good corporate governance has neither been defined nor explained, factors related to BoD like size, composition, autonomy (including CEO duality), ownership pattern, autonomy of auditors, executive remuneration and compensation structure is a partial list of close proxies (Fama, 1983).

Firm valuation is a set of procedures or techniques used to estimate the economic value of an owner's interest in a business and the price they are willing to receive to effect its sale (Fama and Jensen, 1983). If CG mechanisms do not exist or do not function properly, shareholders and lenders would not buy their equity for lack of trust or invest in such firms. Thus, businesses would be forced to rely entirely on their internally generated cash flows and accumulated financial resources to fund ongoing operations as well as profitable investment opportunities. Therefore, the overall firm performance would likely suffer because many attractive opportunities would be missed and financial distress is likely to follow. On the contrary, CG mechanisms (internal and external) assure investors in firms that they will receive commensurate returns on their investments as reflected through its valuations (Shleifer and Vishny, 1997). Keeping this context in mind, the paper attempts to explore the following research questions –

a) Are well governed firms better valued than poorly governed ones?
b) Is there a threshold level above which good governance effects firm valuation?
c) Does the threshold level above which governance has a positive impact on firm valuation change over time?

Literature Review

The roots of CG and valuation can be traced to the ‘Agency Theory’ (Fama and Jensen, 1983; Shleifer and Vishny, 1997; Hillman and Dalziell, 2003; Nicholson and Kiel, 2007). The theory presumes significant misalignment of goals between owners and top managers; especially in large publicly listed firms. This supposition is due to contrasting risk appetites and/or fiduciary relationship leading to 'agency costs'. Ashbaugh et al. (2005), Bhoraj and Sengupta (2003), Anderson et al (2004) and Klock et al. (2005) opine that poorly governed firms can earn the wrath of the lenders (among other stakeholders) in the form of higher financing costs, and thus lowering valuations . On the contrary, good CG has the potential to increase firm value (Jensen and Meckling, 1976; Gompers et al. 2003; Brown and Caylor 2006a; 2006b; Dittmar and Mahrt-Smith 2007). International investors regard CG as an important criterion in their investment decisions. According to Global Investor Opinion Survey (McKinsey, 2002), 15% of US Institutional investors consider CG to be more important than financial issues such as profit performance or even growth. Further, 22% of European institutional investors are willing to pay a premium of 19% for a well-governed firm. Thus, extant literature provides ample empirical evidence on the relationship between CG and firm valuations.

Research Gaps

Though there are several studies conducted on GG and valuations, but they have primarily focused on firms in developed countries (Singhal, 2014). There is very little focus on this linkage in emerging markets like India and results at best remains inconclusive (Suresh, 2012). These findings are significant in at least three ways. First, they suggest that investors are actually using information available from firms on their CG practices to facilitate differentiation. This would imply that firms had an interest in improving their governance practices as well as in publicizing the measures that they take since this would contribute to an improvement in their valuations. Second, the existence of a threshold effect indicates that only those firms that are above a certain threshold of governance levels receive the premium which provides a rough benchmark for the mandatory disclosure requirements that the regulator sets. It is presumed that the governance levels prescribed under the requisite laws is the basic minimum requirement all firms are expected to fulfill. Thus, meeting the basic prerequisites in CG does not result in any premium on firm valuation. Third, the Indian market, like most emerging markets, is a mix of domestic and foreign investors. To the extent that global investors put a premium on the governance of the firms they invest in, their strategies may have some positive spillover effects on domestic investors who may be trying to replicate them. In an era of globalization, this is inevitable. Thus, all the aforementioned perspectives require further introspection.

Corporate Governance in India

Corporate governance initiatives in India formally began in 1998 with the '*Desirable Code of Corporate Governance*', a voluntary code published by the Confederation of Indian Industry (CII). In February 2000, the Securities and Exchange Board of India (SEBI) established the first formal regulatory framework for listed companies on corporate governance (Clause 49 of the Listing Agreements) based on the recommendations of the Kumar Mangalam Birla Committee Report, 1999. In October 2004, these were revised following the recommendations of the Narayana Murthy Committee Report, 2003. More recently, in December 2009, the Ministry of Corporate Affairs, Government of India (GoI) put forward a set of guidelines on corporate governance for voluntary adoption by companies in India, based on the revised Companies Act, 2013. One of the significant developments in the field of corporate governance in India was Clause 49 of the Listing Agreement which was derived mainly from the S&O Act of 2002 in US and calls for stringent penalties, including delisting for non-compliance. The major issues and challenges facing CG in India is highlighted below –

a) The appointment non-executive directors' is supposed to be the biggest corporate governance reform. However, down the line, non-executive directors have hardly been able to make the desired impact as most Indian promoters design a tick-the-box way out of the regulatory requirements. The independence of such promoter nominated non-executive directors is questionable, as it is unlikely that they will stand-up for minority interests against the promoter.
b) The law requires a healthy mix of executive and non-executive directors and appointment of at least one woman director for diversity. There is no doubt that a capable, diverse and active board would, to large extent, improve governance standards of a company. The challenge lies in ingraining governance in corporate cultures so that there is improving compliance 'in spirit' too.
c) In January 2017, SEBI released a 'Guidance Note on Board Evaluation'. This note elaborated on different aspects of performance evaluation by laying down the means to identify objectives, different criteria and method of evaluation. For performance evaluation to achieve the desired results on governance practices there is often a call for results of such evaluation be made public.
d) While non-executive directors have been generally criticized for playing a passive role on the board, instances of them not siding with the promoters have not been taken well. As a result, they were often unceremoniously removed. Under law, a non-executive director can be easily removed by promoters or majority shareholders. This inherent conflict has a direct bearing on their independence.
e) Empowerment of non-executive directors has to be supplemented with greater duties for and accountability of directors. In this regard, Indian Companies Act, 2013 mandates that directors owe

duties not only towards the company and shareholders but also towards the employees, community and for the protection of environment. Although these general duties have been imposed on all directors, non-executive directors have been complacent due to lack of enforcement possibilities.

f) Executive compensation is a contentious issue especially when subject to shareholder accountability. Companies have to offer competitive compensation to attract talent. However, such executive compensation needs to stand the test of stakeholders scrutiny. Presently, under Indian law, the nomination and remuneration committee (a committee of the board comprising of a majority of non-executive directors) is required to frame a policy on remuneration of key employees. Also, the remuneration paid to key executives is required to be made public. Is this enough?

g) In India, promoters ability to control the affairs of the company has the potential of derailing the entire corporate governance system. Unlike developed countries, in India, identity of the founder and the company is often merged. The founders, irrespective of their legal position, continue to exercise significant influence over key business decisions of companies and fail to acknowledge the need for succession planning. Family owned companies suffer an inherent inhibition to let go of control.

h) Today, large businesses are exposed to real-time monitoring by media and the internet. Given that the board is only playing an oversight role on the affairs of a company, framing and implementing an appropriate risk management policy is necessary. In this context, Indian company law requires the board to include a statement in its report to the shareholders indicating the status of the risk management policy for the company, vetted by the non-executive directors.

i) As a key aspect of risk management, privacy and data protection is an important governance issue. In this era of digitalization, a sound understanding of the fundamentals of cyber security must be expected from every director. Good governance will only be achieved if top managers are able to engage and understand the risk policy of the company. The board must also assess the potential risk of handling data and take steps to ensure such data is protected from potential misuse or fraud.

j) India is one of the few countries which have legislated on CSR. Company's meeting specified thresholds are required to constitute a CSR committee from within the board. This committee then frames a CSR policy and recommends spending on CSR activities based on such policy. Companies are required to spend at least 2% of the average net profits of last three financial years. For companies who fail to meet the CSR spend, the boards is required to disclose reasons for such failure in its report.

Theory Development

In India, promoter's ability to control the affairs of a firm has the potential of derailing the entire CG mechanism. Unlike developed countries, in India, identity of the founder or promoter and the firm is often merged. The founders, irrespective of their legal position, continue to exercise significant influence over key business decisions of companies and fail to acknowledge the need for succession planning. Family owned firms therefore, suffer an inherent inhibition to let go of control. Such firms often face bankruptcy as a result of their inability to raise finance and manage the complexities of a business in a globally competitive business environment (Gilson, 1990; Hambrick & D'Aveni, 1988, 1992; Gales & Kesner, 1994; Daily & Dalton, 1994). Outcome of these studies justifies that CG considerably strengthens the financial prowess of a firm. Hence it is proposed that:

H1: Better governed firms will significantly outperform poorly governed ones.

The appointment non-executive directors' is supposed to be the biggest corporate governance reform. However, down the line, non-executive directors have hardly been able to make the desired impact as most Indian promoters design a tick-the-box way out of the regulatory requirements. The independence of such promoter nominated non-executive directors is questionable, as it is unlikely that they will stand-up for minority interests against the promoter. The law also requires a healthy mix of executive and non-executive directors and the appointment of at least one woman director for diversity. There is no doubt that a capable, diverse and active board would, to large extent, improve governance standards of a firm. The challenge lies in ingraining governance in corporate cultures so that there is improving compliance 'in spirit' too. While non-executive directors have been generally criticized for playing a passive role on the board, instances of them not siding with the promoters have not been taken well. As a result, they are often unceremoniously removed. Under law, a non-executive director can be easily removed by promoters or majority shareholders. This inherent conflict has a direct bearing on their independence. Thus if a firm implements only the CG measures guaranteed under the requisite laws, and does not go beyond in embedding CG best practices from India and abroad, it is unlikely to have any bearing on performance. Hence it is proposed that:

H2: Basic measures of corporate governance have an insignificant impact on firm performance.

Empowerment of non-executive directors has to be supplemented with greater duties for and accountability of directors. In this regard, Indian Companies Act, 2013 mandates that directors owe duties not only towards the company and shareholders but also towards the employees, community and for the protection of environment. Although these general duties have been imposed on all directors, non-executive directors have been complacent due to lack of enforcement possibilities. Executive compensation is a contentious issue especially when subject to shareholder accountability. Companies have to offer competitive compensation to attract talent. However, such executive compensation needs to stand the test of stakeholder's scrutiny. Presently, under Indian law, the nomination and remuneration committee (a committee of the board comprising of a majority of non-executive directors) is required to frame a policy on remuneration of key employees. Also, the remuneration paid to key executives is required to be made public. Further, large businesses are exposed to real-time monitoring by media and the internet. Given that the board is only playing an oversight role on the affairs of a company, framing and implementing an appropriate risk management policy is necessary.

In this context, Indian company law requires the board to include a statement in its report to the shareholders indicating the status of the risk management policy for the company, vetted by the non-executive directors. As a key aspect of risk management, privacy and data protection is an important governance issue. In this era of digitalization, a sound understanding of the fundamentals of cyber security must be expected from every director. Good governance will only be achieved if top managers are able to engage and understand the risk policy of the company. The board must also assess the potential risk of handling data and take steps to ensure such data is protected from potential misuse or fraud. India is one of the few countries which have legislated on CSR. Company's meeting specified thresholds are required to constitute a CSR committee from within the board. This committee then frames a CSR policy and recommends spending on CSR activities based on such policy. Companies are required to spend at least 2% of the average net profits of last three financial years. For companies who fail to meet the CSR spend, the boards is required to disclose reasons for such failure in its report. In January 2017, SEBI released a '*Guidance Note on Board Evaluation*'. This note elaborated on different aspects of performance evaluation by laying down the means to identify objectives, different criteria and method of evaluation. For performance evaluation to achieve the desired results on CG practices there is often a call for results of such evaluation be made public. Firms which successfully acknowledges these CG best practices and also implements them will receive higher valuations. Hence it is proposed that:

H3: Advanced measures of corporate governance will have a positive impact on firm performance.

H4: The threshold level above which corporate governance have a positive impact on firm performance will itself rise over time.

Methodology

The guidelines on CG issued by SEBI (1999) made it mandatory for all listed firms in India to adopt them in a phased manner. The BSE-100, NSE-50 companies and the Category-A firms had to adhere to the guidelines by March 31, 2001. This classification virtually covers all Bombay Stock Exchange (BSE)-30 firms of SENSEX. Our sample frame comprised of 50 firms of National Stock Exchange (NSE) that comprises Nifty (which is an adequate representative sample as it represents over 87% of the market capitalization in India as on 1st April, 2005). In all, data for 10 financial years, from FY 2004-2005 to FY 2014-2015 was included in the analysis. The data sources were primarily from CMIE Prowess, and also included data from the Annual Reports of the firms, and the reports filed at NSE as a part of their listing requirements. From the 50 firms selected above, those firms which were not listed for the entire duration of 10 years under consideration were excluded. We also deleted firms for which we could not obtain a full set of variables described below. After adjusting for above, our final sample comprised of 42 firms. The ten-year window allowed for considerable variation in firm-level CG factors. This is important given typically slow changes in these factors over time is much needed in panel regression analysis. The total number of firm-year observations was 6280. Panel data model allows the researcher to capture both, the time-series and the cross-sectional relations (Green, 1997). This study also carried out ANOVA to analyze performance variation across firms having differences in CG levels to analyze the differences among group means in a sample. It is based on the law of total variance, where the observed variance in a particular variable is partitioned into components attributable to different sources of variation. The study also carried out panel regression analysis for studying impact of CG impact on valuations, using SPSS (version 18.0).

Findings & Analysis

Instead of relying on individual parameters of governance like board size, board independence, CEO duality, insider and block holdings, etc available in CMIE and stock exchange listing data we relied on the CG score obtained from the '*S&P ESG India Index*' as a reliable proxy for firm-level governance quality in India (see Table-I). The table below reflects the descriptive statistics of the 6280 observations used in the study in terms of central tendency, variations, and extent of tall or flat structural distribution. It also provides the CG scores (average, lowest and highest) at different percentile levels of the sample set.

Table-I: Descriptive Statistics of CG score					
Percentile	**CG Index Score**			**Tests**	**Score**
	Average	**Highest**	**Lowest**		
99%	82.48	89.42	77.55	Observations	6280
95%	79.62	85.97	76.30	Mean	56.24
90%	74.31	76.81	70.32	SD	7.38
75%	68.56	72.14	64.78	Skewness	0.47
50%	55.79	60.18	51.44	Kurtosis	6.58
25%	40.91	47.72	36.83		
10%	34.95	41.84	30.68		
5%	26.36	33.25	22.42		

The firms were then segregated into two watertight compartments based on deviations around their mean CG score (i.e. 50%) and their performance based on financial indicators as measured by P/E and Tobin's Q was analyzed. Outliers were suitably deleted lying outside ± 3 standard deviations range. It was reported that well governed companies significantly outperformed the poorer ones on various counts and was also found to be significant at the 95% significant level as measured by ANOVA (see Table-II). This finds support for our Hypothesis 1.

Table-II: Results of one-way ANOVA using EPS (adjusted) as performance variable					
Time	**Sum of squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	91.467	2	45.733	4.467	0.021
Within Groups	276.400	6278	10.237		
Total	367.867	6280			

We also tried to find the impact of the critical parameters enlisted in '*S&P ESG India Index*' on valuations (measured in terms of P/E multiple) and Tobin's Q. Further, firm size, leverage, systematic risk, age, ownership type, industry affiliation, and business diversity (SIC) was controlled for. While, the basic parameters of CG were not found to have any significant impact on valuations, the advanced ones had tested positive (see Table-III). Table III reports results of full panel regression analysis for the entire time period under study (i.e. 2005-15), while Tables IIIA, IIIB, IIIC respectively reports results of partial panel regression analysis for the years separately (i.e. 2005-08, 2009-12, 2013-16). Overall parameters of CG was found to have an insignificant impact on performance (as measured by P/E) in all the models under our study. The results of the same on Tobin's Q was also similar. This finds support for our Hypothesis 2.

Table-III: Overall results of panel regression (2005 – 15) with composite Index					
P/E =	**Constant = 8.12**	**+0.08 * CG score**	**-0.24 * ln sales**	**-0.18 * ln age**	**-0.07 * leverage**
t-stat	(4.32)	(7.28)**	(-1.36)*	(-3.65)*	(-1.21)**
F-Statistic = 5.40 (Significant at 5% level)					

Table-IIIA: Partial results of panel regression (2005 – 08) with composite Index					
P/E =	**Constant = 3.15**	**+0.03 * CG score**	**-0.12 * ln sales**	**-0.07 * ln age**	**0.12 * leverage**
t-stat	(1.18)	(4.65)*	(-1.79)**	(-2.14)**	(1.69)
F-Statistic = 3.68 (Significant at 10% level)					

Table-IIIB: Partial results of panel regression (2009 – 12) with composite Index					
P/E =	**Constant = 5.74**	**+0.05 * CG score**	**-0.17 * ln sales**	**-0.10 * ln age**	**0.16 * leverage**
t-stat	(2.78)	(5.12)*	(-1.14)	(-1.98)*	(3.16)**
F-Statistic = 4.28 (Significant at 10% level)					

Table-IIIC: Partial results of panel regression (2013 – 16) with composite Index					
P/E =	**Constant = 8.58**	**+0.12 * CG score**	**-0.22 * ln sales**	**-0.16 * ln age**	**-0.10 * leverage**
t-stat	(4.92)	(7.40)**	(-2.65)	(-3.11)*	(2.36)
F-Statistic = 5.12 (Significant at 5% level)					

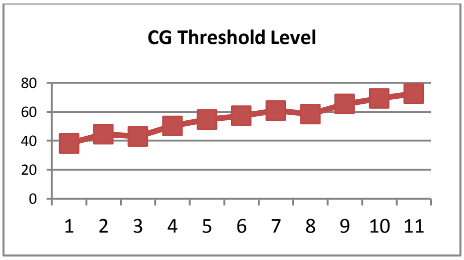
We also modeled panel regression data with 'basic' and 'advanced' measures of CG separately as categorized in '*S&P ESG India Index*'. While 'basic' measures of CG continued to have an insignificant impact on valuations as reflected by its beta coefficient, 'advanced' of CG was observed to have a significant positive impact (see Table IV). In line with extant literature size as measured through natural logarithmic value of sales, age and leverage indicated a negative impact on performance as reflected by their beta coefficients. This finds support for our Hypothesis 3.

Table-IV: Overall results of panel regression (2005 – 15) with segregated Index						
P/E =	**Constant =**	**+0.01 ***	**+3.14 * CG**	**-0.19 * ln**	**-0.21 * ln**	**-0.08 ***

	10.02	CG score (Basic)	score (Adv)	sales	age	leverage
t-stat	(5.36)	(6.12)*	(7.85)***	(-1.78)*	(-3.14)*	(-1.78)
F-Statistic = 6.88 (Significant at 1% level)						

Our findings also confirms that there is a threshold level beyond which a firm's value increases with an increase in governance score. This also suggests that investors assign a premium on a firm's stock prices only when the CG score actually crosses a threshold. Further, with increased levels of CG across sectors due to globalization and adoption of best practices worldwide, the threshold level was also found to increase rise over time (see graphical representation V). The threshold level was assessed using year-wise constant values (k) expressed as a (%) and arrived through line of best fit on y-axis and a time line from (2005-15) on x-axis. This finds support for our Hypothesis 4.

Graph - V



Conclusion

It is highlighted that better governed firms significantly outperform poorly governed ones in India as reflected in their performance variations during the period of our study (2005-15). The countermanding logic is that stakeholders would be less than willing to commit their resources in a firm where the Corporate Governance (CG) mechanisms cannot be relied or trusted upon. It would dispose the firm primarily with only internally generated funds or surplus putting it at a competitive disadvantage *vis-a-vis* better governed firms which would not only have access to a larger pool of external resources, but also at a lesser cost. This in general, has put a pressure to all firms to step up their CG initiatives as a basic sustainability issue. This finds clear evidence from the steady rise in the threshold level of CG during the entire period in our study. Further, given that there has been a steady rise in FII investments in India during the period under our study, firms now need to benchmark their CG best practices with firms worldwide to receive a premium on their valuation. Implementing basic CG factors required under the law has now become a hygiene factor and does not result in any significant impact on performance. Our partial and full regression analysis based on panel data lends credence to the above. The paper thus concludes that CG is as important as any other firm variable and has the potential to significantly impact firm performance (including valuation).

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CONSUMER MOTIVATION FOR ORGANIC PRODUCT CONSUMPTION WITH SPECIAL REFERENCE TO WEST BENGAL

Indrani Dasgupta

Abstract:

Indian consumers are living in a dynamic world these days. They are continuously facing array of new products and services, including food products. Organic food is one such new phenomenon that is widely talked about but rarely understood. However, compared to the European level, the consumption of organic food products is quite low in India. The market for organic food is extremely nascent in India, with very few active brands and low penetration even among urban consumers.

In India, of the total 180 million hectares of total agricultural land, land under certified organic production is a negligible 0.0015 per cent. In comparison, organic farmland in the European Union (EU) constitutes 5.7 per cent of the total agricultural land. Growth of organic agricultural land in EU, however, has been substantial over the last decade, having increased by approximately 60 per cent since 2005.

Gracia and Magistris (2008) professed that "the future of organic agriculture will depend, to a large extent, on consumer demand." On this context, this paper tries to investigate the perception and attitudes of the organic food consumers from West Bengal. In order to provide information related to consumer motivation in purchasing organic products, 50 respondents were interviewed using face-to-face approach by adopting a survey. Perception, knowledge and behaviour of the consumers (respondents) towards organic foods are studied and the results are presented in this paper.

Key Words:

Organic Food, Organic Farming, Consumers' Behavior, Consumers' Attitudes

Section One: Introduction

The practice of organic farming has been prevalent from time agriculture was first conceived. It was with the advent of the 'green revolution' that the natural way of growing crops started becoming unpopular and economically less feasible. Intervention of machinery, scientific methods, weather predictions etc. revolutionised the field of agriculture, while variety of chemical fertilizers and pesticides increased the yield without any concern of environmental measures, striving economic benefits. More crop yield meant higher profits to the farmer and better utilization of the land. Today it is a common practice for farmers to liberally make use of pesticide spray or fertilizers in order to improve the crop yields. However, a group of people, who felt strongly about the long-term effects of these chemically enabled products, started to grow and lead to what is called organic food. Interest in organic foods steadily increased throughout the world because of concerns about intensive agricultural practices and their potential effect on human health and environment (Roitner-Schobesberger et. al., 2008).

Organic farming (alternative farming) is a viable alternative to conventional agriculture and contributes to sustainable development in terms of food safety and quality, environment and animal welfare. Although the organic food industry has experienced astonishing growth in the past few years, still, the total percentage of agricultural land in the world that is certified as organic, remains around 57.8 million hectares in 2016. However, this is more than 5 times the area covered under organic agriculture in 1999 recorded at 11 million hectares (Lernoud and Willer, 2016). Thus, indicating a steady growth. A large proportion (approximately 90 per cent) of the global organic food and drink sales take place in the developed countries of North America and the European Union (EU). There is a huge growth potential in developing countries too, to increase organic production, owing to the largely prevalent traditional farming techniques which are in accord with organic agricultural practices. Strong institutional support is required to further push the organic industry from a small niche market into a mainstream agricultural industry.

In India, habit, population growth and some other reasons may have stimulated the use of unsustainable option. Here the production as well as the market for organic food, is still at an extremely nascent stage. In India, of the total 143 million hectares of agricultural land, only 5.2 million hectares of land is under organic certification. But however, India too has high potential for organic (sustainable) production. The growth of the domestic market has been slow and is facing challenges that include lack of awareness and demand among consumers, export-oriented government policies, higher prices of organic products in the world market (Osswald and Menon, 2013), and significant price differences by the retailers, as the organic retailers are not organised (Nandi et al., 2016b). Despite these challenges, the past decade has witnessed an increase in domestic organic sales, mainly in the urban centers of India such as in Mumbai, Bangalore, Delhi, Chennai, and Hyderabad (Osswald and Menon, 2013). Industry experts estimate that organic food retailing might grow at 25 percent to 100 percent in the urban centers (Osswald and Menon, 2013) and that the recent trends, such as online shopping and community-supported agriculture, are also adding to this growth.

Gracia and Magistris (2008) declared that *"the future of organic agriculture will depend, to a large extent, on consumer demand"* (Aygen, 2012). So, it is vital to determine the knowledge, habits and psychology of consumers regarding organic foods. Since organic production and organic products are gaining popularity in recent years, this study aims to address the knowledge of consumers about organic products and reasons why the consumers purchase or do not purchase organic products in West Bengal, India. The remaining paper is organized into three sections. Subsequent to this section (*Section One*) which gives a formal introduction to the research issue; *Section Two* gives a clear idea of what we mean by organic products. The section also provides a snapshot of the scenario of organic production world over with special reference to West Bengal. In doing so, the section reviews the relevant literatures on the issue and thereby brings out the research gap. The data base and the data collection technique form a part of *Section Three*. In this section an empirical study of the data collected is made to draw out the factors responsible in motivating the respondents in consuming organic products or in contrary, the factors abstaining them from consuming organic products. *Section Four* translates observations and draws out conclusions.

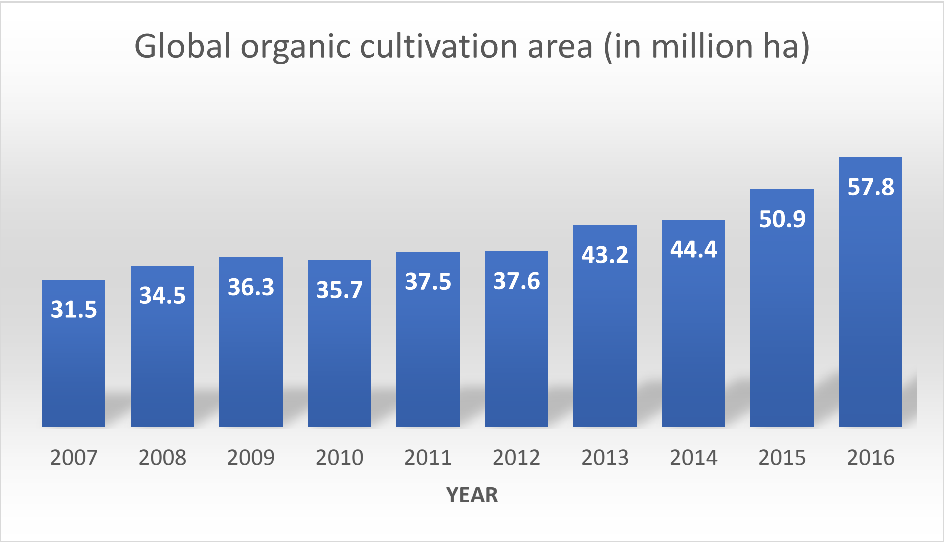
Section Two: A Snapshot of the Scenario of Organic Production

According to USDA National Organic Program (NOP) "Organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Organic meat, poultry, eggs, and dairy products come from animals that are given no antibiotics or growth hormones. Organic food is produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation. Before a product can be labeled "organic," a government-approved certifier inspects the farm where the food is grown to make sure the farmer is following all the rules necessary to meet USDA organic standards. Companies that handle or process organic food before it gets to your local supermarket or restaurant must be certified too." (What does organic mean? 2016).

- ***World Scenario***

According to the latest FIBL-IFOAM survey, approximately 57.8 million ha of land in the world was organically managed in the year 2016, including the area in conversion, surging from 31.5 million ha in 2007 (Figure 1). This indicates a considerable rise in the area undergoing organic management on the globe. During this year, continent-wise, Oceania had the highest organic area with 27.3 million ha (almost half of world's organic agriculture land) followed by Europe with 13.5 million ha (23 percent), Latin America with 7.1 million ha (7 percent), Asia with 4.9 million ha (9 percent), North America with 3.1 million ha (6 percent) and Africa with 1.8 million ha (3 percent). However, combined with wild harvest area, Europe tops the list with 30.4 million ha, followed by Oceania with 22.8 million ha and Africa with 13.6 million ha.

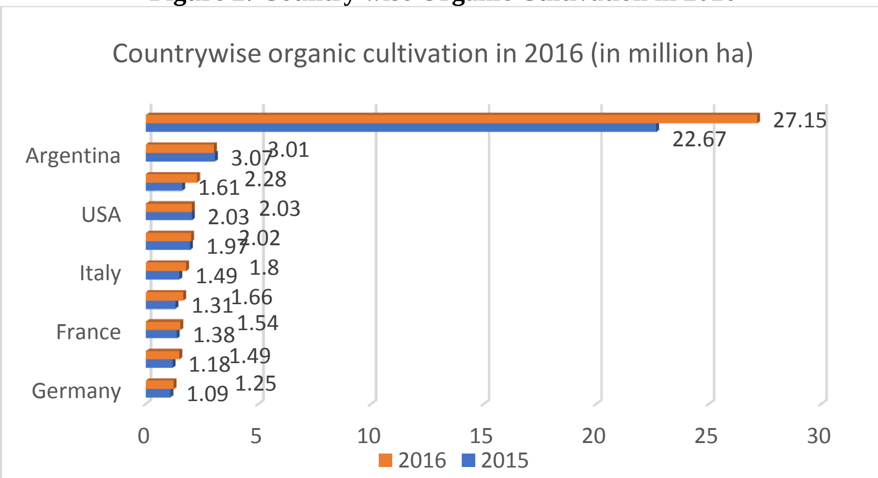
Figure 1: Global Organic Cultivation Area



Source: The World of Organic Agriculture Statistics and Emerging Trend 2018, FiBL and IFOAM – Organics International

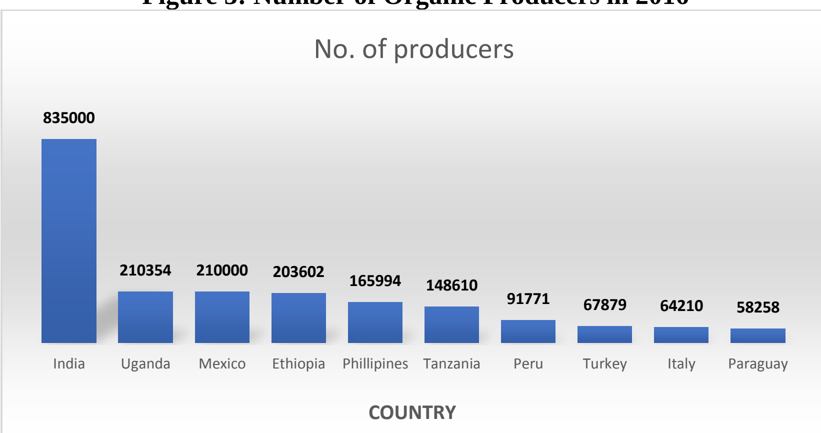
As reported by FIBL and IFOAM, in 2016 the top three countries in organic cultivation were Australia with 27.1 million ha followed by Argentina with 3.0 million ha and China with 2.3 million ha. **India ranks ninth in this regard**. (Figure 2)

Figure 2: Country wise Organic Cultivation in 2016



As reported in 2016, there were more than 2.7 million organic producers globally, with **India having the maximum share** (835,00 farmers), followed by Uganda (210,352 farmers) and Mexico (210,000 farmers) (Figure 3). More than 84 percent of the producers were in Asia, Africa, and Latin America.

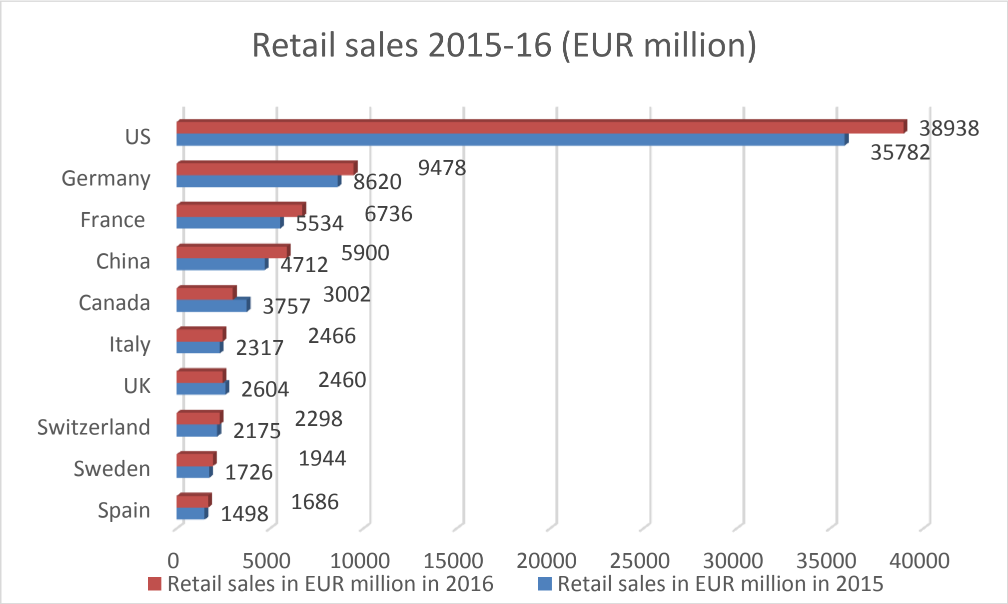
Figure 3: Number of Organic Producers in 2016



Source: The World of Organic Agriculture Statistics and Emerging Trend 2018, FiBL and IFOAM – Organics International

In 2016 the countries with the maximum organic market was the United States (38.9 billlion euros), followed by Germany (9.7 billion euros), and France (6.7 billion euros). Globally, organic farming is practiced in 178 countries, but the largest single market was the US (47 percent) followed by the European Union (EUR 30.7 billion, 37 percent) and China (EUR 5.9 billion, 6 percent) (Figure 4). The highest growth (22 percent) was registered in France and Ireland followed by Denmark and Norway with 20 percent growth.

Figure 4: Retail Sales 2015-16



- ***Indian scenario***

Organic farming is being practiced in India since thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world, till the British ruled it. In traditional India, the entire agriculture was practiced using organic techniques, where the fertilizers, pesticides, etc., were obtained from plant and animal products. Organic farming was the backbone of the Indian economy.

During 1950s and 1960s, the ever-increasing population of India and several natural calamities led to a severe food scarcity in India. As a result, the government was forced to import food grains from foreign countries. To increase food security, the government had to increase the production of food in India. The '*green revolution*'[1] became the government's most important programme in the 1960s. Large amount of land was brought under cultivation. Hybrid seeds were introduced. Natural and organic fertilizers were replaced by chemical fertilizers and locally made pesticides were replaced by chemical pesticides. As time went by, extensive dependence on chemical farming started showing its darker side. Farmers and consumers in India gradually started shifting back to organic farming considering it healthier. Many farmers in India shifted to organic farming due to the domestic and international demand for organic food. Further stringent standards for non-organic food in European and US markets led to the rejection of many Indian food consignments in the past. Organic farming, therefore, became an alternative to chemical farming.

Over the past several years, the organic food industry in India has been experiencing an annual growth between 20-22 percent.[2] Ranking ninth as to organic cultivation area and with the highest number of producers, India has the potential to be the largest organic food producer. But however, the market for organic food in India is still far below the leading countries like the US, Germany, France etc. The total market size for organic packaged food in India in 2016 was EUR 6.60 million (INR533 million) as compared to EUR 38938 million in the US.

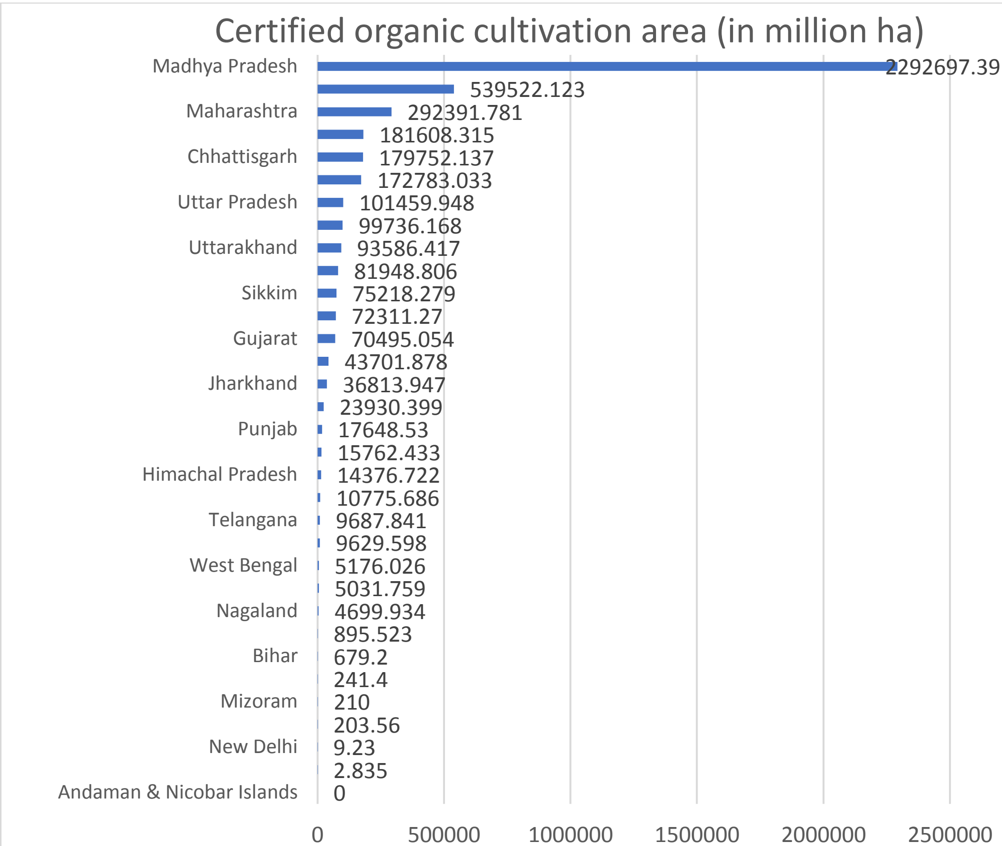
Organic food exports from India started increasing with more farmers shifting to organic farming. With low domestic consumption, the prime market for Indian organic food industry are the US and Europe. India has now become a leading supplier of organic herbs, organic spices, organic basmati rice, etc. The exports amount to 53 percent of the organic food produced in India. The future of organic agriculture to a large extent, depend to a large extent on the attitude and motivational factors of the consumers towards organic food products.

In India, Madhya Pradesh has the highest organic cultivation area, followed by Rajasthan and Maharashtra. West Bengal lies far below (Figure 5). With high growth potential, probably the lack of awareness, high price, greater population and other reasons have kept West Bengal at an insignificant position with respect to organic produce and market. And it is this issue that this paper delves to investigate.

[1] The Green Revolution, or Third Agricultural Revolution, is a set of research and technology transfer initiatives occurring between 1950 and the late 1960s that increased agricultural production worldwide, particularly in the developing world, beginning most markedly in the late 1960s. It begun in India in 1961 under the leadership of M. S. Swaminathan.

[2] It is expected to reach INR871 million by 2021

Figure 5: State wise Certified Organic Cultivation Area in India (2016)



- ***Literature review***

Several studies have been undertaken to examine issue in the area of consumers' behaviour and consumers' attitudes toward organic food (*Gracia and de Magistris, 2007; Grankvist and Biel, 2001; Zanoli and Nasppetti, 2002; Chen, 2007; Harper and Makatouni, 2002; Padel and Foster, 2005*). Various researchers have found out positive attitude towards organic food products in India (Grankvist and Biel, 2001; Gracia and de Magistris, 2007; Chen, 2007, and Ajzen, 1991; Pirjo Honkanen, Bas Verplanken and Svein Ottar Olsen, 2006). Grankvist and Biel (2001) pointed out that environmentalism and consumer attitudes have strong correlation.

Health consciousness play a vital role to shape consumer attitudes and behaviour (Magnusson et al, 2003). Aryal et al, 2009; Briz and Ward, 2009; Gil and Soler 2006; found that information about the organic food market is important because it positively influences consumers' attitudes towards organic food products. Budi Suprapto and Tony Wijaya (2012) has found that healthy consumption lifestyle is a good predictor for attitude toward organic food, meanwhile attitude toward organic food directly influence people's intention to purchase organic food. According to Jolly (1991) organic food buyers tend to be younger than non-buyers.

Lea and Worsley, (2005) detected an overall more positive attitude of women towards organic food as compared to men. People with higher education are more likely to express positive attitudes towards organic products and enquire more into the production and process methods of organics (Magnusson et al., 2001; Hill and Lynchehaum, 2002; Wier et al., 2003). Grunert and Kristensen, 1991 points out the fact that higher income households are more likely to form positive attitude towards organic food. Salvador V Garibay and Katke Jyoti (2003) found that in India, organic consumers primarily belong to the urban upper-middle class or upper class.

Such studies have benefitted the academia in formulating strategies to accelerate the consumption of organic production. However, such studies with special reference to West Bengal (being one of the states with high growth potential) is limited and needs to be addressed. This paper is a humble attempt to bridge this research gap.

Section Three: The Empirical Study

- **Method and material**

This study aims to understand the factors motivating the consumers of West Bengal in consuming organic products. On the contrary the study delves to bring out the issues responsible for the abstinence of the consumers from consuming organic products.

There are various factors that influence the consumers' preference towards organic products, depending on their perceptions, like, organic food products are healthy and safe, products are environment friendly, price of the products, trust in product certification and availability of the products etc. In relation to the state of West Bengal these factors were determined by implementing a Primary data collection technique.

Primary data was collected with the use of structured questionnaires and five-point Likert scale which ranged from strongly agree to strongly disagree. The study was conducted among 50 randomly selected consumers to identify the factors influencing their preferences towards organic food purchase and on the contrary factors abstaining them from consuming organic products. A face-to-face conversation over a questionnaire was conducted and information on demographics pattern of the respondents, organic food perceptions, awareness and knowledge about organic foods and the reasons prompting them to consume or not to consume organic products was obtained. The survey took place during December 2018 and January 2019.

The results of these interviews are presented and analysed in the following section to operationalize the research objective.

- **Result and discussion**

Demographical attributes of the respondents in the survey are given in Table 1 below:

TABLE 1: DEMOGRAPHICAL ATTRIBUTES OF THE RESPONDENTS

VARIABLES	CLASSIFICATION	NUMBER	PERCENTAGE	USER (NO.)	NON-USER (NO.)
AGE	20-40	20	40	15	5
	41-60	30	60	15	15
GENDER	M	17	34	12	5
	F	33	66	18	15
	O	0	0	0	0
EDUCATION	HIGH SCHOOL	0	0	0	0
	UNDERGRADUATE	0	0	0	0
	POSTGRADUATE	50	100	30	20
PLACE OF LIVING	URBAN	34	68	22	12
	SEMI URBAN	16	32	8	8
	RURAL	0	0	0	0
OCCUPATION	UNEMPLOYED	0	0	0	0
	EMPLOYED	45	90	25	20
	STUDENT	1	2	1	0
	RETIRED	0	0	0	0
	PART TIME	4	8	4	0
	OTHERS	0	0	0	0
FAMILY SIZE	1	0	0	0	0
	2	6	12	3	3
	3	26	52	13	13
	4	9	18	6	3
	>4	9	18	8	1
FAMILY INCOME	<2 LAC	1	2	1	0
	2LAC-<5 LAC	5	10	5	0
	5 LAC-<10 LAC	15	30	10	5
	10 LAC AND MORE	29	58	14	15

As observed from the Table 1, 40 percent of the respondents are between 20 years and 40 years of age and the remaining 60 percent are above 40 years of age and below 60 years. 34 percent of the respondents are males whereas majority (66 percent) are females. As the sample was randomly selected coincidentally all the 50 respondents have post graduate qualification. As regarding the place of stay a majority (68 percent) reside in the urban areas of West Bengal whereas 32 percent of the respondents are semi urban residents. None of them belong to the rural areas. A high majority (90 percent) of the respondents are employed. Only a meagre 2 percent and 8 percent are students and part time employees respectively. More than half of the respondents (52 percent) have small family set up with three members in the household. A rather small percentage (12 percent) of the respondents have only two members in their family. About 36 percent of the respondents have four or more members in their family. In today's context of nuclear families, this could be considered as a big family. While looking into the family income of the respondents, it can be observed that a majority (58 percent) of the respondents belong to a higher income group with annual income of Rs 10 lac or more. Followed by 30 percent in the income slab of Rs 5 lac and less than Rs 10 lac. 10 percent of them have annual income more than Rs 2 lac but less than Rs 5 lac. A meagre 2 percent of the respondents can be categorised as low earners with income below Rs 2 lac annually. Of the sampled respondents 30 (60 percent) are consumers of organic products and the remaining 40 percent do not consume organic products.

An equal number of respondents consuming organic products belong to both the categories of *age group*. It is also observed that most of the consumers of organic products are female (60 percent) whereas only 40 percent of the consumers are male.

As also observed from Table 1, a majority (73 percent) of the consumers *belong* to the urban areas of Bengal, 27 percent are from the semi-urban areas. None of the rural dwellers (among the respondents) consume organic products.

As regards to the *occupation* of the consumers, 83 percent (25 respondents) are employed, 13 percent of the consumers are engaged in part time employment and the rest 3 percent of the consumers are students.

While analyzing the *family size* of the consumers we observe (from Table 1) that 43 percent of the consumers have three members in their family, whereas about 65 percent of the non-consumers have a similar family size. 47 percent of the consumers have bigger families with four members or more. A meagre 10 percent of the consumers have small families with only two members.

While analyzing the *family income*, we observe that a majority (47 percent) of the consumers belong to high income group with an annual income of more than Rs 10 lac. Whereas 33 percent of the consumers have income of Rs 5 lac or more. 20 percent of the consumers have income below Rs 5 lac per annum.

The survey revealed that 40 percent of the respondents do not consume organic products. In order to gain an insight into the reason of abstinence, we put forward to these respondents some possible reasons on a Likert scale. The respondents were asked to rate the reason as 'Certainly Agree' (1 on Likert scale) to 'Certainly Disagree' (4 on Likert scale) and 'No Idea' (5 on the scale). The possible reasons put forward were:

A. Consider the issue of 'organic product' a myth
B. Not ready to pay high price for organic products
C. Organic products are not widely available in the markets
D. There is less promotion/ advertisement about organic product
E. Have less knowledge about organic products
F. Less health conscious
G. Their tastes are not that delicious when compared to products that are not organic
H. There is not enough variety of organic products
I. There are no offers on organic products
J. Their appearance is less appealing when compared to products that are not organic.

The responses obtained have been tabulated in Table 2 below:

TABLE 2: PERCEPTION OF THE NON-CONSUMERS

SCALE	CERTAINLY AGREE		AGREE		DISAGREE		CERTAINLY DISAGREE		NO IDEA		
REASONS	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	TOTAL
A	**2**	**10**	2	10	8	40	3	15	5	25	20
B	**1**	**5**	**9**	**45**	**4**	**20**	**6**	**30**	0	0	20
C	**4**	**20**	**13**	**65**	2	10	0	0	1	5	20
D	**9**	**45**	**8**	**40**	2	10	0	0	1	5	20
E	3	15	10	50	6	30	0	0	1	5	20
F	0	0	4	20	11	55	3	15	2	10	20
G	2	10	0	0	9	45	2	10	7	35	20
H	**7**	**35**	**8**	**40**	1	5	0	0	4	20	20
I	2	10	3	15	5	25	1	5	9	45	20
J	**1**	**5**	0	0	9	45	0	0	10	50	20

Before adopting this survey, it was thought that one of the main concerns and barriers in organic food consumption might be its high prices. This myth was put forward (B in Table 2) to the respondents in the survey to see how far it was true. On this issue there was equal response (Table 2). 50 percent agreed that high price is a barrier in organic product consumption, whereas the remaining 50 percent disagreed to the fact. A majority of the non-consumers (85 percent) agreed to the fact that there is not enough information available (Table 2) on the media relating to organic products (D in Table 2) and organic products are not easily available (Table 2) in the market (C in Table 2). Followed by this was the issue of non-availability of a variety of organic product (H in Table 2). 75 percent (Table 2) of the respondents believe that all necessary products are not available in the organic market and this compels them to use products that are not organic. However, it was observed that the respondents were all health conscious, and therefore their ignorance to health issues cannot be a possible reason for their abstinence. Only 10 percent of the non-users consider the concept of organic produce a myth and a meagre 5 percent (Table 2) agreed that the appearance of the organic product being less appealing than the non-organic product is detrimental in their choice by the respondents.

Later in the research, the respondents who said that they consumed organic products (60 per cent) were analysed to judge their behaviour during such purchase. Study was conducted on what they buy, where they buy from, what are their reasons for purchasing and what are the associated barriers etc. In this part, we go on to analyse and interpret the aspects of behaviour, habit and psychology of the consumers. The questions put forward to them are discussed in the section below.

Q1. Whom do you buy for?

	No. of respondents	Percentage
For the whole family	25	83
For somebody	3	10
For myself	2	7

From the responses to Q1 we observe that majority (83 percent) of the consumers buy organic products for the entire family, whereas only 7 percent of them said that they buy such products only for themselves.

Q2. From where do you buy?

	No. of respondents	Percentage
Market	15	50
Producers	0	0
Health food stores	2	6

Specialty shops	5	17
Individual seller	8	27

On enquiring into the place of purchase, half of the consumers were found to purchase their required organic products from the market. Approximately 27 percent meet their requirement from individual sellers. They were of the opinion that all organic products are not readily available in the regular markets and they have to therefore depend on individual sellers and specialty shops to meet their requirement.

Q3. What are the reasons to buy?

SCALE	CERTAINLY AGREE		AGREE		DISAGREE		CERTAINLY DISAGREE		NO IDEA		TOTAL
REASONS	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	
Certified	8	27	17	57	0	0	0	0	5	17	30
Safer	12	40	13	43	0	0	1	3	4	13	30
Less environmental pollution	13	43	13	43	0	0	0	0	4	13	30
Free of synthetic additives	14	47	10	33	0	0	0	0	6	20	30
Fresher and Natural	14	47	13	43	0	0	0	0	3	10	30
High nutritional value	9	30	12	40	2	7	0	0	7	23	30
Healthier	13	43	12	40	0	0	0	0	5	17	30
Out of curiosity	3	10	8	27	5	17	10	33	4	13	30

A set of possible reasons to buy organic products were put forward to the consumers. They were asked to rank them on the Likert scale ranging from 1 (certainly agree) to 4 (certainly disagree) and 5 (no idea). Their ranking shows that approximately 80 to 90 percent of the consumers agree to all the reasons put forward to them. But one issue that they did not much agree upon was the fact that they buy organic products out of curiosity. They thus appear to have made conscious choice.

Q4. What are the reasons to support organic product market?

REASONS	No. of respondents	Percentage
Healthier	16	53
Safer	20	67
Eco-Friendly	19	63

Tastier	7	23
Better Quality	16	53
Support Small Capacity Producers	13	43
Sustainability	16	53
Conservation of Natural Resource	17	57
Popular Trend	2	7

To understand why it is important to support organic product market, Q4 was asked to the consumers. Various possible reasons were put forward to them. More than 60 percent of the consumers focused primarily upon two reasons. They considered such products safer as compared to products which were not organic and considered the organic products eco-friendly. They opined that it is the organic product that would be sustainable and will accelerate conservation of natural resources. They consider it a social issue.

Q5. Why is organic food considered healthy?

REASONS	No. of respondents	Percentage
Contains less amount of chemicals	12	40
Contains high amount of vitamins and minerals	2	7
Safer than non-organic food	8	27
Healthier than non-organic food	0	0
All the above	8	27

The respondents stressed upon the fact that organic products were healthier than the conventional products. This necessitated Q5. While analyzing the answers to this question, it appeared that the consumers believed that as organic products have less chemical and synthetic additives, thus they were healthier than the products which were not organic.

Q6. What are the obstacles in the buying process?

OBSTACLES	No. of respondents	Percentage
High price	22	73
Not easily available in the market	16	53
I do not believe into the organic mark	4	13
Insufficient developed distribution channels	12	40
Poor offer	4	13
I do not have enough knowledge and experience	3	10
I do not have formed habit	2	7
Nothing of offered answers	2	7
Less attractive look	1	3
I do not see advantages comparing to traditional products	3	10

The consumers were asked to express their views regarding the obstacles, if any, in buying organic products. Certain possible hindrances were put to them. Majority respondents (73 percent) said that the high price of such products restricts them from buying such products. More than half of the consumers (53 percent) opined that as organic products are not easily available in the market, they are often compelled to buy non-organic products. However, according to respondents, the appearance of such products (being less attractive than the conventional products) is not a deterring factor.

In this part of the analysis the paper delves into consumption pattern and choice of the consumers.

Q7. Consumption habits

A. Kinds of products you use

PRODUCTS	No. of respondents	Percentage
Fresh vegetables	20	67
Fresh fruits	17	57
Cereal	16	53
Milk and dairy products	11	37
Dry fruits	20	67
Organic cotton clothes	5	17
Meat	8	27
Honey	18	60
Nuts	16	53
Flour	13	43
Seeds	9	30
Oil	11	37

From the responses of the consumers it is observed that of the various organic products available in the market, majority of the consumers (67 percent) prefer consumption of fresh vegetables and dry fruits grown organically. Followed by these is honey (60 percent) and fresh fruits (57 percent). Cereals and nuts are also in demand (53 percent).

B. Frequency of buying

FREQUENCY	No. of respondents	Percentage
1-2 times a week	9	30
3-4 times a week	2	7

1-2 times a month	13	43
3-4 times a month	1	3
Less than 1 times a month	5	17

On enquiring into the frequency of buying organic food it was observed that a majority buy organic products once or twice a month. Only 7 percent of the consumers buy organic products three or four times a week.

C. When did you purchase your first organic product?

TIME	No. of respondents	Percentage
More than 5 years ago	8	27
3-5 years ago	5	17
1-3 years ago	6	20
1 year ago	6	20
6 months ago	0	0
1-3 months ago	1	3
In the last month	4	13

As observed from the above table, 84 percent of the consumers have been using organic products for more than a year. Whereas, 27 percent have been using organic products for more than five years.

D. How much extra are you prepared to pay for organic products?

% OF EXTRA PAYMENT	No. of respondents	Percentage
<10%	12	40
10-<20%	12	40
20-<30%	4	13
30% and more	2	7

The consumers were further asked about their willingness to pay extra price for consuming organic products. Majority (80 percent) of the consumers were reluctant to pay more than 20 percent. This substantiates the earlier analysis which stated that price is a major obstacle in the process of buying organic products.

The last part of the questionnaire deals with the psychology of the consumers which is an important factor of consumer behaviour. For this the following questions were put forward to the respondents.

Q8. Human psychology

A. Do you believe that food having ‘organic food’ logo on them in the markets are organic?

	No. of respondents	Percentage
Yes, I believe so	4	13
No, I don’t think so	8	27
I have no idea	18	60

On analysing the responses, it was observed that maximum respondents (60 percent) seemed to be ignorant about the logo used on the products. This means that the logo did not influence the purchasing decision of the respondents.

B. Impact of opinions of others on the purchase decision of organic product.

	No. of respondents	Percentage
I make my decision	18	60
Medical practitioners	1	3
Family	5	17
Friends	1	3
Media	0	0

When discussing the alternatives that have an impact on the opinion of the consumers in consuming organic products, it was observed that maximum consumers said that it was their own decision to buy organic products. A very few consumers (3 percent) chose to buy organic products on the advice of the medical practitioners and friends. None of the consumers were influenced by the media. This substantiates our earlier inference that lack of publicity is a crucial hindrance in the growth of the organic product market.

C. I would like to consume more organic products if……

	No. of respondents	Percentage
There were more product variety	7	23
I could find them readily in markets	23	77

Finally, to comprehend means to expand the organic product market, the consumers were asked about the conditions under which individuals would be willing to purchase more organic products. Most of the respondents (77 percent) vouched that a better market of organic product, with better accessibility will accelerate consumption of organic product. They viewed that accessibility of organic products is more important than increasing their variety.

Section Four: Conclusion

- **Inference**

From the survey conducted in the state of West Bengal, wherein 60 percent of the respondents are consumers of organic products, it has been observed that females have more preference for organic products as compared to the males. This complies with the argument put forward by Lea and Worsley, (2005). Unlike the proposition of Jolly (1991), age seems to have no impact on the purchasing decision. Incidentally the respondents have similar educational qualification, thus, the impact of education on the choice of product could not be assessed in this survey. 60 per cent of the consumers of organic products belong to the urban areas of West Bengal. This complies with the proposition of Salvador V Garibay and Katke Jyoti (2003). This is probably because such products are better available in the urban areas as compared to the semi urban and rural areas.

Consumers prefer to buy organic products as they consider such food product fresh and natural as compared to the conventional food products. Organic farming perceptions are quite divergent, but there is a strong consensus on its eco-friendly nature and inherent ability to protect human health. This perception was also put forward in the study by Magnusson et al, (2003). This study reveals that organic agriculture is productive and sustainable. The respondents consider such products healthy as less amount of chemical is used compared to non-organic products.

The study further reveals that the consumers primarily purchase organically grown vegetables and dry fruits. This is because of its' easy availability when compared to the other organic food products. Major source of organic food products for the consumers are the nearby markets. They are not frequent purchasers. Majority of the consumers buy organic products once or twice a month.
Although our study begun with the discussion on how nascent the Indian organic product market is, the sample consumers informs that they have been purchasing such products for more than five years. Most of the consumers do not have any knowledge about the logo which are placed on packages of organic products. Most of the consumers expressed that they had no idea about the logo used to identify organic products. This means that the logo does not help in building confidence in the consumers and this is probably due to lack of knowledge about organic certification.

Our study came across 40 per cent respondents who did not consume organic products. As inferred from our study it is primarily due to the *high price* of such product and the *lack of accessibility*. A*bsence of variation* and *ignorance of the potential consumers* also our respondents from choosing organic food products and thereby restricts organic product market growth.

- **Hindrances in growth**

World over the organic product market has to compete with other non-organic product markets in terms of pricing, varieties and the frequency of production. The organic food products are expensive to produce, the probable reasons being costly labour and underdeveloped infrastructure. In a country like India, where labour is abundant and relatively cheap, organic farming is a great potential solution to the problem caused by the chemical farming. But the infrastructure is yet to be developed and thus it deters marketing organisations to sell them at a competitive price. Further, the potential consumers are completely unaware of the information surrounding organics. Lack of proper regulations and certification processes has also hindered the development of the organic food production and marketing. The consumers are not informed on the benefits of using organic products. They have little information about the benefits of organic food products, to themselves and to nature and therefore their choice between the organic and the conventional product is guided primarily by their price.

- **Strategies for growth**

The growth potential and associated social benefits of organic product necessitates initiatives to develop and help support the marketing organisations. Organic product marketers may use the study findings to develop specific strategies for the positioning, communication, pricing and distribution of organic products. The initiatives should provide strategies that will eliminate intermediaries, thus reducing the prices of the products and encouraging more buyers, while at the same time promote the producers. Pricing is crucial for the marketing organization; thus, it should come up with preferred pricing strategies. The marketing location is an important issue in growth. It should be close and easily accessible to the customers and close enough to the producers. Another point to be considered is the connection between the producer and the consumer. The company should focus on the choice of produce it starts with, e.g., vegetables, and then add the products as it grows. Media should be used more effectively by government in order to give more information about organic food and organic food sectors as also proposed by Gil and Soler (2006). The organic product marketers should use entertaining and simple language to grab the attention of the potential consumers and differentiate their products from that of their competitors'. They must be informed about the benefits of using organic products. Increased consumption would be a stimulus for the organic producers, resulting in better environment and improved health of people and thus reduce social cost.

- **Way forward**

The study is acknowledged as exploratory and a foundation for further research. Apart from the sample size, a major limitation of this research is that the respondents belong primarily to two districts of West Bengal; Kolkata and South 24 Parganas. This is unintentional and creates a gap for further research.

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FINANCIAL LITERACY A FORWARD TO FINANCIAL EMPOWERMENT: AN EMPIRICAL STUDY ON ACADEMIC SECTOR IN KOLKATA

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Abstract:

Financial literacy is the summation of financial knowledge, financial attitude, financial behaviour, and financial skill of an individual. In the modern era the financial market becomes too complex and offers so many complex financial instruments, in this situation financial knowledge is the ultimate weapon that helps an individual to understand the financial market and its offering and to take the rational decision of investment. It ensures planning for a financially secure future. Financial literacy is also known as personal money management which not only helps us to understand financial risk and return but also helps us to protect us from any financial fraud. This paper basically focuses on some demographic factors like age, gender, marital status, monthly income, stream of education, educational qualification, and their impact on financial literacy. While assessing the financial literacy level of the respondents it has chosen eight financial literacy variables and assessed the literacy level in all the segments.

Key Words:

Financial Literacy, Financial Risk, Financial Planning, Money Management

1. Introduction

In the twenty-first century a huge chunk of the Indian population is facing trouble while making a financial decision as the financial market becomes too complicated and offers a variety of financial products that are complex in nature than earlier days. Financial knowledge popularly known as financial literacy is the only weapon for overcoming these problems. In order to understand the risk and return which is associated with complex financial products, financial literacy is mandatory. Financial literacy depicts the ability to understand financial information and also helps in making relevant personal financial decisions like saving, investing, budgeting, cash management, debt management, risk management, planning, etc. It helps people to understand different financial principles, financial products like bank accounts, savings, and investment plans, etc. Financial literacy is nothing but the skill and perception about personal management of financial resources which ultimately helps to achieve financial empowerment. Financial empowerment refers to basic knowledge that may require financial planning and decision making. It provides twin benefit of protecting an individual from financial frauds as well as ensures planning for a financially secure future. Financial literacy gives consumers the necessary knowledge, skill, and power which are required to assess the suitability of various financial products and investments available in the financial market. Financial education becomes an important life skill for everyone, in fact, changing the financial scenarios. Financial education helps to achieve financial literacy through financial empowerment which ultimately enhances financial planning. "As a complement to financial inclusion and financial consumer protection, financial education is also important to restore confidence and trust in financial markets, and can support financial stability." (OECD, 2015). So it can be said that financial literacy is the prerequisite of financial empowerment and inclusive economic growth of the country. In 1787 John Adams felt the need for financial literacy while dealing widespread financial distress in America. For a healthy financial system financial literacy is considered a key pillar. In the modern arena it grabs the attention of several groups like policymakers, financial regulators, and government. It helps common people to enhance their understanding of financial matters which ultimately helps them in processing that financial information and to make effective decisions. Financial literacy plays an important role in poverty reduction by developing basic skills and knowledge relating to money management. It also helps individuals in handling their risk of the operation. It also helps in promoting a healthy saving and investing habit, reducing impulsive spending habits.

2. Literature Review

Marriott & Mellett (1996) depicted in their study that financial literacy does not mean that a person would able to take the right decision regarding the financial matters as that person may not be familiar with the particular financial instrument regarding which he/she might make the decision.

Mason & Wilson (2000) tried to explore the actual meaning of the financial literacy. They came out with the idea that financial literacy and financial awareness are not similar in their way. They also found that building adequate concept was totally ignored whereas financial literacy was encouraging among the individuals.

Worthington (2006) shown that stress is the resultant feature of financial illiteracy. He also suggested that it was very common in low-income families however there is no evidence to suggest that these low-income families are financially illiterate. This financial stress could be related to many social issues such as unemployment, large families, poor economic situation, etc.

Samy et al. (2008) focused on the optimal use of the natural network as a sensitivity modelling tool for understanding the financial literacy of the Australian youth with respect to their financial knowledge. Their intention was not to explore the skill of youth in order to measure the financial literacy but to put light on the basic financial knowledge of the key product that is common to the youth of Australian society.

West (2012) observed that a financially literate person not always demonstrate sound financial behaviour. He put light on the objective of the literacy campaign that is not only restricted in creating awareness but also focused on psychological biases and limitations that as a human being they cannot easily avoid.

Bhushan & Medury (2013) said that the overall financial literacy level of respondents is not very high. Financial literacy level gets affected by employment status, nature of work, income, age, gender, educational qualification, etc. They also added that government employees are not that much financially literate in comparison to the private employees. The geographical boundary does not have a significant impact on financial literacy.

Hossein et al. (2014) stated that the discipline of education, qualification, and income has no statistically significant relationship with financial literacy whereas other demographic factors like age, gender has a relationship with financial literacy which is statically significant. They also observed that administrative employees possess a higher level of financial literacy than other employees.

Rohini et al. (2015) found that the major source of financial information to the villagers are their friend, relatives, colleagues, business correspondents, bank staff, etc. They also addressed that banks should take suitable initiative and trained their staff so that they can play a vital role while creating awareness of financial products and services in the mind of the villagers. In village smart card banking needs to be encouraged as most of the customers are workers of MGNREGA.

Umamaheswari & Krishnan (2016) concluded that in India overall financial literacy rate is not satisfactory. For making a worthy investment they need proper training and awareness campaign. Most of them do not maintain a proper record of cash flows and they don't prefer to follow an adequate budget. They also added that they don't have sufficient knowledge regarding the usages of various financial products.

Garg & Singh (2017) concluded that financial literacy is a basic understanding of financial matters and application of these to make relevant and adequate financial decisions. He also observed that educational qualifications significantly related to each other. They also added that for a highly qualified person, gender, marital status, age, residential status does not have a significant influence in their financial decision. They also suggested the need for organizing financial literacy-related programs that may boost the financial literacy level.

Nichlavose & Sruthi (2017) Studied that the benefit of financial literacy is not only restricted to individuals but also it spread its wings in societal and macroeconomic level. They also added that national, regional, public and private initiatives should be required to create awareness in the society which may lead to a better understanding of the financial risk associated with various financial products, adequate savings schemes, insurance programs, and financial education.

Jayanthi & Rau (2017) concluded that there is a strong association between financial literacy and the spending behaviour of the people. Those who have a low level of financial literacy spend more and vice versa. Demographic factors like age, gender, occupation, annual income, education, etc. are the factors that influence financial knowledge.

Dinesha (2018) investigated in the study that in comparison to the rest of the world, India has a poor financial literacy rate. Financial illiteracy creates a burden upon India via the higher cost of financial safety and lesser socio-economic prosperity. Unproductive investment is the result of a lack of awareness regarding financial instruments. He observed that financial knowledge enrich common people's ability that ensure a healthy economic situation of their family.

Lusardi (2019) stated that not only in developing countries but also in so many developed countries, having well developed financial market lack of financial awareness is the acute concern and need to take immediate action. It also suggested in this study that in modern world financial literacy should be treated as important as basic literacy.

3. Objectives of the Study

This study has undertaken to observe the growing popularity of financial literacy and its impact on personal money management. The general objective is to analyse the impact of financial education upon understanding financial information, taking financial decision making, planning for a financially secure future. In specific terms some of the objectives may be enumerated as follows:

- To see the demographic profile of the respondents and their perception of financial literacy
- To assess the financial literacy level of the employees in the education sector using different literacy related variables
- To examine the effect of various demographic factors on financial literacy level

4. Research Methodology

The present study is exploratory and empirical in nature. Data has been collected exclusively from the employees of the education sector of Kolkata. This study considered 72 teaching staff, 30 administrative officers, 22 accountants 41 management staff of education sector belonging in three different streams viz., science, commerce and arts. This study is based on information available through a structured questionnaire put across the selected sector of Kolkata. For collecting primary data questionnaire was formed with the help of a various expert and after several rounds of a pilot survey it was finalized. The total time taken for the whole process of data collection was nearly six months from July to December 2019.

Most of the respondents were contacted either personally or through a mailed questionnaire. A stratified sampling technique was adopted with each discipline of education being treated as a stratum. Further quota sampling was applied in each stratum for data collection through the structured questionnaire.

The collected data has been analysed through the SPSS package by using different statistical tools (viz., descriptive statistics, testing of hypothesis, analysis of variance, etc.). Some other qualitative data analysis techniques (scaling techniques) have also been adopted to extract the relevant information from raw data and that are interpreted properly for conclusions of the study.

For measuring financial literacy among the respondents, eight variables related to financial literacy have been considered. They are as follows:

General Financial Literacy: It depicts basic financial management i.e., day to day money management knowledge and skill. This is the most important and starting point of this study where information regarding spending habits, purchasing power of money, time value of money, per capita income, gross national income, net national income, APL, BPL, budget, financial goal of the respondents have been examined.

Saving & Borrowing Related Literacy: This literacy variable provides sufficient financial knowledge in saving and borrowing region. It assessed spending, borrowing and saving behaviour of the respondents. It consists of ideas about the formal and informal financial systems, financial institutions, bank rates, interest rates of the various financial institutions, offers documents, EMI, etc.

Banking Related Literacy: This financial literacy variable focused upon the banking habit of the individual. For this purpose this segment consists of various questions which are based on awareness of different types of banks, different interest rates, regulatory body i.e., RBI, basic function say accepting deposit and granting loans, advances functions like discounting, remittance, credit instrument facilities, consultancy service, playing the role of the grantor, etc.

Postal Savings Literacy: Post office is the oldest pillar of financial inclusion, that's why it is considered as an important determinant of financial literacy of the respondents. In this section knowledge of the respondents regarding post office savings account, Post Office Monthly Income Scheme (POMIS), Kishan Vikas Patra (KVP) and investment through it in Post Office, e-payments, Money Order facility, ATM and cheque book facility, Postal Life Insurance policy, International money transfer facility, etc. have been tasted.

Insurance Related Literacy: Insurance-related knowledge of the respondents are assessed in this part through various question such as basic idea about insurance, the purpose of buying an insurance policy, whether purchase insurance is to protect them from sustaining a future loss, different types of insurance like Life Insurance, General Insurance, and Medical Insurance, Micro Insurance, Agricultural Insurance, etc.

Investment Related Literacy: Investment-related knowledge of the respondents was examined here. It consists of several questions regarding knowledge of money market, capital market, mutual fund, FDI, FPI, SIP, gold bond, types of investors like risk seeker, risk-averse, etc.

Stock Market Related Literacy: It provides knowledge to understand the stock market and its different components. The stock market, IPO, FPO, book building process, blue cheap company, SENSEX, NIFTY, etc. have been focused on stock market literacy variables. It tries to assess the stock market-related knowledge of the respondents.

Taxation Related Literacy: Taxation relating knowledge of the respondents like their knowledge regarding the taxation system of India, present tax slab, exemption, deduction, relief, GST, etc. have been focused under this financial literacy variable.

5. Data Analysis and Findings

In this section data have been analysed from the responses received through a questionnaire of 165 of the education sector in Kolkata. The section contains the general profile of respondents, the literacy level of the respondents among different financial literacy-related variables, different variables measuring financial literacy, and their dependence on various demographic factors.

5.1 General Profile of Respondents and their Perception of Financial Literacy

165 respondents (55 from each stream) belonging in three different streams of education i.e., science, commerce, and arts are chosen for the study. This study considers graduation as minimum educational qualification.

Table 1: Demographic Profile of the Respondents

Demographic Characteristics	Class	Frequency	Percentage
Age (Years)	21-30	33	20.00
	31-40	50	30.30
	41-50	35	21.21
	Above 50	47	28.49
	Total	**165**	**100**
Gender	Male	93	56.36
	Female	72	43.64
	Total	**165**	**100**
Educational Qualification	Graduate	97	58.78
	Post Graduate	43	26.06
	M.Phil./Ph.D.	25	15.16
	Total	**165**	**100**
Discipline of Education	Science	55	33.33
	Commerce	55	33.33
	Arts	55	33.34
	Total	**165**	**100**
Monthly Income (Rupees)	Up to 10,000	37	22.42
	10,001-25,000	57	34.55
	25,001-50,000	40	24.24
	50,001-75,000	20	12.12
	75,001-1,00,000	11	6.67
	Total	**165**	**100**

The demographic profile depicts that 56.36% respondents are male and 43.64% of the total respondents are female. 30.30% of the total respondents belong to 31-40 age bracket followed by 28.49% of respondents of the above 50 age group. It is also cleared that 58.78% of the respondents are graduate followed by 26.06% postgraduate and 15.16% of respondents who are having M.Phil./Ph.D. It also observed that 34.55% respondents are falling under that Rs.10,001-Rs.25,000 monthly income group, whereas only 6.67% respondents belong to 75,001 to 1,00,000 monthly income slab.

Table 2: Financial Literacy and Age of Respondents

Age (Years)	**21-30**	**31-40**	**41-50**	**51 & above**
No of Respondents	**33**	**50**	**35**	**47**
Literacy Variable	**Mean Score**			
General	3.4264	3.3029	3.4714	3.4863
Saving & Borrowing	3.1347	3.1222	3.3968	3.0946
Banking	3.5510	3.5964	3.5870	3.6596
Postal Savings	3.1650	3.3378	3.2508	3.3168
Insurance	2.9182	2.7160	3.1086	2.9383
Investment	3.2182	3.1640	3.1514	3.1064
Stock Market	2.5405	2.7667	2.7762	2.6312
Taxation	3.0110	3.2200	3.0675	3.1238

The above table shows the mean values of all Literacy Variables varies strongly with age. Irrespective of age, people possess basic knowledge in banking and postal savings, on the other hand, they possess less knowledge in stock market and insurance-related literacy variables.

Table 3: Financial Literacy and Gender of Respondents

Gender	**Male**	**Female**
No of Respondents	**93**	**72**
Literacy Variable	**Mean Score**	
General	3.3833	3.4573
Saving & Borrowing	3.1935	3.1512
Banking	3.6217	3.5795
Postal Savings	3.3202	3.2253

Insurance	2.8677	2.9486
Investment	3.1204	3.2014
Stock Market	2.6219	2.7662
Taxation	3.1232	3.1124

The above table reveals that financial literacy varies strongly with gender. It can be observed that females are more financially literate in insurance, investment and stock market segment. It reveals that women empowerment and independent financial decision making power of women in the twenty-first century. On the contrary banking and saving borrowing segments male respondents are having more financial knowledge.

Table 4: Financial Literacy and Education Qualification of Respondents

Educational Qualification	**Graduate**	**Post graduate**	**M.Phil./Ph. D.**
No of Respondents	**97**	**43**	**25**
Literacy Variable	**Mean Score**		
General	3.3549	3.5465	3.4257
Saving & Borrowing	3.1317	3.2972	3.1333
Banking	3.5455	3.7125	3.6400
Postal Savings	3.2543	3.3307	3.2844
Insurance	2.8299	3.0884	2.8680
Investment	3.1732	3.1884	3.0320
Stock Market	2.6856	2.7907	2.5000
Taxation	3.1246	3.1205	3.0909

From the above it is observed financial literacy varies with educational qualification. It has been observed that post-graduates are in better position with respect to their financial knowledge and literacy level followed by M.Phil./Ph.D.

Table 5: Financial Literacy and Discipline of education of Respondents

Discipline of Education	**Science**	**Commerce**	**Arts**
No of Respondents	**55**	**55**	**55**
Literacy Variable	**Mean Score**		
General	3.7416	3.4883	3.0169
Saving & Borrowing	3.4990	3.3293	2.6970
Banking	3.7554	3.7851	3.2694

Postal Savings	3.2222	3.4929	3.1212
Insurance	2.4073	2.8836	2.4182
Investment	3.0982	3.0655	3.3036
Stock Market	2.6152	3.1000	2.3394
Taxation	2.0281	3.3587	2.9686

From the above it has been observed that irrespective of the stream of education people are having basic knowledge in general financial literacy, banking literacy and postal saving literacy that reveals their basic financial awareness. In saving borrowing segment lack of awareness found among arts backgrounders. The respondents from commerce have strong knowledge in the stock market and taxation segments.

Table 6: Financial Literacy and Monthly Income of Respondents

Monthly Income (in Rupees)	Up to 10,000	10,001-25,000	25,001-50,000	50,001-75,000	75,001-1,00,000
No of Respondents	**37**	**57**	**40**	**20**	**11**
Literacy Variable	**Mean Score**				
General	3.3243	3.4073	3.3768	3.5393	3.6818
Saving & Borrowing	3.0271	3.2593	3.1167	3.2278	3.2020
Banking	3.4226	3.6156	3.6455	3.7591	3.7107
Postal Savings	3.1321	3.3450	3.2167	3.4333	3.3737
Insurance	2.7784	2.9123	2.8675	3.0000	3.2273
Investment	3.2054	3.1246	3.2325	3.0500	3.0636
Stock Market	2.5045	2.7485	2.6167	2.8667	2.8788
Taxation	3.0246	3.1786	3.1023	3.1727	3.0826

It has been found that irrespective of monthly income there is a little awareness regarding stock market literacy. In most of the cases insurance and investment literacy varies directly with monthly income of the respondents.

5.2 Financial Literacy Level of the Respondents

In this study financial literacy-related variables and corresponding attributes have been measured with the help of a bipolar scale (1-2-3-4-5). Two extreme ends of scale 1 signify extremely low financial literacy level and the other end of the bipolar scale 5 signifies extremely high financial literacy level. To measure the financial literacy level of the respondents it considers eight financial literacy-related variables which are discussed in detail in the research methodology portion.

Table 7: Reliability Statistics

	General Financial Literacy	Savings & Borrowing related Literacy	Banking related Literacy	Postal saving related Literacy	Insurance related Literacy	Investment related Literacy	Stock market related Literacy	Taxation related Literacy
Cronbach's Alpha	0.862	0.786	0.853	0.609	0.857	0.551	0.905	0.583

Cronbach's alpha coefficient confirms the internal consistency of the set of items of a given scale. In general, any value greater than 0.50 is desirable under the Cronbach's alpha. The above value of Cronbach alpha ensure that the internal consistency of the dataset is satisfactory.

Table 8: General Financial Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00
Medium	35	21.2
High	118	71.5
Very high	12	7.3
Total	**165**	**100**

To measure general financial literacy 14 attributes have been considered. It is clear from the above table that 71.5% respondents are having a high level of general financial literacy followed by 35 and 12 respondents who are having medium and very high general financial literacy levels. It can be concluded that a major part of the selected respondents are literate with respect to general financial literacy. They have a basic idea about Risk and return, per capita income, the purchasing power of money, time value of money, healthy spending habits, etc.

Table 9: Savings & Borrowing Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00
Medium	62	37.6
High	100	60.6
Very high	3	1.8
Total	**165**	**100**

In this section 9 attributes have been framed for assessing saving & borrowing related literacy. Savings & borrowing related literacy level is satisfactory of the respondents. 60.6% of them having a high literacy level while 37.6% possess a medium level of saving &borrowing literacy. It is observed that respondents are conscious as well as rational while taking decisions and they have been considered a lot of factors while investing and borrowing funds in their personal as well as professional life. They have the basic idea of interest rate prevails in different financial institutions. They also know the simple and compound interest rates. Before investing they prefer to compare not only risk and return but also time value of money.

Table 10: Banking Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00
Medium	13	7.9
High	150	90.9
Very high	2	1.2
Total	**165**	**100**

In this segment 12 attributes have been taken for measuring the banking literacy level. Majority of the respondents having a satisfactory level of banking literacy. A bank is one of the important pillars in the arena of financial inclusion, so without banking literacy financial literacy cannot be completed. As per the above-mentioned result it is satisfactory that most of the respondents having proper knowledge of banking, they have clear-cut ideas regarding the primary banking activities (i.e., accepting saving and granting loans) and other services like discounting, remittance, collection, and payment of credit instruments facilities, etc.

Table 11: Postal Saving Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00
Medium	35	21.2
High	130	78.8
Very high	00	00
Total	**165**	**100**

Here 9 attributes have been selected for examining postal saving literacy. One of the oldest financial institutions is the post office and in financial inclusion it plays an important role in serving people who are deprived of the formal financial systems. So this study considers postal saving related literacy as one of the important components of financial literacy. 78.8% respondents in spite of having various financial institutions they are aware of different investment schemes. They have ideas regarding Post Office Monthly Income Scheme (POMIS), Kishan Vikas Patra (KVP), recently launched e-payment, International money transfer facility, etc.

Table 12: Insurance Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00

Medium	108	51.7
High	97	46.4
Very high	4	1.9
Total	**165**	**100**

In this segment 10 attributes have been considered. Being augmented product people have less knowledge regarding insurance, which also reflects in our result, majority of the respondents i.e. 51.7% possess a medium level of financial literacy in this segment. Some of them treat it as mare investment tool. A general idea of buying a life insurance policy is to reduce tax liability and protect any future loss. 1.9% respondents' have vivid knowledge regarding all types of insurance and the pros and cons of these.

Table 13: Investment Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	1	0.5
Medium	70	33.5
High	137	65.6
Very high	1	0.5
Total	**165**	**100**

For measuring investment related literacy, 10 attributes have been considered. 65.6% respondents are having a high degree of financial literacy in this segment, it reflects that they are aware regarding various investment opportunities, risk, and returns associated with the investment, FDI, FPI, credit rating score. 33.5% respondents have a medium level of literacy in this segment, they have the basic ideas, they prefer to invest their hard earn money in the capital market through a mutual fund.

Table 14: Stock Market Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	1	0.5
Medium	126	76.4
High	32	19.4
Very high	6	3.6
Total	**165**	**100**

Here 6 attributes have been selected for assessing the stock market-related literacy. The majority of the respondents are having medium stock market literacy levels. They have the basic idea but they are not that much sound in this segment. Commerce people followed by science and arts have comparatively high literacy in this segment. As they do not possess sound knowledge they prefer to keep their money in financial institutions like banks, post offices, etc. 19.4% respondents have high literacy level, among them it has been found that some respondents from commerce background have sound knowledge of the capital market, they prefer to invest their money in the capital market.

Table 15: Taxation Related Literacy of the Respondents

Literacy level	Frequency	Percentage (%)
Low	00	00
Medium	66	40
High	99	60
Very high	00	00
Total	**165**	**100**

In this segment 11 attributes have been considered while examining the taxation related literacy. It has been observed that 60% respondents have sound knowledge in the taxation system of the country. They are fully aware of the pros and cons of newly introduced indirect tax i.e. GST. They often check their shopping bills to know how much they are paying as SGST and CGST. They have sufficient ideas regarding professional tax, service tax, and entertainment tax. Commerce people compare to other steam know the distinction of exemption, deduction, and relief. More or less all of the respondents are aware of the current tax slab and various tax rates.

5.3 Variation of Financial Literacy Variables with respect to Demographic Factors

In this subsection the dependency of the financial literacy variables on age, gender, educational qualification, the stream of education, and monthly income have been studied.

Table 16: Variation of Financial Literacy Variables with Age, Gender and Educational Qualification

Literacy Variables	Age		Gender		Educational Qualification	
	F-value	P- value	F- value	P- value	F- value	P- value
General	2.195	.091*	1.463	.228	3.710	.027*
Saving & Borrowing	3.455	.018*	.323	.570	1.959	.144
Banking	.751	.523	.649	.422	4.074	.019*
Postal Savings	3.120	.028*	4.835	.029*	1.134	.324
Insurance	3.714	.013*	.855	.357	3.360	.037*
Investment	.713	.546	2.331	.129	2.016	.137
Stock Market	1.204	.310	2.112	.148	1.671	.191
Taxation	6.153	.001*	.080	.777	.193	.824

*Indicates significant at 0.05 level

From the above table it is clear that there is a significant association which is statistically significant between age and general financial literacy, saving &

borrowing related literacy, postal saving related literacy, insurance, and taxation related literacy. It can be concluded that financial literacy varies significantly with the age group of the respondents at a 5% level of significance.

It is also observed that there is a significant association between gender and postal saving related literacy. So it can be concluded that postal saving literacy which is one of the important components of financial literacy varies significantly between males and females at a 5% level of significance.

From the above table it can be said that there is a significant association which is statistically significant between educational qualifications, general financial literacy, banking, and insurance-related literacy at a 5% level of significance. Therefore it is clear that graduate, postgraduate, and M.Phil./Ph.D. having significant variation with financial literacy.

Table 17: Variation of Financial Literacy Variables with the Discipline of Education and Monthly Income

Literacy variables	Discipline of Education		Monthly Income	
	F- value	P- value	F- value	P- value
General	8.670	.000*	2.474	.047*
Saving & Borrowing	9.388	.001*	1.117	.351
Banking	5.344	.001*	4.668	.001*
Postal Savings	8.194	.000*	6.519	.000*
Insurance	9.077	.001*	1.615	.173
Investment	8.719	.001*	1.540	.193
Stock Market	6.567	.000*	1.700	.153
Taxation	8.805	.001*	2.740	.031*

*Indicates significant at 0.05 level

From the above table it has been observed that there is a significant association which is statistically significant between discipline of education and financial literacy. Commerce backgrounder people are more financially literate followed by the respondents having science and arts background. Financial literacy varies significantly with the stream of education at a 5% level of significance.

It is also observed that the monthly income of the respondents varies significantly with banking-related literacy, general financial literacy, postal savings, and taxation related literacy at a 5% level of significance.

6. Concluding Observations

Broadly this study has highlighted financial literacy as an important tool for financial empowerment. Financial empowerment refers to basic knowledge that may require financial planning and decision making. Without financial literacy financial empowerment is just impossible. Specifically this study focused upon the influence of various demographic factors on financial literacy and it also assessed the financial literacy level of the respondents among eight different financial literacy-related variables.

It can be said that financial literacy varies strongly with various demographic factors such as age, the discipline of education, and gender. Financial literacy does not vary directly with the educational qualification and monthly income of the respondents. It can be observed that irrespective of age and discipline of education respondents possess basic financial knowledge in the banking and postal saving section, on the other hand due to lack of awareness they possess less financial knowledge in the stock market and insurance-related literacy variables. In saving borrowing segment lack of awareness found among arts backgrounders. Whereas commerce background people have strong knowledge of the stock market and taxation literacy-related variables. It is also found that female respondents have adequate financial knowledge in investment and stock market rather than male respondents. Most of the respondents consider lots of factors before making financial decisions. It can be said that people having basic financial knowledge that may reveal their financial awareness.

It can be concluded that the overall financial literacy level of the academic sector of Kolkata is satisfactory. The level of financial literacy gets affected by age, gender, and the discipline of education. The results depict that the financial literacy level varies significantly among the respondents based on various socio-economic and demographic factors. It also shows that respondents are still not having sufficient financial knowledge regarding insurance and investment in the stock market.

It is also noted that financial knowledge solely depends upon financial awareness which ultimately boosts financial empowerment. Financial empowerment is the process through which an individual can control the economic resources and ability to make a rational financial decision. Financial awareness is only possible with proper financial education programs and awareness campaigns as a result financial empowerment may be achieved. It can be concluded that financial literacy and financial empowerment moves in the same direction. Various demographic factors say age, gender, educational qualification, discipline of education broadly influence financial literacy as well as financial empowerment. On the contrary more awareness campaign is required on insurance, stock market, and investment so that proper financial empowerment is achieved through the channelization of ideal savings into adequate investment.

However during last few years digitalisation has affected individuals as well as each sector of our economy. In recent time with the digitalisation of financial market, Digital Financial Literacy has become a burning issue that need to be taken care off. Digital Financial Literacy is the combination of financial literacy and digital platform. Digitalisation of financial market ensures broad-based financial inclusion by offering easily accessible digital financial alternatives such as mobile banking, e-banking, payment bank, digital wallet etc. By offering customised financial products and services digitalisation pave the way to enhance the proficiency of money management skills that helps to reduce financial fraud. In recent time it can be observed that COVID 19 pandemic is giving rise to worldwide economic crisis. According to International Monetary Fund (IMF) "the global economy is expected to shrink by over 3% in 2020 – the steepest slowdown since the Great Depression of the 1930's". In this hard time financial literacy and financial empowerment may be used as one of the weapon to cope up with this financial distress.

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MEGA BANK MERGER DRIVE IN INDIA: ANALYSIS OF FINANCIAL PERFORMANCE OF BANKS BEFORE MERGER

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Abstract:

Banking sector plays an important role in the development of an economy in a country. Banking sector has the most crucial role in the smooth functioning of economy in India. India is one of the developing countries which has a strong banking base with a large number of banks in India. But in recent times a large number of Merger of Banks in India has been announced by the Finance Minister Nirmala Sitharaman on 30.08.2019. So an evaluation of the performance of merged banks is done in this study on the basis of CAMEL Rating Model for judging Capital Adequacy, Asset Quality, Management Effectiveness, Earnings Ability, and Liquidity. The present study analyses the financial performance of banks before merger in recent times.

Key Words:

Capital Adequacy, Asset Quality, Management Effectiveness, Earnings Ability, Liquidity

1. Introduction

India has embarked upon the path of Liberalization, Privatization and Globalization (LPG), especially after 1991. This paved the way for the economic development of the country. Financial sector, in general, and banking sector, in particular, plays a pivotal role in the economic development of the country. One of the main participants of the financial system is the banks. Banking sector is the backbone of the National economy of developing country like India. Banking sector acts as an indicator for the level of development of any country. Therefore, banking sector plays an important role towards the economic growth.

Banking is becoming an increasingly global industry, which knows no geographical boundaries. The Indian Banking Sector has witnessed phenomenal growth over the last five decades, especially after the nationalization of the Indian Banks in 1969. Looking at the last twenty five years (w.e.f 1995), the banking sector has definitely come a long way. The phase of development of the banking sector is a good reflection of the development of the economy. Evaluation of financial performance of the banking sector can be reckoned as one of the credible indicators to judge the soundness of economic activities of an economy. Being so, the present paper makes a modest attempt to analyze the financial performance of the banks for five years w.e.f. 2015 to 2019.

2. Literature Review

Satish, Jutur and Surender (2005) concluded that the Indian banking system looks sound and Information Technology will help the banking system grow in strength in future.

Gupta and Kaur (2008) conducted the study with the main objective to assess the performance of Indian private Sector Banks on the basis of Camel Model and gave rating to top five and bottom five banks.

Adesina (2012) analyzed the performance of Nigerian Banking Sector in the Post-2005 Consolidation through the Camel Rating System.

Misra and Aspal (2013) studied and analyzed the performance of State Bank Group using CAMEL model. The study identified the areas showing the poor performance of the group.

Tripathi and Meghani (2014) conducted a study to compare the financial performance of Axis and Kotak Mahindra bank (private Sector banks). The CAMELS analysis and t-test concluded that there is no significance difference between the Axis and Kotak Mahindra bank's financial performance but the Kotak Mahindra bank performance is slightly less compared with Axis Bank.

Trivedi, Rehman & Elahi (2015) studied to make an effort to inspect and distinguish the performance of four banks of India i.e. two from private sector banks, Axis Bank and Kotak Mahindra Bank and two from the public sector banks, Bank of Baroda and State Bank of India. The analysis is based on the CAMEL Model.

Suba (2015) studied the two counterparts of Indian banking sectors (public and private) using CAMEL framework as a tool of financial performance evaluation.

Jhalpa (2016) studied to analyze the performance of private and public sector banks in India using CAMEL model. The period of five years from 2004-05 to 2013-14 was taken for the study. HDFC Bank, Axis Bank, INGbank, Kotak bank, ICICI Bank were taken from private sector banks and Bank of India, Dena Bank, Punjab National Bank, SBI and Bank of Baroda were taken from public Sector Banks.

Majumdar (2016) measured the financial performance of 15 banks in Bangladesh for the period 2009-2013. CAMEL model had been used to examine the financial soundness of selected banks. Composite Ranking, average and ANOVA test had been applied to the data. The study concluded that there had been significant difference in the performance of selected banks. The study suggested that banks should take required steps to recover their shortcomings.

Srinivasan & Saminathan (2016) conducted the study on public sector banks, private sector banks and foreign banks. The findings of the study showed that public sector banks, viz. Andhra Bank, Bank of Baroda, Allahabad Bank, Punjab National Bank, State Bank of Bikaner and Jaipur, IDBI Bank and UCO Bank has been ranked at the top five positions in their financial performance during the study period. The private sector banks, namely, Tamilnad Merchantile Bank, Kotak Mahindra Bank, HDFC Bank, Axis Bank, Karur Vysya Bank, ICICI Bank, Citi Union Bank and IndusInd Bank shared the top five positions. The foreign banks such as Bank of Bahrain & Kuwait, HSBC Bank, The Royal Bank of Scotland, Deutsche Bank, CTBS Bank, Citi Bank, DBS Bank and Royal Bank of Scotland secured the top five positions during the study period. The empirical results show that there is a statistically significant difference between the CAMEL ratios of the selected public Sector Banks, private Sector Banks and foreign Banks in India, thus, signifying that the overall performance of within and between public, private and foreign Banks are different.

Kumar & Malhotra (2017) analyzed the performance of selected private Banks and investigate the factors that mainly affect the financial performance of the selected banks in India. Axis bank has strong performance in case of Asset Quality, Management efficiency and Earnings Ability while it is lag behind in case of capital adequacy. IndusInd bank at the lowest position compared to other banks under the study due to its poor performance in the context of Capital Adequacy, Earnings Ability and Liquidity whereas it perform better in case of capital adequacy.

Singh (2017) examined the capital adequacy performance of private and public sector banks in India for a period of 2006-2015. The study found that all the banks had sound capital adequacy position except Central Bank of India.

Subbiramani, Ranjith and Balagurusamy (2018) studied on the performance of public and private sector banks using CAMEL model with special reference to CANARA bank and HDFC bank.

Sharma and Chopra (2018) conducted a comparative study of public and private banks in India using CAMEL model. The study concluded that private sector banks perform better than the public sector banks in India on all parameters of CAMEL Model for the period from 2014 to 2017. Public sector banks display low soundness as compared to private sector banks.

Bothra and Purohit (2018) analyzed the performance of ICICI Bank and SBI, where it was concluded that SBI has outperformed ICICI bank with regard to Capital Adequacy, Asset Quality, while ICICI bank beats SBI with regard to Management efficiency, Earning Quality and Liquidity.

3. Objectives of the study

1. To present an overview of merger of banks in recent times.
2. To evaluate each dimension of the CAMEL Model and its impact on the profitability, loans, deposits, borrowings, capital, etc.
3. To compare the performance of selected Public Sector Banks before merger.
4. To make recommendations and suggestions for better performance.

4. Research Methodology

Population of the study – The study covers the census of thirteen banks in the Indian banking sector, namely, Allahabad bank, Andhra Bank, Bank of Baroda (BOB), Canara Bank, Corporation bank, DENA Bank, Indian Bank, Oriental Bank of Commerce (OBC), Punjab National bank (PNB), Syndicate Bank, Union bank of India, United Bank of India (UBI), and Vijaya Bank.

Sources of Data - This study is based on secondary data of banks in India collected from Annual reports of Banks from respective Bank's websites. Data from money control websites has also been taken for the period study of five years from 2015 to 2019. CAMEL Model has been used in the study.

Statistical Tools Used - Ratio Analysis, Arithmetic mean, Rank, Percentage.

5. Profile of Banks in India

The Reserve Bank of India is the Central Bank that is fully owned by the Government. It is governed by a Central board (headed by the Governor) appointed by the Central Government. It issues guidelines for the functioning of all banks operating within the country. (Dhankar, 2014) Public sector banks are those banks whose majority stake (i.e. more than 50%) is held by the Government. There are a total of 21 public sector banks in India namely, Allahabad Bank, Andhra Bank, Bank of Baroda, Bank of India, Bank of Maharashtra, Canara Bank, Central Bank of India, Corporation Bank, DENA Bank, IDBI Bank, Indian Bank, Indian Overseas Bank, Oriental Bank of Commerce, Punjab & Sind Bank, Punjab National Bank, State Bank of India, Syndicate Bank, UCO Bank, Union Bank of India, United Bank of India, Vijaya Bank. (Dhankar, 2014). However, the merger of banks has already taken place which is shown in Table 1.

Table 1: List of Merged Banks with Business Size

Anchor Bank	Amalgamating Bank	Business Size (in ₹)	Rank By Size
State Bank of India (SBI) *	✓ State bank of Bikaner and Jaipur (SBBJ) ✓ State bank of Hyderabad (SBH) ✓ State bank of Mysore (SBM) ✓ State bank of Patiala (SBP) ✓ State bank of Travancore (SBT)	52.05 lakh cr	1st
Punjab National Bank (PNB)	✓ Oriental Bank of Commerce (OBC) ✓ United Bank of India	17.94 lakh cr	2nd
Bank of Baroda (BOB)	✓ Vijaya Bank ✓ DENA Bank	16.13 lakh cr	3rd
Canara Bank	✓ Syndicate Bank	15.20 lakh cr	4th
Union Bank of India	✓ Andhra bank ✓ Corporation Bank	14.59 lakh cr	5th
Bank of India *	-	9.00 lakh cr	6th
Indian Bank	✓ Allahabad Bank	8.08 lakh cr	7th

(Source: m.economictimes.com, 30th August, 2019) (SBI and Bank of India are not within the purview of this study, this study is based on the Banks which are merged with effect from 1st April, 2020)*

Table 1 shows the list of merged banks in recent times. The urge for creating one of the largest banks, the Government has approved many mergers of banks with effect from 1st April, 2020.

6. CAMEL Model

CAMEL Model is a tool of performance evaluation of banks over years. The financial performance of banks is measured on the basis of five important performance rating attributes such as Capital Adequacy, Assets Quality, Management Efficiency, Earnings Capacity and Liquidity. Summarized list of ratios covered under the study are shown in Table 2.

6.1 Capital Adequacy Test (C)

Capital adequacy signifies a banks position to absorb unexpected losses. A bank is required to maintain enough capital so that it can absorb unexpected losses. A bank should maintain minimum coverage to provide safety to its depositors, creditors, investors, etc. for which the bank is required to maintain such amount of capital so that it can cover the future unexpected losses. Therefore, in order to measure the capital adequacy of selected banks, the following ratios are considered in this study:

1. Capital Adequacy Ratio (CAR)
2. Capital Adequacy Tier 1

Table 2 : Summarized list of Ratios

C	**CAPITAL ADEQUACY**	1.Capital Adequacy Ratio 2.Capital Adequacy Tier-1	= (Tier 1 Capital + Tier 2 Capital) / Risk Weighted Assets =Tier 1 Capital
A	**ASSET QUALITY**	1.Return on Assets Ratio 2.Net NPAs to Net advances	= (Net Profit + Interest paid to lenders and depositors – Tax advantage on interest paid) / Total Assets = Net NPAs/Net advances
M	**MANAGEMENT EFFICIENCY**	1.Profit per Employee 2.Business per Employee	= Total Profit / Total number of Employees = Total business / Total number of employees
E	**EARNINGS CAPACITY**	1. Non-interest Income to Working Funds 2.Operating Profit to Working funds	= Non-Interest Income/Working Funds = Operating Earnings / Working funds
L	**LIQUIDITY**	1.Cash to total assets 2.Total Investments to Total Assets	= Cash/ Total Assets = Investment/ Total Assets

6.1.1. Capital Adequacy Ratio (CAR)

adequacy framework is that a bank should maintain sufficient capital to provide a stable resource to absorb any losses arising from the risks in its business. Capital is divided into different tiers according to the characteristics/qualities of each qualifying instrument.

CAR = (Tier 1 Capital + Tier 2 Capital) / Risk weighted Assets ………. (1)

Risk Weighted Assets include (i) Credit risk, (ii) Market risk, and (iii) Operational risk. The average of all kinds of risk weights is Risk Weighted Assets.

6.12. Capital Adequacy Tier 1 Ratio

TIER 1 CAPITAL – A term used to refer to one of the components of regulatory capital. It consists mainly of share capital and disclosed reserves (minus among others goodwill, if any). Tier 1 items are deemed to be of the highest quality because they are fully available to cover Capital is the equity contribution of owners. The basic approach of capital losses. Hence it is also termed as Core Capital.

Tier 1 capital = (Paid up capital + statutory reserves + disclosed free reserves) - (equity investments in subsidiary + intangible assets + current and brought forward losses) ……… (2)

TIER 2 CAPITAL – It refers to one of the components of regulatory capital. Also known as supplementary capital, it consists of certain reserves and certain types of subordinated debts. Tier II items qualify as regulatory capital to the extent that they can be used to absorb losses arising from banks activities. Tier II's capital loss absorption capacity is lower than of tier I capital.

Capital Adequacy Ratio, Capital Adequacy Tier 1 Ratio and Analysis of Capital Adequacy Test are shown in Table 3.

Table 3:
Capital Adequacy ratio (%), Capital Adequacy Tier 1 ratio (%) and Overall Analysis of Capital Adequacy Test

Bank	Ratio	2015	2016	2017	2018	2019	Mean	Rank of Means (I)	Avg of Rank (I/2)	Rank of Avg-of-Rank
Allahabad bank	Total Capital Adequacy ratio (%)	10.45	11.02	11.45	8.69	12.59	10.84	12	12.5	12
	Capital Adequacy Tier-1 (%)	7.71	8.41	8.49	6.69	9.75	8.21	13		
Andhra Bank	Total Capital	10.63	11.58	12.38	11.00	13.68	11.85	6	7	6

	Adequacy ratio (%)								
	Capital Adequacy Tier-1	7.99	8.81	9.17	7.44	10.38	8.76	8		
BOB	Total Capital Adequacy ratio (%)	13.07	13.17	12.24	12.13	13.42	12.81	2	2	2
	Capital Adequacy Tier-1 (%)	10.35	10.79	9.93	10.46	11.55	10.62	2		
Corporation Bank	Total Capital Adequacy ratio (%)	11.09	10.56	8.90	9.23	12.30	10.90	11	10.75	11
	Capital Adequacy Tier-1 (%)	8.05	7.93	8.90	7.27	10.52	8.53	10.5		
Canara Bank	Total Capital Adequacy ratio (%)	10.56	11.08	12.86	13.22	11.90	11.92	5	4.5	4
	Capital Adequacy Tier-1 (%)	8.02	8.80	9.77	10.30	9.04	9.19	4		
DENA Bank	Total Capital Adequacy ratio (%)	10.93	11.00	11.39	11.09	*	11.10	10	10.25	10
	Capital Adequacy Tier-1 (%)	7.67	8.59	9.05	8.81	*	8.53	10.5		
Indian Bank	Total Capital Adequacy ratio (%)	12.86	13.20	13.87	12.76	13.46	13.23	1	1	1
	Capital Adequacy Tier-1 (%)	10.61	12.08	12.43	11.54	11.22	11.58	1		
Oriental Bank of Commerce	Total Capital Adequacy ratio (%)	11.41	11.76	11.64	10.50	12.73	11.61	7	7	6
	Capital Adequacy Tier-1 (%)	8.73	9.10	8.88	7.61	9.98	8.86	7		
PNB	Total Capital Adequacy ratio (%)	12.21	11.28	11.66	9.20	9.73	10.82	13	12.5	12
	Capital Adequacy Tier-1 (%)	9.30	8.41	8.91	7.12	7.49	8.25	12		
Syndicate Bank	Total Capital Adequacy	10.54	11.16	12.03	12.24	14.23	12.04	4	4.5	4

	ratio (%)									
	Capital Adequacy Tier-1 (%)	7.84	7.75	9.26	9.41	11.36	9.12	5		
Union Bank	Total Capital Adequacy ratio (%)	10.22	10.56	11.79	11.46	11.78	11.16	9	9	9
	Capital Adequacy Tier-1 (%)	7.50	8.14	9.02	9.03	9.48	8.63	9		
United Bank of India	Total Capital Adequacy ratio (%)	10.57	10.08	11.14	12.62	13.00	11.48	8	7	6
	Capital Adequacy Tier-1 (%)	7.52	7.93	8.94	9.87	10.14	8.88	6		
Vijaya Bank	Total Capital Adequacy ratio (%)	11.43	12.58	12.73	13.90	*	12.66	3	3	3
	Capital Adequacy Tier-1 (%)	8.24	9.45	9.96	11.71	*	9.84	3		

(*Source*: *Annual Reports of Banks from respective Bank's Website*) *(* data of Vijaya Bank and DENA Bank for the year 2019 could not be taken separately due to Merger with Bank of Baroda)*

Analysis:

The higher the CAR ratio, the better is the capacity of the banks to pay of its obligations and safety against bankruptcy. From Table 3, it is evident that Indian Bank has the highest Capital Adequacy Ratio with average (score) rank 1 for all parameters which is followed by Bank of Baroda securing the second position and Vijaya Bank at third position while the lowest rank is scored by Allahabad Bank and Punjab National Bank.

Findings:

1. Indian bank and BOB have a high CAR i.e., they have more than 12% CAR in each year from 2015 to 2019 which is a good sign for the safety of its depositors, creditors, investors, etc.

2. Vijaya Bank and Syndicate Bank show an increasing trend in CAR from 2015 to 2019 maintaining at 3rd and 4th rank respectively, while PNB shows a decreasing trend in CAR making itself at the last position in the Table.

6.2 Assets Quality Test (A)

It is one of the most critical factors in determining overall condition of any bank. Primary factors that can be considered are the quality of loan portfolio, mix of risk assets and credit administration system.

The prime motto behind measuring the asset quality is to ascertain the component of non-performing assets as a percentage of Net Advances and Returns on Assets (ROA). The ratios necessary to understand the asset quality of the banks are the following:

1. Return on Assets Ratio
2. Net NPA to Net Advances Ratio

6.2.1 Return on Assets Ratio

Higher Return on Assets means greater returns earned on assets deployed by the bank. This ratio measures the return on assets employed or efficiency in utilization of the assets. This ratio measures the ability of the company that how well management utilizes the organization's assets and also measure the effectiveness of the establishment in generating Profits. Return on Assets (ROA) is a Profitability Ratio.

Return on Assets = (Net Profit + Interest paid to lenders and depositors –Tax advantage on interest paid) / Total Assets... (3)

6.2.2 Net NPAs to Net Advances Ratio

An asset becomes Non-performing when it ceases to generate income for the bank. Net NPAs reflect the performance of banks. A high level of NPAs suggests high probability of a large number of credit defaults that affect both profitability and net-worth of banks.

Loans and advances usually represent the largest asset segment of most of the banks. It monitors the quality of the bank's loan portfolio. This ratio represents how much of net advances are contributing to bank's NPA.

Net NPA = Gross NPA-(balance in interest suspense account + DICGC/ECGC claims received and held pending adjustment +part payment received and kept in suspense account + total provisions held)……….(4)

Return on Assets Ratio, Net NPA to Net Advances Ratio and Analysis of Asset Quality Test is shown in Table 4.

Table 4:
Return on Assets Ratio (%), Net NPAs to net advances (%) and Overall Analysis of Asset Quality Test

Bank	Ratio	2015	2016	2017	2018	2019	Mean (%)	Rank of Means (I)	Avg of Rank (I/2)	Rank of Avg-of-Rank
Allahabad bank	Return on Assets (%)	0.29	-0.33	-0.13	-1.96	-3.48	-1.12	13	10.5	10
	Net NPAs to Net Advances (%)	3.99	6.76	8.92	8.04	5.22	6.59	8		
Andhra Bank	Return on	0.38	0.28	0.08	-1.46	-1.09	-0.36	6.5	6.25	7

	Assets (%)									
	Net NPAs to Net Advances (%)	2.93	4.61	7.57	8.48	5.73	5.86	6		
BOB	Return on Assets (%)	0.49	-.078	0.20	0.34	0.06	-0.074	3	3	3
	Net NPAs to Net Advances (%)	1.87	5.06	4.72	5.49	3.33	4.09	3		
Corporation Bank	Return on Assets (%)	0.28	-0.23	0.23	-1.67	-3.14	-0.91	12	10.75	11
	Net NPAs to Net Advances (%)	3.08	6.53	8.33	11.74	5.71	7.08	9.5		
Canara Bank	Return on Assets (%)	0.55	-0.52	0.20	-0.75	0.06	-0.092	4	4.5	4
	Net NPAs to Net Advances (%)	2.67	6.42	6.33	7.48	5.37	5.65	5		
DENA Bank	Return on Assets (%)	0.22	-0.75	-0.67	-1.59	*	-0.70	11	11.5	12
	Net NPAs to Net Advances	3.82	6.35	10.66	11.95	*	8.20	12		
Indian Bank	Return on Assets (%)	0.54	0.36	0.67	0.53	0.12	0.44	1	1	1
	Net NPAs to Net Advances (%)	2.50	4.20	4.39	3.81	3.75	3.73	1		
Oriental Bank of Commerce	Return on Assets (%)	0.23	0.07	-0.46	-2.31	0.02	-0.49	9	9.25	9
	Net NPAs to Net Advances (%)	3.34	6.70	8.96	10.48	5.93	7.08	9.5		
PNB	Return on Assets (%)	0.53	-0.61	0.19	-1.60	-1.25	-0.55	8	9.5	8
	Net NPAs to Net Advances (%)	4.06	8.61	7.81	11.24	6.56	7.66	11		
Syndicate Bank	Return on Assets (%)	0.58	-0.56	0.12	-1.05	-0.87	-0.36	6.5	5.25	5
	Net NPAs to Net Advances	1.90	4.48	5.21	6.28	6.16	4.81	4		
Union Bank	Return on Assets (%)	0.49	0.35	0.13	-1.07	-0.59	-0.14	5	6	6
	Net NPAs to Net Advances (%)	2.71	5.25	6.57	8.40	6.85	5.90	7		
United Bank of India	Return on Assets (%)	0.21	-0.22	0.16	-1.04	-1.60	-0.50	10	11.5	12

	Net NPAs to Net Advances (%)	**6.22**	**9.04**	**10.02**	**16.49**	**8.67**	**10.09**	**13**		
Vijaya Bank	**Return on Assets (%)**	**0.94**	**0.28**	**0.49**	**0.44**	*****	**0.39**	**2**	**2**	**2**
	Net NPAs to Net Advances (%)	**1.92**	**4.81**	**4.36**	**4.32**	*****	**3.85**	**2**		

(*Source*: *Annual Reports of Banks from respective Bank's Website) (* data of Vijaya Bank and DENA Bank for the year 2019 could not be taken separately due to Merger with Bank of Baroda)*

Analysis:

It is evident from Table 4 for the Asset Quality Parameters that Indian Bank is having highest Assets Quality Norms with Average score of 1 which is followed by Vijaya Bank with average score of 2 & Bank of Baroda with 3 Average score, while Canara Bank stood at 4th position due to its poor performance in Net NPAs to Net Advances ratio.

Findings:

1. Indian Bank and Vijaya Bank show a positive Return on Assets Ratio for the period from 2015 to 2019.
2. BOB has a negative ROA in the year 2016.
3. Canara Bank has a negative ROA for the year 2016 and 2018.
4. Andhra Bank, Corporation Bank, PNB, Syndicate Bank, Union Bank and United Bank have started generating negative ROA from 2018 onwards, while Allahabad Bank has a long period of negative returns from 2016 onwards.
5. Net NPAs to Net Advances of every Bank has been increasing over the period of study from 2015 to 2019 which is really a concern for the Banks.

6.3 Management Efficiency Test (M)

The Management component of the CAMEL rating reflects the Governance capability of the board of directors and management, and their respective roles. Therefore, Management efficiency is the most crucial part which requires to be monitored to identify, measure, monitor, and control the risks involved in the operating and management activities and to ensure the safety of its operations with all compliance to applicable laws and regulations.

However, in this study in evaluating the management efficiency two ratios only have been used:

1. Profit per Employee
2. Business per Employee

6.3.1 Profit per Employee

Profit per employee is a measure of Net Income for the past twelve months divided by the current number of full time employees. This ratio is used to compare companies within the same industry. It is used to measure bank's profitability i.e., how much banks generate profit per employee.

6.3.2 Business per Employee

Business per employee is a measure of how efficiently a particular bank is utilizing their employees. Ideally, a bank wants the highest business per employee possible, as it denotes higher productivity. In general, rising revenue per employee is a positive sign that suggests the bank is finding ways to squeeze more sales/revenues out of each of its employee. Business per employee is used as a tool to measure the efficiency of employees of a bank in generating business for the bank.

Profit per Employee, Business per Employee and Analysis of the Management Efficiency Test is shown in Table 5.

Table 5:
Profit per Employee (₹ in Lakhs), Business per Employee (₹ in Lakhs) and Overall Analysis of Management Effectiveness Test

Bank	Ratio	2015	2016	2017	2018	2019	Mean (₹ in Lakhs)	Rank of Means (I)	Avg of Rank (I/2)	Rank of Avg-of-Rank
Allahabad bank	Profit per Employee (₹ in Lakhs)	2.56	-3.08	-1.30	-19.50	-35.90	-11.44	13	10	12
	Business per Employee (₹ in Lakhs)	1430	1485	1503	1586	1628	1526.40	7		
Andhra Bank	Profit per Employee (₹ in Lakhs)	3.40	3.00	1.00	-17.00	-14.00	-4.72	9	6	4
	Business per Employee (₹ in Lakhs)	1536	1665	1752	1870	1958	1756.20	3		
BOB	Profit per Employee (₹ in Lakhs)	7.00	-10.00	26.00	-4.00	8.00	5.40	3	2.5	1
	Business per Employee (₹ in Lakhs)	1889	1680	1749	1766	1888	1794.40	2		
Corporation Bank	Profit per Employee (₹ in Lakhs)	3.00	-3.00	3.00	22.00	-36.00	-11.00	12	6.5	5
	Business per Employee (₹ in Lakhs)	1914	1879	1958	1663	1720	1826.80	1		
Canara Bank	Profit per Employee (₹ in Lakhs)	5.00	-5.00	2.00	-7.00	1.00	-0.8	7	7.5	8
	Business per	1435.0	1444.6	1442.7	1480.54	1706.8	1501.96	8		

	Employee (₹ in Lakhs)	2	2	9		1				
DENA Bank	Profit per Employee (₹ in Lakhs)	1.95	-6.73	-6.18	-14.13	*	-6.27	11	11	13
	Business per Employee (₹ in Lakhs)	1442	1462	1369	1325	*	1399.50	11		
Indian Bank	Profit per Employee (₹ in Lakhs)	4.95	3.53	6.72	6.34	1.64	4.64	4	4.5	3
	Business per Employee (₹ in Lakhs)	1443.40	1531.19	1487.73	1856.40	2174.26	1698.60	5		
Oriental Bank of Commerce	Profit per Employee (₹ in Lakhs)	2.46	0.73	-5.08	-26.72	0.25	-5.67	10	7	6
	Business per Employee (₹ in Lakhs)	1742.52	1688.73	1789.98	1618.13	1860.16	1740	4		
PNB	Profit per Employee (₹ in Lakhs)	0.05	-6.00	2.00	2.08	1.52	-0.07	6	7.5	8
	Business per Employee (₹ in Lakhs)	1319	1359	1417	1473	1680	1449.60	9		
Syndicate Bank	Profit per Employee (₹ in Lakhs)	5.55	-5.51	1.10	9.92	-8.20	-3.40	8	9	10
	Business per Employee (₹ in Lakhs)	1539	1461	1351	1439	1427	1443.40	10		
Union Bank	Profit per Employee (₹ in Lakhs)	5.00	32.00	13.00	-14.00	-8.00	5.60	1	3.5	2
	Business per Employee (₹ in Lakhs)	1450	1550	1640	1783	1879	1660.40	6		
United Bank of India	Profit per Employee (₹ in Lakhs)	1.69	-1.88	10.38	6.91	10.23	5.47	2	7	6
	Business per Employee (₹ in Lakhs)	1151	1237	1304	1322	1496	1302	12		
Vijaya Bank	Profit per Employee (₹ in Lakhs)	3.00	3.00	5.00	5.00	*	4.00	5	9	10
	Business per Employee (₹ in Lakhs)	1496	1457	1417	1810	*	1236	13		

(*Source*: *Annual Reports of Banks from respective Bank's Website*) *(* data of Vijaya Bank and DENA Bank for the year 2019 could not be taken separately due to Merger with Bank of Baroda)*

Analysis:

From Table 5, it is evident that highest Management Efficiency Test rank is of Bank of Baroda with average score of 2.5 (rank1) due to its good performance in all the two calculated ratios, followed by Union Bank & Indian Bank with rank of 2 & 3 respectively. While Andhra Bank and Corporation Bank rank 4th and 5th respectively, DENA Bank scored the lowest position with rank 13 due to its poor performance in the two calculated ratios.

Findings:

1. Allahabad Bank and DENA Bank have negative Profit per Employee from 2016 onwards.
2. Only Indian Bank and Vijaya Bank have a positive Profit per Employee over the period from 2015 to 2019.
3. Allahabad Bank and Corporation Bank have a high negative Profit per Employee in the year 2019 which is not a good sign for the performance of the bank.
4. Though Corporation Bank ranks at 5, the highest Business per Employee has been achieved by the Bank with a mean of ₹1826.80 lakhs which shows good performance by the bank, business-wise.

6.4 Earnings Quality Test (E)

It is one of the important performance indicators used in CAMEL Model. It mainly focuses on the Bank's income that is earned through non-core activities like corporate advisory services, investment treasury operations, customer based services, loans, etc. In this section we try to assess the quality of income in terms of income generated by core activity-income from lending operations.

To analyze and evaluate the earnings quality we have taken two ratios:

1. Non-interest Income to Working Funds
2. Operating Profit to Working Funds

6.4.1 Non-interest Income to Working Funds

For a bank, interest represents operating part of income while other than the interest income, there are incomes such as deposit and transaction fees, insufficient funds fees, annual fees, ATM charges, inactivity fees, Cheques and deposit slip fees, monthly account service charges, and so on, these are the incomes which represents non-interest incomes. Banks heavily depend on non-interest income when the interest rates are low. This ratio indicates the Non-Interest Income that the Bank earns on its Working Funds.

6.4.2 Operating Profit to Working Funds

This ratio indicates how much a bank can earn from its operations net of operating expenses for every rupee spent on Working Funds. Thus, this ratio will indicate how a bank has employed its Working Funds in generating profit.

Non-Interest to Working Funds Ratio, Operating Profit to Working funds Ratio and Analysis of the Earnings Quality Test are shown in Table 6.

Table 6:
Non-interest Income to Working Funds ratio (%), Operating Profit to Working Funds ratio (%) and Overall Analysis of Earning Quality Test

Bank	Ratio	2015	2016	2017	2018	2019	Mean	Rank of Means (I)	Avg of Rank (I/2)	Rank of Avg-of-Rank
Allahabad bank	Non-interest Income to Working Funds (%)	0.93	0.86	1.13	1.13	0.71	0.95	6	6	7
	Operating Profit to Working Funds (%)	2.09	1.86	1.66	1.44	1.15	1.64	6		
Andhra Bank	Non-interest Income to Working Funds (%)	0.88	0.82	1.07	1.02	0.80	0.92	8	4.5	3
	Operating Profit to Working Funds (%)	1.94	2.08	2.04	2.30	1.97	2.07	1		
BOB	Non-interest Income to Working Funds (%)	0.92	0.90	1.34	1.24	1.07	0.85	11	9	10
	Operating Profit to Working Funds (%)	1.41	1.32	1.58	1.70	1.72	1.63	7		
Corporation Bank	Non-interest Income to Working Funds (%)	0.70	0.79	1.29	0.95	0.93	0.932	7	5.75	4
	Operating Profit to Working Funds (%)	1.44	1.41	1.85	1.62	1.93	1.65	4.5		
Canara Bank	Non-interest Income to Working Funds (%)	0.92	0.90	1.34	1.24	1.07	1.09	2.5	5.75	4
	Operating Profit to Working Funds (%)	1.41	1.32	1.58	1.70	1.72	1.55	9		
DENA Bank	Non-interest Income to Working Funds (%)	0.60	0.70	1.00	1.00	-	0.83	13	13	13
	Operating Profit to Working	1.10	0.70	1.10	1.00	-	0.98	13		

	Funds (%)									
Indian Bank	Non-interest Income to Working Funds (%)	0.74	0.89	1.06	1.02	0.72	0.89	9.5	5.75	4
	Operating Profit to Working Funds(%)	1.63	1.52	1.91	2.12	1.86	1.81	2		
Oriental Bank of Commerce	Non-interest Income to Working Funds (%)	0.98	0.77	1.15	1.09	1.06	1.01	4	4.25	2
	Operating Profit to Working Funds (%)	1.95	1.61	1.73	1.46	1.49	1.65	4.5		
PNB	Non-interest Income to Working Funds (%)	1.02	1.06	1.28	1.16	0.93	1.09	2.5	2.75	1
	Operating Profit to Working Funds (%)	2.06	1.88	2.08	1.34	1.63	1.80	3		
Syndicate Bank	Non-interest Income to Working Funds (%)	0.80	0.86	1.14	0.91	0.74	0.89	9.5	10.75	11
	Operating Profit to Working Funds(%)	1.52	1.14	1.40	1.25	0.94	1.25	12		
Union Bank	Non-interest Income to Working Funds (%)	0.97	0.90	1.20	1.02	0.90	1.00	5	6.5	9
	Operating Profit to Working Funds (%)	1.61	1.50	1.70	1.56	1.51	1.58	8		
United Bank of India	Non-interest Income to Working Funds (%)	1.42	1.17	1.63	1.58	1.65	1.49	1	6	7
	Operating Profit to Working Funds (%)	1.99	1.44	1.16	0.73	0.97	1.26	11		
Vijaya Bank	Non-interest Income to Working Funds (%)	0.66	0.63	1.09	0.98	-	0.84	12	11	12
	Operating Profit to Working Funds (%)	0.94	1.12	1.59	1.89	-	1.39	10		

(Source: *Annual Reports of Banks from respective Bank's Website*) *(* data of Vijaya Bank and DENA Bank for the year 2019 could not be taken separately due to Merger with Bank of Baroda)*

Analysis:

From Table 6, it is evident that highest Earning Quality Test rank is of PNB with average score of 1 due to its good score in all calculated ratio, followed by OBC with average score of 2, while lowest average rank is shown by DENA Bank.

Findings:

1. Allahabad Bank has a decreasing trend in Operating profit to Working Funds ratio which shows that working funds are not utilized effectively to earn operating profits.
2. Vijaya Bank has an increasing trend in Operating profit to Working Funds ratio which is a good sign for the performance of the bank.
3. Though PNB has rank 1, it has a fluctuating trend in earning Non Interest Income and Operating Profit for the period from 2015 to 2019.
4. From Table 6, it is evident that Banks should try to increase their Non-Interest Income for better performance.

6.5 Liquidity Test (L)

It is an evaluation of the bank's ability to meet its present and future cash flow needs. Liquidity risk is the risk of not being able to efficiently meet present and future cash flow needs without adversely affecting daily operations. It also encompasses poor management of excess funds. A sufficient liquidity position refers to a situation, where financial organization can obtain adequate funds, either by increasing liabilities or by exchanging its assets rapidly at a reasonable cost. It is generally assessed in terms of overall assets and liability management, as mismatching gives rise to liquidity risk.

1. Cash to Total Assets ratio
2. Investment to Total Assets ratio

6.5.1 Cash to Total Assets Ratio

This measures the portion of company's assets in the form of cash and short-term investments. It is more commonly used to analyze funds and investment trusts. It measures the portion of a company's assets held in cash or marketable securities. A high ratio indicates higher margin of safety from the perspective of depositors/lenders.

6.5.2 Investment to Total Assets Ratio

This ratio represents the percentage of total assets held as investment by the bank. The higher the investment the more it is expected to bring higher returns for the organization. Hence the banks with a higher ratio are considered to be in a better liquidity position, thereby, providing more security to the lenders and depositors.

Cash to Total Assets Ratio, Investment to Total Assets Ratio and Analysis of the Liquidity Test is shown in Table 7.

Table 7 :
Cash to Total Assets, Investment to Total Assets and Overall Analysis of Liquidity Test

Bank	Ratio	2015	2016	2017	2018	2019	Mean	Rank of Means (I)	Avg of Rank (I/2)	Rank of Avg-of-Rank
Allahabad bank	Cash to Total Assets (%)	4.25	3.95	3.62	3.68	3.89	3.88	8	8	7
	Investment to Total Assets (%)	24.21	23.83	23.26	26.79	32.00	26.02	8		
Andhra Bank	Cash to Total Assets (%)	0.36	0.44	0.43	0.47	0.39	0.42	13	10	12
	Investment to Total Assets (%)	15.11	27.08	27.07	26.74	25.25	26.25	7		
BOB	Cash to Total Assets (%)	3.15	3.23	3.28	3.15	3.37	3.24	12	12.5	13
	Investment to Total Assets (%)	17.11	17.94	18.66	22.66	23.05	19.88	13		
Corporation Bank	Cash to Total Assets (%)	4.49	4.29	7.06	5.02	4.52	5.08	2	3.5	3
	Investment to Total Assets (%)	23.58	26.94	25.85	31.71	28.10	27.24	5		
Canara Bank	Cash to Total Assets (%)	3.93	3.67	3.34	3.50	4.20	3.73	10	9.5	11
	Investment to Total Assets (%)	27.23	27.05	27.19	24.93	23.70	26.02	9		
DENA Bank	Cash to Total Assets (%)	7.44	4.03	4.83	4.92	-	5.31	1	1.5	1
	Investment to Total Assets (%)	25.19	26.37	30.64	31.08	-	28.32	2		
Indian Bank	Cash to Total Assets (%)	4.30	4.50	2.56	4.16	4.18	3.94	6	6	4
	Investment to Total Assets (%)	23.71	26.06	30.95	28.25	23.21	26.44	6		
Oriental Bank of Commerce	Cash to Total Assets (%)	0.25	3.97	4.27	5.25	4.12	3.57	11	7	6
	Investment to Total Assets (%)	29.69	27.64	23.40	29.9	29.15	27.97	3		
PNB	Cash to Total	4.02	3.97	3.50	3.76	4.15	3.89	7	8.5	10

	Assets (%)									
	Investment to Total Assets (%)	**24.84**	**23.65**	**25.92**	**26.16**	**26.08**	**25.33**	**10**		
Syndicate Bank	**Cash to Total Assets (%)**	**3.95**	**4.33**	**4.38**	**3.61**	**4.37**	**4.13**	**4**	**8**	**7**
	Investment to Total Assets (%)	**22.87**	**22.28**	**21.89**	**24.80**	**24.44**	**23.26**	**12**		
Union Bank	**Cash to Total Assets (%)**	**3.95**	**3.86**	**3.65**	**4.31**	**4.21**	**4.00**	**5**	**8**	**7**
	Investment to Total Assets (%)	**22.13**	**22.04**	**24.77**	**25.40**	**25.51**	**23.97**	**11**		
United Bank of India	**Cash to Total Assets (%)**	**4.73**	**4.69**	**4.70**	**4.29**	**4.07**	**4.50**	**3**	**2**	**2**
	Investment to Total Assets (%)	**35.15**	**34.55**	**37.60**	**34.82**	**40.24**	**36.47**	**1**		
Vijaya Bank	**Cash to Total Assets (%)**	**4.58**	**4.31**	**3.73**	**2.42**	**-**	**3.76**	**9**	**6.5**	**5**
	Investment to Total Assets (%)	**31.21**	**28.78**	**28.68**	**22.24**	**-**	**27.73**	**4**		

(*Source*: *Annual Reports of Banks from respective Bank's Website*) *(* data of Vijaya Bank and DENA Bank for the year 2019 could not be taken separately due to Merger with Bank of Baroda)*

Analysis:

From Table 7, it is evident that highest Liquidity Test rank is of DENA Bank with average rank score of 1.5 for all the parameters of Liquidity test which is followed by United Bank of India with average rank with 2 while lowest average rank is shown by BOB with average rank 13.

Findings:

1. Andhra Bank has low Cash to Total Assets ratio which indicates a lesser safety to its creditors.
2. BOB has a low Investment to Total Assets ratio compared to other banks. More Investment should be proposed by BOB, while United Bank of India has the highest Investments to Total Assets ratio compared to other banks in the Table.

7. Overall Camel Rank Test

An overall ranking has been done on the basis of each of the parameters of CAMEL framework i.e., Capital adequacy, Asset quality, Management efficiency, Earnings quality, and Liquidity test which is shown in Table 8. The ranks of selected 13 Public sector banks under each parameter of CAMEL framework have been arranged in Table 8 and based on the rankings, the average score have been calculated as shown in column AVG and final ranks have been allotted based on the lowest average score as shown in the Table 8.

Table 8: Overall Camel Rank Test

NAME OF BANK	CAPITAL ADEQUACY TEST	ASSET QUALITY TEST	MANAGEMENT EFFICIENCY TEST	EARNING QUALITY TEST	LIQUIDITY TEST	TOTAL (I)	AVG (I/5)	RANK
Allahabad bank	12	10	12	7	7	48	9.6	12
Andhra Bank	6	7	4	3	12	32	6.4	5
BOB	2	3	1	10	13	29	5.8	2
Corporation Bank	11	11	5	4	3	34	6.8	9
Canara Bank	4	4	8	4	11	31	6.2	4
DENA Bank	10	12	13	13	1	49	9.8	13
Indian Bank	1	1	3	4	4	13	2.6	1
OBC	6	9	6	2	6	29	5.8	2
PNB	12	8	8	1	10	39	7.8	11
Syndicate Bank	4	5	10	11	7	37	7.4	10
Union Bank of India	9	6	2	9	7	33	6.6	7
United Bank of India	6	12	6	7	2	33	6.6	7
Vijaya Bank	3	2	10	12	5	32	6.4	5

Analysis:

From Table 8, it can be analyzed that Indian bank ranks 1 (based on average score of Ranks) and BOB and OBC both secure second position with an average score of 5.8 on overall CAMEL ranking. In operational terms Indian Bank, BOB and OBC have emerged as better managed banks compared to other banks, based on CAMEL framework (i.e., based on parameters of Capital Adequacy, Asset Quality, Management effectiveness, Earnings Capability and Liquidity). DENA Bank has ranked 13th on overall CAMEL rating model, though it stands at rank 1 in Liquidity test which shows the bank has high cash and investment for the safety of its stakeholders but fails to show good performance with respect to profitability.

Suggestions and Recommendations

1) Allahabad Bank being at 12th position will merge with Indian Bank which stands at rank 1 in the above study using CAMEL model and therefore Indian Bank will have to put more efforts (Allahabad bank being one of the weakest performing bank in the list) after the merger to stand at the same position and continue its smooth performance.

2) OBC and United Bank of India will merge with PNB and form the second largest Bank after SBI. PNB will have to efficiently utilize the resources as well as more efforts to be put to match all the parameters with OBC and United Bank of India.

3) Canara Bank and Syndicate Bank have been merged and from Table 8, we can see that both are close in the ranks in terms of Capital Adequacy Test, Asset Quality test, and Management Effectiveness Test but efforts will be required to bring the parity in Earnings and Liquidity.

4) DENA Bank and Vijaya Bank have been merged with BOB. DENA Bank stands at last place in Table 8. BOB will have to make efforts to bring DENA Bank's Capital Adequacy, Asset Quality and Management Effectiveness in parity with itself and Vijaya Bank, while BOB itself has to find the ways to improve its Earnings and Liquidity.

5) Andhra Bank and Corporation Bank have been merged with Union Bank of India. Efforts will have to be made to improve in all the parameters of CAMEL Model.

6) From the study it is observed that weaker banks are merged with stronger banks, so the responsibility increases for the anchor banks to monitor and work on the deficiencies of the amalgamating banks and this study will provide necessary information to the banks which will guide them to work on the weak areas as highlighted by the parameters of CAMEL framework.

7) A post performance of banks after merger can be done to analyze the pre and post merger performance of banks in the Indian banking sector.

Concluding Observations

This study evaluated the financial performance of selected 13 Public sector banks of the Indian banking system and highlighting the factors that affect the financial performance of the banks. The study uses the CAMEL framework to examine the relationship between CAMEL variables and bank performance in India. This framework is known to be one of the best techniques for evaluating the performance of bank. The study highlighted that, the banks in the list have obtained different ranks with respect to

CAMEL framework (i.e., based on parameters of Capital Adequacy, Asset Quality, Management effectiveness, Earnings Capability and Liquidity) highlighting the strong areas and weaker areas of the bank. The study also provided suggestions and recommendations highlighting the critical areas of improvement for better performance of banks in the long run. The merger of banks is indeed a very strong approach for fast growth of the country. Through the merger larger banks will be created which will have the capability to face the global competition, risk management, a stronger hold in the market share and will also enhance the capacity to increase credit, reduce the lending cost, achievement towards technology, higher ability to raise resources from market, strong National presence and International reach.

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RURAL HOUSEHOLD EMISSION AND ITS DETERMINANTS: A CASE STUDY

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Abstract:

Household emission is measured in terms of Per Capita Carbon Footprint. Per Capita Carbon Footprint in India (1.8 tCo_2e) is far low than that in other developed countries as well as the world average (5 tCo_2e). But growth rate of per capita carbon footprint in India (229%) is second after China (333%). Again, there is a significant difference between per capita carbon footprints of rural and urban households. In this backdrop, we set the objectives of our paper as (i) to measure the household carbon footprint, and (ii) to identify the determinants of the carbon footprint, both for the rural and urban households. It is found that per capita carbon footprint of rural household is 0.78524 tCO_2e and that of urban household is 0.760552 tCO_2e. We also found a significant positive and negative relationship between the Per Capita Carbon Footprint and some specific selected household factors.

Key Words:

Carbon Footprint, Green House Gases (GHGs), Household Emission

Introduction: A large part of the total Green House Gases (GHGs) comes from the household sector. Household emission is measured in terms of Per Capita Carbon Footprint. **Carbon Footprint (CF)** is defined as total amount of greenhouse gases produced directly and indirectly by any individual from his / her activities and it is expressed in equivalent tons of carbon dioxide (CO_2e). Presently, Per Capita Carbon Footprint in India (1.8 tCo_2e) is far low than that in other developed countries (e.g. 17.3 tCo_2e in Australia) and the world average (5 tCo_2e). But growth rate of per capita carbon footprint in India (229%) is second after China (333%) and India is placed in 4^{th} position (after China, USA and EU-28) in terms of total CO_2 production (the main component of GHGs). Presently, some developed countries having high per capita carbon footprint have achieved a negative growth rate (Ukraine: - 63%, UK: -35%, EU-28 - 27%, Germany: -26%). In this backdrop, it is important to reduce the total CO_2 emission from the atmosphere and to a great extent it may be possible through the reduction of emission at household level. Before taking the emission control or reduction policies, the households should have the idea about their present emission level and also about the factors that have significant impact on their per capita emission or carbon footprint. In this background, our objectives are to measure the existing per capita carbon footprint of the rural and urban households and to determine the factors that have significant impact on the per capita carbon footprint. It is observed from the different past studies that there is a significant difference between per capita carbon footprint of rural and urban households in India as well as in the World; but it is observed in this study that there is no significant difference between these two. It is also observed that different household activities have different impact on per capita carbon footprint.

Literature Review

Leach (1987): The author conducted a study in South Asia to identify the key factors having direct impact on household energy consumption. On the basis of the data analysis, he concluded that household income, residential size, household size, prices of energy, and efficiency-use of equipment had a direct impact on household energy consumption.

Reddy (2004): The objectives of that study were to identify the impact of socio-economic variables (like income, occupation, education, location, etc.) on household energy consumption and effects of energy efficiency on energy consumption based on NSSO data (1983-2000). He found that there was a huge variation in use of energy according to the income class, level of education, occupation of the household, and the location of the household. He concluded that middle and lower income group of households in the rural areas and lower income group of households in the urban areas made maximum use of biomass fuels. Higher income group of people used more clean energy. He also concluded that efficient uses of energy could reduce energy uses by 20 to 50% just by technological intervention and fuel shifting.

Kavi Kumar and Viswanathan (2011): This study aimed at identifying the relationship between pollution and income in both rural and urban Indian households. They found that larger households tended to consume less amount of cooking fuel and consequently less indoor pollution; higher proportion of children in total family members showed negative correlation with the use of cooking fuel. They also found that households having larger proportion of agricultural residue and dung in their cooking fuel had larger pollution. Urban households naturally had more access to clean fuels than the rural households.

Deshmukh, Jinturkar, and Anwar (2014): The objectives of their study were to investigate into the determinants of fuel consumption at the rural households of Buldhana district of Maharashtra. They found that socio-economic variables, like, size of households, age of head of the households, education level of the family members, dwelling status, and income of the households laid an important role in choosing the fuel pattern. The study further revealed that larger size of households tended to use more traditional fuel because of easy availability and cheaper cost. On the other hand, older heads (of the households) and women-head preferred to use more traditional fuel. Households having own house used mostly mixed fuels while people having no permanent settlement tended to use traditional fuel. Higher income group people, either due to higher education level of the members or otherwise were found to use more modern fuels.

Dash (2014): The objectives in this study were to identify the main drivers of households' electricity consumption and also the energy consumption pattern specially in cooking activities in the rural and urban areas of Rourkela in Odisha. He found that price of the electricity, income of the households, climate condition, and size of the households were the main drivers of uses of electric devices in the households. He also concluded that main source of cooking fuel was electricity and about 93% of the households used electric heater for their cooking activities and only 7% used LPG in the urban areas; and in the rural areas, people used (in order of preference caused by many factors) wood (24%), charcoal, kerosene, and LPG.

Objectives of the study:

Based on the importance of household carbon footprint measurement to reduce / control emission and thereby reduce air pollution effectively, we have set the following objectives of the study:

(i) to measure the household carbon footprint, and
(ii) to identify the determinants of the carbon footprint, both for the rural and urban households.

Hypotheses of the study:

With the above two objectives in view, the following three hypotheses have been formulated in Null-Alternate form:

1. **Null Hypothesis (H_{01}):** All the selected household activities (food, electrification, cooking, transportation, and communication (mobile use) do not have the same impact on carbon footprint.

   Alternative Hypothesis (H_{11}): All the selected household activities (food, electrification, cooking, transportation, and communication (mobile use) do have the same impact on carbon footprint.

2. **Null Hypothesis (H_{02}):** Per capita carbon footprints of the households in rural areas do not differ significantly from those in urban areas.

   Alternative Hypothesis (H_{12}): Per capita carbon footprints of the households in rural areas differ significantly from those in urban areas.

3. **Null Hypothesis (H_{03}):** Carbon footprint is indifferent of different demographic and socio-economic factors of households.
   Alternative Hypothesis (H_{13}): Carbon footprint depends on different demographic and socio economic factors of households.

Database and Research Methodology:

a. Study area:

We have chosen Paschim Medinipur district as the study area, purposively on the basis of convenience.

b. Study period

The study period of the research work spreads over two years from 2015 to 2016. Basically the primary data required for the research work have been collected over the stated period but the secondary data used for the study relates to a different period.

c. Sample design and size of sample:

Multi-stage stratified random sampling has been adopted for the study. Blocks and Municipalities of Paschim Medinipur district constitute our 1st stage sample units. We have chosen randomly (convenience as mentioned above) 6 out of 29 blocks and 2 of 8 municipalities and these selected blocks and municipalities constitute our 2nd stage units. Villages and Wards under the selected blocks and municipalities are the 3rd stage units. We have chosen 6 villages from each of the selected blocks, and 6 wards from each of the two municipalities so selected as 2nd stage units. In the last or 4th stage, we have selected 15 households each from the selected villages and wards as our ultimate sample units. In this ways our total sample units comes to 540 households (6 x 6 x 15) from blocks and 180 households (6 x 2 x 15) from municipalities. In this study we have considered the blocks as rural area and municipalities as urban area.

d. Sources of data

i) Sources of primary data

Primary data have been collected from the households of Paschim Medinipur district on the basis of a structured questionnaire and the households are selected on the basis of multistage stratified random sampling. Data regarding the following aspects have been collected from the households: Households' description, Family description, Energy profile of households, Food activities, Housing pattern, Clothing habits, and Households' assets profile.

ii) Sources of secondary data

Secondary data used in the research work have been basically collected from the Census of India 2011, National Sample Survey Organization (NSSO), United Nations Framework Convention on Climate Change (UNFCCC), Department for the Environment, Food and Rural Affairs (DEFRA), Intergovernmental Panel on Climate change (IPCC), and National Communication 2000. Census data have been used for the purpose of having an overview of Paschim Mediniur district and also of target sample blocks, municipalities, villages, and households.

e. Selection of variables:

Carbon footprint (CF) can be defined as the total amount of greenhouse gases produced directly and indirectly by any individual or organization from its activities and it is expressed in equivalent tons of carbon dioxide (CO_2e).

In this present study, we have tried to calculate households' Carbon Footprint based on GHG emissions occurred from different household activities by taking a sample of 540 rural and 180 urban households of Paschim Medinipur district. To measure the carbon footprint of households, we have taken Per Capita Carbon Footprint (PCFT) as a unit of measurement which is considered as a standard unit of measurement of carbon footprint worldwide. In this study, we have used Per Capita Carbon Footprint (PCFT) as dependent variable and the following as independent variables: ratio of Children and Senior Citizen in a particular family to total number of members in that family (CHLSC), Per Capita Private Transport (TRNSP), Traditional Cooking Fuels (TCF), status of access to Electricity by the household (ELECT), status of household access to Modern Cooking Fuel [MCF(LPG)], number of Family Members (FM), Gender of Head of the Family (GHOF), per capita Non-Vegetarian meals (NVEG), and per capita Income (Income).

f. Methodological and statistical tools:

We have calculated the household level carbon footprint applying the different carbon emission factors as available from different books, journals, and literatures of international environmental agencies.

To determine the relationship between dependent and independent variables both *correlation and regression analysis* have been used. On the basis of Pearson correlation coefficient, correlation matrices have been constructed, which have been used to understand the interrelationship between the dependent and independent variables as well as Multicollinearity among the independent variables. Regression analysis is the most important and reliable technique to identify the exact relationship between dependent and independent variables. *Ordinary least square method* has been used in this study. The model is specified by the regression equation as follows:

$$Y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \text{-----} + \beta_p x_p + \varepsilon_i$$

Where:

Y_i=Dependent variable
X_i=Independent variables, i=1 to p
β_0= Y intercept (a constant value)
β_1=Slope of Y with variable x_1 holding the variables x_2, x_3,----, x_p effects constant
β_p= Slope of Y with variable x_p holding all other variable effects constant
ε_i=Error term
i =i^{th} observations.

An implicit assumption of using the OLS estimation method is that the explanatory variables are not correlated with one another, i.e., existence of no Multicollinearity. If there is no relationship among the explanatory variables, they would be said to be orthogonal to one another. In other words, Multicollinearity means the existence of perfect or exact linear relationship among some or all explanatory variables of a regression model. It refers to the condition of the explanatory variables that are assumed to be non-stochastic. It is a feature of the sample, not of the population, and its degree can be measured in any particular sample.
For the following reasons the linear regression model assumes that there is no multicollinearity among the independent variables (Gujarati, 2004):

- If multicollinearity is perfect, the regression coefficients of the independent variables are indeterminate and their standard errors are infinite.

- If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy.

In this study, we have constructed correlation matrix and calculated VIF (Variable Influence Factors) value for all independent variables to detect multicollinearity, if any.

The easiest way to measure the extent of multicollinearity is simply to look at the matrix of correlations between the individual variables. The purpose of correlation matrix is to examine the pair-wise correlations among the independent variables. In this study, we have considered partial correlation between the independent variables greater than 0.6, as very high and having the chances of multicollinearity.

The VIF is a measure of the effect of multicollinearity on the variance parameter estimates. High VIFs suggest the presence of a multicollinearity problem. In other words, VIF is an indicator of the effect that the other independent variables have on the standard error of a regression coefficient. VIF is given by 1/Tolerance. Large VIF values indicate a high degree of collinearity or muticollinearity. A VIF value of more than 10 is generally considered to be high. In this study, we have considered VIF greater than 2.5, as very high and having the chances of multicollinearity.

Following are the two models we have used in this study about the rural and urban households, to draw the conclusion:

Model 1: (For Rural households)

$\mathbf{PCFT_i} = \beta_0 + \beta_1(\text{CHLSC}) + \beta_2(\text{TRNSP}) + \beta_3(\text{TCF}) + \beta_4(\text{ELECT}) + \beta_5[\text{MCF(LPG)}] + \beta_6(\text{FM}) + \beta_7(\text{GHOF}) + \beta_8(\text{NVEG}) + \beta_9(\text{INCOME}) + \varepsilon_i$

Model 2: (For Urban households)

$\mathbf{PCFT_i} = \beta_0 + \beta_1(\text{CHLSC}) + \beta_2(\text{TRNSP}) + \beta_3(\text{NVEG}) + \beta_4(\text{TCF}) + \beta_5(\text{ELECT}) + \beta_6(\text{FM}) + \beta_7(\text{GHOF}) + \beta_8(\text{INCOME}) + \beta_9[\text{MCF(LPG)}] +\varepsilon_i$

Analysis and Findings of the data:

Per Capita Carbon Footprint of Different Household Activities:

Table no.1 (all the Tables are given at the end as annexure) shows the per capita carbon footprints of rural household activities in the study area. From the table it is observed that maximum amount of emission comes from cooking activities (44%) followed by transportation activities (19%), food activities (18%), electricity (15%), and communication (mobile) (4%) respectively.

Table no.2 shows the per capita carbon footprints of urban household activities in the study area. From the table, it is observed that maximum amount of emission comes from cooking activities (44%) followed by food activities (18%), transportation activities (17%), electricity (16%), and communication (mobile) (5%) respectively.

It is observed from the above findings that per capita carbon footprints for all types of household activities differ significantly and therefore **we accept our Null**

Hypothesis (H_{01}) and reject the alternative hypothesis (H_{11}). Thus we conclude that different household activities have different impact on PCFT.
It is also observed from table no. 1 that Per capita carbon footprint of rural households is 0.78524tCO_2e and from the table no. 2, Per capita carbon footprint of urban households is 0.760552tCO_2e and that the difference is only 0.024688tCO_2e which is insignificant. Therefore, we may conclude that there is no significant difference in PCFT of rural households and urban households and thus **we accept our Null hypothesis (H_{02}) and reject our alternative hypothesis (H_{12}).**

Determinants of Per Capita Carbon Footprint:

It is observed from the correlation matrix (Rural households) shown in **table no. 3** that TRNSP, TCF, MCF (LPG), NVEG, and INCOME are positively and significantly (at 1 per cent level) correlated with the PCFT. Again, CHLSC and FM are negatively and significantly (at 1 per cent level) correlated with PCFT while GHOF is also negatively and significantly correlated with PCFT but at 5 per cent level.

The correlation matrix (Urban households) as shown in **table no. 4** reveals that TRNSP, TCF, MCF (LPG), NVEG, and INCOME are positively and significantly (at 1 per cent level) correlated with the PCFT. Again, similar to rural households, while CHLSC and FM are negatively and significantly (at 1 per cent level) correlated with PCFT, GHOF is negatively and significantly (at 5 per cent level) correlated with PCFT.

From the **table no. 5,** it is observed that regression model relating to **rural households** is a good fit. The adjusted R^2 (0.774) and F (205.82***) of the model are fitted to the data set at 1 per cent level. It also satisfies that there is no multicollinearity among the explanatory variables.

The regression also confirms that the Per capita Carbon Footprint (PCFT) of rural households is negatively and significantly (at 10 per cent level) influenced by share of children and senior citizen (CHLSC) to total members in the family and PCFT is also negatively and significantly (at 1per cent level) influenced by number of family members (FM).

Again PCFT is positively and significantly (at 1 per cent level) influenced by Per Capita private transport (TRNSP), Per Capita traditional cooking fuels (TCF) and Per Capita Income (INCOME). PCFT is also positively and significantly (at 5 per cent level) influenced by accessibility of Modern cooking fuel MCF(LPG).

On the other hand, households' electricity access status (ELECT), Gender of the head of the family (GHOF), and per capita Non-vegetarian meals (NVEG) do not significantly explain per capita carbon footprint (PCFT).

The result is explained in the following ways. Increase in per capita travelling by private transport i.e. use of motor bike, motor car, etc. increases the per capita carbon footprint because of higher 'per kilometer emission intensity' of privately owned transport vehicles than that of public transport vehicles. In case of using public transport, sharing of emission is possible which is not available in case of private transport. In case of increase in per capita consumption of traditional cooking fuels, the per capita carbon footprint is also increased; for, these component items of fuels do have high emission potentiality. Again, increase in per capita income results in increase in consumption which in turn triggers more use of cooking fuels, increase in per capita private transport, etc.; all these result in increase in per capita carbon footprint. But, interestingly it is observed that access to modern cooking fuel (LPG) increases the per capita carbon footprint which is opposite to our common perception. It is observed that most of the households having LPG connection use LPG very rarely and they keep it as an additional facility to the traditional ones, to be used only occasionally but not as replacement to the traditional cooking fuels.

CHLSC has come out to have negative impact on PCFT which is also reverse of our common perception. It actually happens for rural households having children and senior citizens who do not take extra care even though they require it most during their old ages; it may be due to the rural life style they are used to. At the same time their per capita food consumption is reduced naturally, which results in reduction in use of cooking fuels. All these chain effects result in having a negative relation between CHLSC and PCFT. When number of family members increases, PCFT decreases for sharing benefits. Amount of food ingredients and of cooking fuel requirement decrease with the increase in the number of family members. Sharing of private transport is also possible with the increase in the number of family members. All these culminate into having a negative relation between FM and PCFT.

On the other hand, the access status of electricity, Gender of Head of the family (GHOF), and per capita non-vegetarian meals leave positive impact on PCFT but do not significantly explain the variation in PCFT.

From **the table no. 6** it is observed that regression model relating to **urban households** is also a good fit. The adjusted R^2 (0.862) and F(125.117***) of the model are fitted to the data set at 1 per cent level. It also satisfies that there is no multicollinearity among the explanatory variables.

The regression result also confirms that the Per Capita Carbon Footprint (PCFT) of urban households is negatively and significantly (at 10 per cent level) influenced by Gender of Head of the family (GHOF). PCFT is also negatively and significantly (at 1per cent level) influenced by number of family members (FM).

Again, PCFT is positively and significantly (at 1 per cent level) influenced by Per Capita Private Transport (TRNSP), Per Capita Traditional Cooking Fuels (TCF), and Per Capita Income (INCOME). PCFT is also positively and significantly (at 5 per cent level) influenced by Per capita Non-vegetarian meals (NVEG).

On the other hand, the variables like access to electricity (ELECT), Share of Children and Senior Citizen (CHLSC), and access to Modern Cooking Fuels [MCF (LPG)] do not significantly explain per capita carbon footprint (PCFT).

In case of urban households, Per capita Non-vegetarian meal has got a positive relationship with the PCFT. It happens due to higher emission intensity of non-veg. items like mutton, chicken, fish, and egg than those of vegetarian food items. In case of urban households, per capita income is higher than that of the rural households. It triggers more consumption of non-vegetarian items which result in more emission.

When number of family members increases, PCFT decreases for sharing benefits. Amount of food ingredients and cooking fuel requirement decrease with the increase in the number of family members. Sharing of private transport is also possible with increase in number of family members. All these result in having a negative relation between FM and PCFT. Again, relationship between GHOF and PCFT is also reverse to our common notion i.e. male member being HOF will have a positive relation with the PCFT. It actually happens for increased consciousness of HOF, as commonly perceived in male dominated civic society. It is observed in case of urban households that the education level of the HOF is much better than that of other members. This factor increases the consciousness about optimum utilization of resources which might have resulted in reduction of emission.

On the other hand, the households' access to electricity and to modern cooking fuel do have a positive impact on PCFT but could not significantly explain the variation in PCFT. Ratio of children and senior citizen members to total number of members (CHLSC) has a negative relationship with the PCFT but it fails to explain the variation in PCFT significantly.

From the correlation matrix and regression analysis it is observed that per capita carbon footprint is significantly influenced by different demographic and socio-economic factors and we may thus conclude that PCFT is dependent on different demographic and socio-economic variables. That way, **we reject our Null hypothesis (H_{03}) and accept our alternative hypothesis (H_{13}).**

Conclusion:

Keeping in view the above mentioned objectives of the study, the following conclusions can be drawn from the results of the study of sample households in the district of the Paschim Medinipur:

1. Average per capita carbon footprint of the sample households is far lower than the average per capita carbon footprint of India as well as the World.

2. Contribution of different types of household activities has got different impact on per capita carbon footprint. In all types of households, maximum amount of carbon footprint comes from the cooking activities for using more traditional cooking fuels like wood, cow dung cake, kerosene, etc.

3. Per capita carbon footprint is mainly ***determined*** by the per capita use of traditional cooking fuels, per capita private transportation, per capita non-vegetarian meals, ratio of children and senior citizen members to total number of family members, gender of the head of the family, and total number of family members. Again, all these variables viz. per capita use of traditional cooking fuels, per capita private transportation, and per capita non-vegetarian meals are having ***positive impact*** on per capita carbon footprint and ratio of children and senior citizen members to total number of family members, gender of the head of the family, and total number of family members do have ***negative impact*** on the per capita carbon footprint.

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Annexure

Table no. 1
Per Capita Carbon Footprint (tCO_2e tonne) of the Rural (Blocks) Households

Items / Components	Quantity (tCO_2e tonne)	Percentage (%)
Electricity	0.115018	15
Food	0.140449	18
Cooking	0.345487	44
Transport	0.151816	19
Mobile	0.033754	4
Total (Sample Households)	0.785240	100
India*	1.8*	--
World*	5.0*	--

Source: Own household survey
**www. edgar.jrc.ec (2014)*

Table no. 2
Per Capita Carbon Footprint (tCO_2e tonne) of the Urban (Municipalities) Households

Items / Components	Quantity (tCO_2e tonne)	Percentage (%)
Electricity	0.121656	16
Food	0.134165	18
Cooking	0.345830	44
Transport	0.126874	17
Mobile	0.032175	5
Total (Sample Households)	0.760552	100

Source: Own household survey

Table no. 3
Correlation Matrix with Variables Relating to Rural Households

	PCFT	CHLSC	TRNSP	TCF	ELECT	MCF(LPG)	FM	GHOF	NVEG	INCOME
PCFT	1									
CHLSC	-.229(**)	1								
TRNSP	.586(**)	-.150(**)	1							
TCF	.298(**)	-.020	-.248(**)	1						
ELECT	.072	-.067	.217(**)	-.249(**)	1					
MCF(LPG)	.157(**)	-	.445(**)	-.529(**)	.392(**)	1				

		.165(**)								
FM	-.436(**)	.238(**)	-.166(**)	-.236(**)	.122(**)	.039	1			
GHOF	-.090(*)	-.067	-.082	.013	-.035	-.028	.059	1		
NVEG	.155(**)	-.049	.145(**)	-.111(*)	.164(**)	.169(**)	-.015	.056	1	
INCOME	.359(**)	-.138(**)	.308(**)	-.148(**)	.115(**)	.223(**)	-.127(**)	-.006	.477(**)	1

Source: Own household survey
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

Table no. 4
Correlation Matrix with Variables Relating to Urban Households

	PCFT	CHLSC	TRNSP	NVEG	TCF	ELECT	FM	GHOF	INCOME	MCF(LPG)
PCFT	1									
CHLSC	-.049	1								
TRNSP	.582(**)	.057	1							
NVEG	.350(**)	.041	.358(**)	1						
TCF	.108	-.047	-.311(**)	-.255(**)	1					
ELECT	.083	-.146	.050	.027	-.001	1				
FM	-.292(**)	.087	.006	-.131	-.343(**)	.021	1			
GHOF	-.120	-.003	-.052	-.064	.026	-.026	-.027	1		
INCOME	.596(**)	-.056	.590(**)	.316(**)	-.276(**)	.045	-.007	-.112	1	
MCF(LPG)	.169(*)	.023	.359(**)	.261(**)	-.495(**)	.116	.202(**)	.056	.325(**)	1

Source: Own household survey
*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed)*

Table no. 5
Regression Estimation of PCFT of Rural Households

Variables	Coefficient (t-statistics)	VIF
Intercept	0.479*** (12.906)	
CHLSC	-.041* (-1.883)	1.120

TRNSP	.682*** (28.272)	1.386
TCF	.489*** (19.439)	1.508
ELECT	.017 (0.745)	1.223
MCF(LPG)	.065** (2.344)	1.813
FM	-.179*** (-7.930)	1.210
GHOF	-.030 (-1.447)	1.024
NVEG	.013 (0.541)	1.327
INCOME	.170*** (6.937)	1.432
		ADJ.R^2=0.774 F=205.82*** N=540

Source: Own household survey
**** t-statistics is significant at the 0.01 level (2-tailed).*
*** t-statistics is significant at the 0.05 level (2-tailed).*
**t-statistics is significant at the 0.1 level (2-tailed).*

Table no. 6
Regression Estimation of PCFT of Urban Households

Variables	Coefficient (t-statistics)	VIF
Intercept	0.281** (2.413)	
CHLSC	-.026 (-909)	1.051
TRNSP	.572*** (15.582)	1.745
NVEG	.076** (2.436)	1.271
TCF	.384*** (11.066)	1.559

ELECT	.028 (0.978)	1.044
FM	-.155*** (-5.044)	1.231
GHOF	-.052* (-1.840)	1.031
INCOME	.435*** (12.087)	1.678
MCF(LPG)	.024 (0.708)	1.491
		ADJ.R^2 =0.862 F=125.117*** N=180

Source: Own household survey

**** t-statistics is significant at the 0.01 level (2-tailed).*
*** t-statistics is significant at the 0.05 level (2-tailed).*
** t-statistics is significant at the 0.1 level (2-taile).*

THE COST - BENEFIT ANALYSIS OF A THOUGHT POWERED BY "DISSOLVE THE BOX FRAMEWORK"

Santosh Sharma

Abstract:

As professionals we do the costing of various products, processes, services, ventures and all other activities. We also calculate the benefit that is derived from incurring such cost. But, have we ever thought of doing the cost-benefit analysis of a thought? Shouldn't we as professionals do that? Thought is the basic unit of every response and if the cost-benefit analysis of a thought is not favourable then the entire decision goes haywire. This article is an attempt to reduce the cost and improve the benefit derived from a thought so that we create a competitive advantage right at the level of a thought.

Key Words:

Cost-Benefit Analysis, Cost, Thought, Thought-Action Linkages

The High Point

Don't we generally face the following scenarios in life and work?

Scenario 1: It is the last over of the match and your team needs 28 runs to win.

Scenario 2: You have too many girl/boyfriends (read as options) and you have to decide and marry one of them.

Scenario 3: You have no girl/boyfriends (read as options) at all and you want to marry and set up a family.

Scenario 4: You are a start-up and you have to face the Goliaths of the industry.

Scenario 5: You are an established organizations but you are facing tough competition from the new entrants.

Scenario 6: The market scenario is very volatile and it is a challenge for you to survive and grow.

Scenario 7: Your financial condition is bad and you are working different ways to overcome it.

Eventually, at the core, how we

a) receive
b) process and
c) respond

to different situations guide our 'success' or 'failure'. If we look around, we'll find individuals and organizations engaged in their own scenarios and some succeed while majority fail.

If we breakdown our success or failure to get to its finer components, we'll find it only to be an expression of all our *actions.* And each of these *actions* when broken finer is actually an outcome of a bunch of our *decisions*.

Our *decisions* when further broken-down are ultimately a recipe of our *thoughts.*

Our *thought* therefore, is the basic building block for all our decisions and actions. And the quality of our thoughts actually designs the quality of our decisions and actions which in turn designs our success or failure.

Overview

We as professionals generally do the cost-benefit analysis of various options available to us to arrive at short, mid and long-term decisions. We do our calculations when we go to buy vegetables at the supermarket, choose our career options, take business decisions or when we choose from various investment alternatives.

We do the cost-benefit analysis of our decisions and actions. But what about our thoughts which builds up to the decisions and actions? We fail to go finer. Shouldn't we do a cost-benefit analysis of our thought? And more so as a Cost and Management Accountant?

The world is evolving with various refinements leading to different industrial revolutions. And with each stage we are going finer and finer. We have reached a stage of Industry 4.0 where automation, digitization and other information technologies are boosting productivity and disrupting existing value chains.

The irony is, we as human beings have failed to evolve as individuals in particular and as a race in general. We either think "from the box" or "Outside the box" at best. These "boxes" are nothing but mental cages that hold us back. It's time to evolve from Industry 4.0 to Society 5.0 where deep integration of cutting-edge technology can be used to solve economic and social issues. For human being to keep pace and lead change it is not enough to think out of the box but we as a human race must now "Dissolve the box" altogether.

As we proceed, we will come to know of the various components of a thought, know how to reduce the negatives or cost of a thought and get the knowhow to add the positives or benefits of the thought through the Dissolve the Box process or the DTB Framework.

Through this paper an attempt is made to calculate the cost-benefit analysis of a thought so that we are able to cultivate constructive thoughts to live, grow, lead, create and act more effectively than now. It will help leaders to design meaningful decisions and strategies as they'll be able to see deeper, wider and faster into the situations than before.

What is a Thought?

Thoughts are verbalizations in the mind and it can be of different types.

a) fertile or infertile
b) non-toxic or toxic
c) creative or repetitive
d) intelligent or unintelligent
e) constructive or destructive

In 2005, The National Science Foundation published an article summarizing research on human thoughts per day. It was found that the average person has about 12,000 to 60,000 thoughts per day. Of those thoughts, 80% were negative, and 95% were exactly the same repetitive thoughts as the day before. Higher internal disturbance within leads to a greater number of thoughts. In other words, the number of thought is directly proportional to the level of disturbance inside. And most of these thoughts that take birth from the field of disturbance are repetitive, compulsive and regressive in nature.

The "Thought - Action Linkages" experiment

An experiment was conducted on more than 10,000 people right from the entry level professionals to C level executives, students, entrepreneurs, homemakers, sportsmen and artists in different batches and different locations over a period of 3 years.

In **Part 1** of the experiment the participants had to undergo 3 steps:

Step 1: They were asked to keep their hands on their lap.

Step 2: They were then asked to think that they won't be able to lift their hands.

Step 3: With this belief in the background they were then asked to lift their hands.

Observations: It was observed that none of the participants could raise their hands. It was their own hands but the participants were not able to raise when they thought and believed that they could not lift their hands.

Conclusion: The internal communication of the mind and body shaped this outcome. It is the same communication channel that works when we say:

a) "I won't be able to do this"
b) "I won't be able to wake up early in the morning"
c) "I won't be able to solve this problem"
d) "This is impossible"
e) "I won't be able to bounce back"

In **Part 2** of the experiment the same participants had to undergo another 3 steps:

Step 1: They were asked to keep their hands on their lap.

Step 2: They were then asked to think that they will be able to lift their hands.

Step 3: With this self-belief they were then asked to lift their hands.

Observations: It was observed that all the participants could now raise their hands. Earlier the same participants could not lift them when they thought and believed that they could not lift their hands. But now they could lift them with effortless ease. There was a paradigm shift in the outcome.

Conclusion: This internal communication of the mind and body shaped the new outcome. It is the same communication channel that works when we say:

a) "I will be able to do this"
b) "I will be able to wake up early in the morning"
c) "I will be able to solve this problem"
d) "I'll convert this from impossible to possible"
e) "I will be able to bounce back"

The Big Picture

Imagine the amount of energy invested in the Part 1 of the experiment and the cost involved in terms of pain suffered, emotional drainage and opportunity loss in the net outcome. A person with a negative, limited or infertile predisposition or thought drains a lot of energy, have lots of frictions in the process and lead to undesirable, inefficient or less potent outcomes. People with such predisposition involved in any process or engaged in any organization only logically extends this inefficiency and multiplies it. In Part 1 of the experiment the cost of energy and emotions invested versus the return in terms of outcome is hugely negative.

However, in part 2 of the experiment the energy and emotions invested versus the return in outcome are meaningfully positive. People, organizations and countries in the new age economy will no more just compete at the decision, system or process level but they will go finer and try to get the edge at a more component or thought level.

And this cost-benefit can in turn easily be translated into monetary terms to compare with other relevant factors.

Among the various expressions of a "toxic thought" let's take the case of "depression" as just one of the outcomes among many. The World Health Organization reports "264 million people of all ages suffer from serious depression and hundreds of millions of people are mildly depressed" because of their negative predisposition. Our predisposition is shaped by culture, experiences, gender, geographic location, age and so on. The cost of energy invested by the human race in such depressive and negative thoughts is highly alarming. It has to be addressed immediately as it impacts each and every aspect of life and work. These depressive thoughts, demotivate people reduces their managing and leadership skills and ultimately gives rise to mediocre strategies and inefficient businesses or outcomes.

As businesses worldwide are evolving, we are working towards making the processes more streamlined, lubricated and intelligent to achieve the desired outcome. We are also taking help of technology and artificial intelligence to bring about more fluidity and efficiency.

However, when competition gets tougher it becomes even more imperative to have more energy efficient processes to achieve the desired outcomes. In order to make this happen, seeds have to be sown deeper, at the thought level. A marked shift is required in the quality of thought.

Therefore, the cost-benefit analysis of thought is the primary function for both individuals and organizations, at all levels, as a lot of constructive energy is getting drained and wasted. The *cost* of desired outcome is unnecessarily increasing. It is because the human resource, that ultimately manages all other resource, is unable to rise to the occasion.

Components of a thought

Just like a product, service or a process is made up of many components or activities, a thought is made up of natural components and self-created pollutants.

I) **Natural components:** The natural or organic component makes the thought fertile, non-toxic, creative, intelligent and constructive. The natural components that give shape to thoughts are:

a) **Intention**
It is the potent seed or the purpose behind the thought, decision or action.

b) **Attention**
It is the focus. By nature, attention is always deep in the present. Intention naturally must always wrap or embrace the attention.

c) **Intelligence**
It is the information and raw data without any biases. It builds the thought.

d) **Platform of response**
It is the field from which we receive process and respond to situations. Also known as field of perception.

II) **Self-created pollutants:** Knowingly or unknowingly the self-created villains creep in to pollute the thought making it infertile, toxic, regressive, unintelligent and destructive.

The toxins are created and spread by the "5 internal villains". Let's call them "LFEAD" or "the Gang of Five". And to make things more expressive we have personified the "Gang of Five" as follows:

1) **L - Limited self-understanding,** represented by a **'Frog in the well'**

2) **F – Fear,** denoted by a **'Mouse'**

3) **E – Ego, by a 'Lion'**

4) **A – Attachment, by a 'Dog hooked to its bone'**

5) **D - Dominant mind,** by a **'Bull'** that does not listen to anyone

The Steel incident

Before we understand the Gang of 5 in detail let me take you through a real-life incident.

"Drop your ego before you enter" is what is loudly written at the entrance of the Management Training Centre of an Indian organization, which is one of the top steel makers in the world with an annual turnover of more than US $ 8 billion.

As I went in, with a smile I asked the director,

Me: How do I drop my ego?

Director: Starts laughing and says "it's a big question."

Me: Has the appeal for 'dropping ego' made any difference to people visiting the training centre?

Director: "Not really."

Me: Does this ego affect the decisions in your organization?

Director: Convincingly answers, "It does not only affect the decision in my organization but in every aspect of our lives and we pay a very heavy price for it."

And the same view was echoed by more than 10,000 people in different organizations across the globe with different demographic profiles with whom I interacted.

Before this, I spent few years in trying to understand myself and the people around me. It all started when I realised that I am not really free myself. There were different biases, mental cages and traps taking charge of my thoughts and actions. And they certainly infected my leadership capabilities. They polluted my thoughts. This in turn increased the cost and reduced the benefits of my decisions and actions. When I shared this state of my internal slavery with friends and colleagues, they also believed that they are not really free to lead effectively.

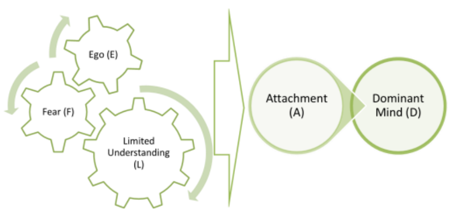
But the Big question is "What is holding us back?"

It was not very clear as to what was stopping us from experiencing real freedom. Though I had some idea that ego was obviously creating a problem in organizations and affecting leadership qualities. Not just that. It is polluting all strategies and functions in every aspect of life and work.

I started addressing my ego to begin with, but it all went futile. Ego is tricky. It tricked me every time I thought I was close to conquer it. There was ego in this conquering too. Isn't it?

When I scratched my ego a little deeper, I found *fear* underneath my *ego*. And this hidden fear forced me to resort to my ego and wear a social mask for defence. When I further scratched my fear a bit deeper, I realised *limited understanding of myself* was underneath it. And this was the root cause of all our problems.

It was this *limited understanding of myself* that gave rise to *fear* and that triggered the *ego* in me.



Ego in turn got me *attached* or hooked to people, place or outcomes, forcing me to get mostly engaged to the past or future. Attachment pulled my attention away from the present. And this attachment finally forced me to have a *dominant mind* which did not listen to me. I became a puppet of the situation. This dragged me into the box of compulsive, repetitive and regressive thoughts from which I kept responding.

We can never fight this ego or lion inside us straight away or head on. This is the mistake we have been doing all along. To address the lion inside we must first address the limited self-understanding and fear so that the Lion does not take birth in the very first place. And once ego is rightsized we get the freedom from attachment and dominant mind that pulls us to behave like a puppet.

When I shared this vicious cycle of LFEAD with my colleagues, seniors and subordinates they also identified themselves to be under the same influence. Their LFEAD team was guiding – aka misguiding them too. You can call it our thought traps, mental cages, walls, pits or barriers from which we keep responding to situations in life and work.

The LFEAD team is inseparable from each other in the sense they all come together in this order only complementing and supplementing each other and curbing the leader inside us. All physical manifestations like depression, pressure, anger, jealousy, underperformance and so on is just a permutation and combination of these 5 elements in our thought. Every workstation in the organization keeps on exporting these villains every minute, every second in all their decisions and actions creating barriers and walls all around.

The Gang of 5

Let's understand each one of the villains that pollute our thought in some greater details. The Gang of 5 increase the cost and reduce the benefit from the thought.

1) **Limited self-understanding:** It is a state where we limit our understanding of ourselves and behave like a 'frog in the well'. We are actually human beings but now we reduce ourselves to other narrow platforms and boxes of gender, colour, religion, department, organization . . . and finally to a very narrow economic entity of self. And these narrow boxes guide our decisions. We miss on the big picture and operate from these pinhole perspectives. Now we define ourselves narrowly and therefore all thoughts, decisions, strategies and actions carry limited intelligence. Our thoughts do not carry the intelligence to design collaborative strategies as we think small.

This Limited Understanding gives rise to

2) **Fear:** It is a state where we have an ongoing internal dialogue of "what will happen if this happens, what will happen if that happens" 24x7. Don't we ask "what-if questions"

every moment? If the answer is yes, it is because of our hidden fear. It makes us fragile and averse to change. Fear forces us to behave like a mouse. There is an element of fear in all our strategies. Our coping mechanism is very low and our strategies fail when the going gets tough.

This Fear triggers the

3) **Ego:** It is a state where we are self-centred. This reduces our area of concern and area of influence. Now we are the lion maintaining distance from the others, infected by the my-side bias, always trying to prove ourselves superior to others. Thoughts and strategies with ego is self-destructive in nature. Such thoughts prevent us to think beyond ourselves and we pay a heavy price for it.

Ego further gives rise to

4) **Attachment:** It is a state where we are hooked to outcomes just like a dog is to its bone. Now attention is not in the present and we are not free to perceive the present "as it is." Seeing things "as it is" is a state where we are not guided by preconceived notions, biases or prejudice. Since attention is not in the present, we miss the details. We do not have space for fresh perspectives. Execution takes a beating when we are hooked to the past or future as we *ignore the process* that gives birth to future outcome.

Attachment finally gives rise to

5) **Dominant Mind:** It is a state where we have automatic and compulsive thoughts while responding to the given situation. Now we behave like a bull. This makes us followers or at best conditional leaders, as this leadership has very limited intelligence. We have automatic and compulsive thoughts. Our conditioned mind becomes the master and we serve it. Our thoughts, decisions and strategies lack innovation and creativity. We fail to design dynamic strategies.

These Gang of 5 when present in our thoughts reduces the power and creative component of our thoughts.

Unknowingly we export these 5 villains every now and then.

The underperformers keep feeding their LFEAD and the genuine leaders starve them as a way of life. If your think finer realization will dawn that our moments of success have been when LFEAD is natural and not blown out of proportion.

We must keep trying to reduce the frog, mouse, lion, dog and the bull from exporting into our decisions and responses we take very minute and every second.

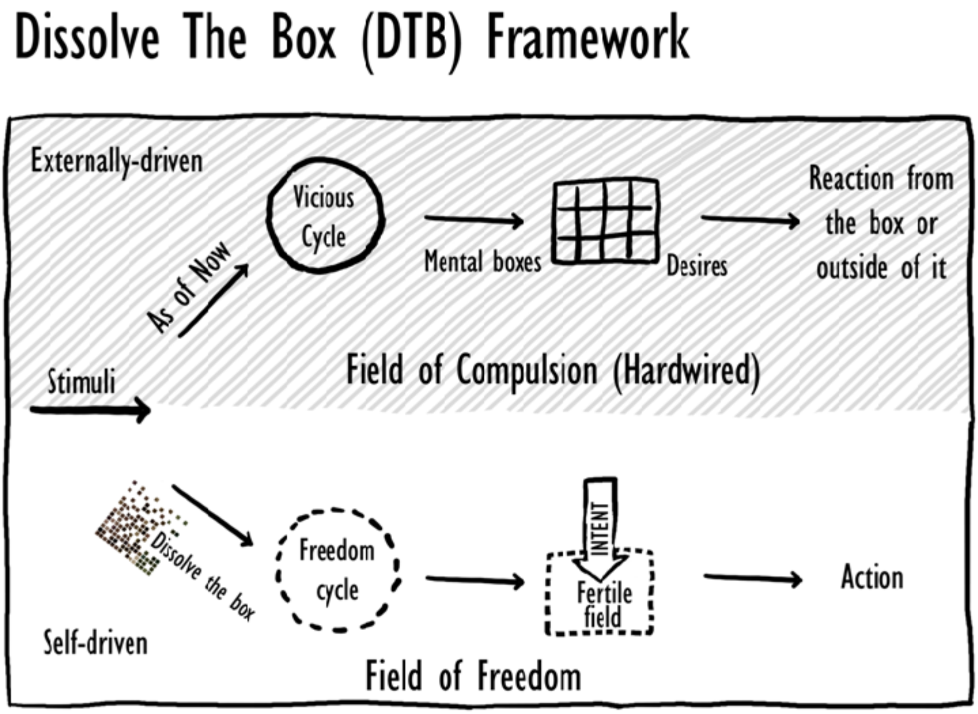
LFEAD combine in different proportions to create all other monsters like anger, frustration, pressure and the list of such by-products is really long.

To summarise,

1) The limited self-understanding limits and pollutes the intent;
2) Fear, ego and attachment pulls our attention away from the present and pollutes the information or intelligence;
3) The dominant mind actually pollutes the platform from which we respond.

LFEAD is the root cause or the mother for all our problems. It causes all physical, mental, emotional and psychological pain. With high LFEAD we can only think from the box or outside of it and respond from the field of compulsion when we must actually upgrade and respond from the field of freedom where thoughts are sans LFEAD.

The DTB Framework



The Gang of 5 infects our perception through which we receive, process and respond to situation. When LFEAD is fed we receive any stimuli from the *vicious cycle* and this forces us to *mental boxes* pushing us to *react* from or outside the box. Now our thoughts are toxic and unintelligent.

However, when LFEAD is rightsized, the same stimulus is received from the *freedom cycle* and we reach the *fertile field* from which we have the freedom to *act* depending on the *seed* or *intent* we sow in the fertile field. Now the thoughts are fertile, constructive and intelligent.

There is a huge difference between *action* and *reaction*. Action is when we are on top of the situation and reaction is when situation is on top of us and we are helpless.

We must think and act from the *field of freedom* and not from the *field of compulsion*. Thoughts taking birth from the field of compulsion have high cost and are low on benefits.

The Impact of Dissolving the Box

1) We upgrade from the *field of compulsion* to the *field of freedom* guiding us to live, grow, lead, create and act more effectively.

2) When limited self-understanding, fear, ego, attachment and dominant mind is right-sized we reduce *problems* to mere *situations*.

   Situations = Problems – LFEAD

3) We intend and don't desire. Intent is the potent seed that manifests as thoughts, emotions and actions from the fertile field whereas desire is the impotent and infected seed from the infertile mental boxes.

   Intent = Desire - Cravings caused by LFEAD

   This paves the way from *thought leadership* to *Intent Leadership* which is much finer and therefore more intelligent.

Benefits

When professionals dissolve their boxes, they don't keep exporting LFEAD into their thoughts, product deliveries or services. Work culture, innovation, motivation, relationship with self and colleagues start improving many folds and office politics, mental/physical barriers and limitations reduce as we operate from a more fertile platform and not boxes carved by LFEAD.

The Solution: How to right-size the LFEAD and Dissolve the boxes?

We cannot fight, suppress or kill the LFEAD inside. They are tricky. By doing so we found that we only feed them *indirectly* and continue to remain their slave.

And by ignoring them, we found out that we only feed them *directly* making no sense either. The only way out to address them is to dissolve them so that they are not blown out of proportion. We must right-size our villains inside to its natural levels by dissolving our boxes. And we do it in 3 steps:

1) **Don't ask 'what-if' questions:**
There is a continuous internal dialogue of *what-if* questions engaging us away from the present, forcing us to be in a state of worry. If at all we have to ask a question we must upgrade from *what-if* to *if-then-else* questions. For instance, we must upgrade from "What will happen if I fail" to "If I fail, I do this else this." In what-if questions we are already responding from the box having all the ingredients that manufacture our failure. But the *if-then-else* questions open us to all possibilities.

2) **Accept the present 'as it is' first and then act intelligently to achieve your intention**
We keep feeding our villains unknowingly by resisting and not accepting the present 'as it is'. When we resist we keep guarding our mental cages and boxes as we are engaged with them. We are hooked to our mental boxes living either in the past or future. Attention is not deep in the present. The thoughts are repetitive and degenerative as they take birth in mental cages. Only when the attention is in the present, we have the freedom to connect to the field of all possibilities and infinite creativity.

3) **Have the attention deep in the present and observe your thoughts and actions**
When attention is deep in the present, we have the freedom to design the present and future. We are now aware of the step that we are taking and also the goal at the same time. And this is the right balance where we have complete freedom. Now the boxes dissolve and we are not dragged into the past or future. It's not that we now ignore the past or future or won't learn from them. It's just that we don't blow them out of proportion to hold us back; restricting us and limiting our growth, creativity and leadership.

We found that LFEAD got right-sized and mental boxes dissolved when our sample followed these 3 steps and now, they were responding much more objectively and creatively to situations than before. Now the subjects are comparatively free from their biases and baggages. And this made their thought more constructive, creative and potent.

Value Proposition

Just because of LFEAD, many man hours have been lost in meetings and brainstorming sessions in an effort to reduce friction. Conflicts dissolve to pave way for a fertile culture to create better solutions when we dissolve our boxes. I have closely seen the issues that arise and the business risks that arise because of the Gang of 5.

I was working for Ernst and Young when Arthur Andersen was acquired in India in the year 2002. I've also had the first-hand experience when Indian Airlines got merged with Air India. In both the cases it was observed that LFEAD played different roles every now and then creating issues at all levels which could have been easily avoided. Arithmetic and chemistry didn't work and time and resources went down the drain heavily. Many mergers and acquisitions have failed in spite of great strategies because different boxes in people and their teams failed to dissolve their created identities which guarded them, cutting themselves off from becoming a whole.

A 5% reduction in LFEAD was seen to bring about 14.7% improvement in the overall GOLFCUP parameters when DTB Framework was implemented in few Fortune 500 companies, Navratnas and other large organizations. The GOLFCUP parameters stand for:

- **G- Growth Parameters**
- **O- Organizational Fit**
- **L – Leadership Parameters**
- **F – Future readiness**
- **C- Coping Mechanisms**
- **U – Universal relevance**
- **P – Performance Parameters**

LFEAD fosters conflicts and works negatively on team building, motivation and other execution capabilities. Haven't we invested a lot of energy in addressing our ego? And didn't it go futile? If we are able to dissolve even 5% of LFEAD from our present levels it is going to bring about a huge change. It will give rise to more responsible future leaders.

Conclusion

One thought can bring about a huge change in life. There are approximately 60,000 thoughts in a day. If we de-pollute even 1 thought, it is going to bring about a meaningful impact.

As of now we only carry out the cost and the benefit derived from it at the decision level, systems level or project level based on data and information available to us. A huge intelligence is lying untapped underneath these gross levels in the form of unaddressed thoughts.

As the world evolves, integration is only getting finer and it is not enough to do a cost-benefit at the gross level but it has to be done at a much granular, component or thought level. The quality of thought decides the quality of decisions, strategies and actions as it is the thoughts that actually come together to take the different forms. So, go ahead and cultivate constructive thoughts.

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