# Chapter - 2 Review of Literature

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Chapter - 2 Review of Literature

2.1 Introduction

A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Literature reviews are secondary sources, and as such, do not report any new or original experimental work. A well-structured literature review is characterized by a logical flow of ideas; current and relevant references with consistent, appropriate referencing style; proper use of terminology; and an unbiased and comprehensive view of the previous research on the topic. Literature reviews should comprise the following elements:

- An overview of the subject, issue or theory under consideration, along with the objectives of the literature review
- Division of works under review into categories (e.g. those in support of a particular position, those against, and those offering alternative theses entirely)
- Explanation of how each work is similar to and how it varies from the others
- Conclusions as to which pieces are best considered in their argument, are most convincing of their opinions, and make the greatest contribution to the understanding and development of their area of research A literature review may constitute an essential chapter of a thesis or dissertation, or may be a self-contained review of writings on a subject. In either case, its purpose is to:
- Place each work in the context of its contribution to the understanding of the subject under review
Describe the relationship of each work to the others under consideration

Identify new ways to interpret, and shed light on any gaps in, previous research

Resolve conflicts amongst seemingly contradictory previous studies

Identify areas of prior scholarship to prevent duplication of effort

Point the way forward for further research

Place one's original work (in the case of theses or dissertations) in the context of existing literature

2.2 Review of Various Literatures

(1)
Researcher: Walter Stwart, Sheri Coulson, Robert Wilson
Place and Year: California State University San Bernardino, 2007
Type of Work: Research Paper
Title of the Work: “Information Technology : When it is Worth the Investment”

Abstract:

As companies attend to streamline work process and reduce costs, analyzing the role of Information Technology continues to be essential of in such efforts. CEOs are now more skeptical regarding the contribution of Information Technology to the overall financial performance of the company. They doubt to that IT direction is meaningfully linked to business goals. Therefore before the person performing the role of CIO prepares a recommendation for investments in IT technology/systems it is critical to support their case with hard data showing clearly the expected return on the investment. Even though more data is available to assist CIO’s in making IT decisions, most CIOs continue to experience difficulty in demonstrating the value of IT investments. This paper examines the research over the last 10
years on IS/IT investment value in an effort to highlight issues that should be considered before investing in Information Technology.

(2)
Researcher: Hennie Van Greuning, Joselito Gallardo and Bikki Randhawa
Type of Work: Research Paper
Title of the Work: “A Framework for Regulating Microfinance Institutions”
Abstract:
This paper seeks to provide a framework for addressing regulatory issues which impact operations and institutional development of microfinance institutions (MFIs). Arguing against universal regulation or creating separate specialized regulations, the approach in this paper uses the analysis of MFIs’ liabilities to highlight the distinguishing features of different types of MFIs and focuses on risk-taking activities that need to be managed and regulated. The paper points out the benefits from a transparent and inclusive regulatory framework within which MFIs can progressively evolve into formal financial institutions.

(3)
Researcher: Sumit K. Majumdar
Place and Year: U.S.A., University of Texas, 2010
Type of Work: Research Paper
Title of the Work: “Globalization and Relative Compensation in India’s Information Technology Sector”
Abstract:
This article evaluates the relationship between foreign earnings and wage share for a large number of Information Technology sector firms in India over a recent six year period. The results that are established, after accounting for
the fact that exporting is an endogenous phenomenon, show that the foreign earnings and wage share relationship is positive an significant for Indian firms during the entire period of analysis. In general, there has been disquiet that the gain from growth is not shared with employees, and that other firm stakeholders appropriate these gains. The firms that are actively engaged in the Global Information Technology economy have, in part been cognizant of providing higher rewards to their key human capital resources, and the consequences of globalization have been positive for the employees of Indian Information Technology firms.

(4)
Researcher: Michael Fiebig & J. Lange
Type of Work: Research Paper
Title of the Work: “The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience”
Abstract:

According to this study, the financial issues can be resolved by using PEARLS analysis developed by WOCCU, USA. They applied PEARLS as a prominent supervisory tool and concluded that, Agricultural finance is a risky and expensive business. However, the problem does not lie with the unchangeable risks and costs which can be avoided by not providing access to rural smallholders, but with the accurate management of the risks and costs.

(5)
Researcher: Richardson and Lennon
Type of Work: Research Paper
Title of the Work: “Ways Donors Can Help the Evolution of Sustainable Microfinance Organizations”
Abstract:

In their research paper, “Commercialization of Micro Finance: Perspectives from South and South East Asia”, concluded that Use of the PEARLS financial ratios has been especially useful in pinpointing key financial weaknesses and improving the transparency of credit unions’ progress in overcoming them.

(6)
Researcher: Dr. Kwadwo A. Ofei
Place and Year: Ghana, November – 2001
Type of Work: Case Study
Title of the Work: “Retooling Credit Unions: The Case of Credit Union Association of Ghanak”

Abstract:

According to this Case Study, he studied in assessing the financial performance of CUA (Credit Union Association of Ghana) they adopted the World Council of Credit Union (WOCCU’s) unique Credit Union monitoring and rating system called PEARLS. The PEARLS Evaluation System is a very efficient and effective tool for monitoring the progress of Credit Unions. Hence, it helps to monitor efficiency and profitability in the Credit Unions.

(7)
Researcher: Craig F. Churchill, Isabelle Barrès and Geetha Nagarajan
Place and Year: U. S. A., November – 2001
Type of Work: Research Paper
Title of the Work: “Focus On Transparency”

Abstract:

Here, they studied data provided information for measuring performance using ratio and trend analysis of critical indicators for each Network member. The standard indicators facilitate comparison across the Network. Opportunity
currently uses 20 quantitative indicators to measure outreach, loan portfolio quality, efficiency, profitability and sustainability. The aforementioned key PEARLS indicators provide a snapshot to assess performance over time, they concluded at the end.

(8)
Researcher: The Consultative Group To Assist The Poorest (CGAP)
Place and Year: U. S. A., November – 2001
Type of Work: Research Paper
Title of the Work: “Financial Transparency: an MFI’s Information Sequence”

Abstract:

“Assessment / Performance Measurement: Financial Transparency” a program focuses on PEARLS technique for financial analysis of MFIs. Microfinance assessments can contribute to improving transparency in microfinance. However, several challenges require attention: improving information, standardizing indicators and definitions, increasing the frequency of assessments, and reducing their costs. For information about work on these and other challenges to transparency by CGAP and others. PEARLS are a set of 45 financial ratios used to evaluate and monitor the financial stability of credit unions within WOCCU.

(9)
Researcher: Paul Jones
Place and Year: U. K., February 2005
Type of Work: Research Project
Title of the Work: “Creating wealth in the West Midlands through sustainable credit unions”
Abstract:

The action research project, "Creating wealth in the West Midlands through sustainable credit unions", marks a step forward in understanding the organizational development of credit unions as quality financial institutions. The project has aimed to help credit unions restructure in ways that prioritize financial discipline, economic strength, professionalism and quality in financial services. This involved encouraging business and market oriented practices, modernized lending procedures, a new financial structure and PEARLS ratio analysis as well as a more entrepreneurial and enterprise-driven culture.

(10)
Researcher: Jonathan Adongo and Christoph Stork
Place and Year: Namibia – 2005
Type of Work: Research Paper
Title of the Work: “Factors Influencing the Financial Sustainability of the Microfinance Sector in Namibia”

Abstract:

The research paper concluded that, The benefits of microfinance are dependent on the standards of microfinance provision. This requires that the institutions are registered and qualified and that microfinance industry regulation exists and is appropriate - or is not enforced if inappropriate. In Namibia, the microfinance practice has seen the widespread adoption of industry standards advocated by CGAP (Consultative Group to Assist the Poorest) Practitioners advocate the use of Generally Accepted Accounting Principles to maintain accounting standards. In addition, co-operatives involved in microfinance are required to adhere to a set of internationally accepted rules concerning regulation and supervision at the institutional level.
This paper examines the financial health of PRCSL in the framework of PEARLS. The health check up conducted on the basis of publicly available financial data concludes that Pokhara Royal Cooperative Society Limited (PRCSL) has not earned enough to pay up the return on member share capital and build up the institutional capital as the second line of defense for saving deposits of member-clients. The perusal of indicators of different components of PEARLS indicates that the financial health of PRCSL is not so sound.

He studied that Credit unions in most developing countries must deal with volatile macroeconomic conditions that can radically affect their financial performance. PEARLS system serves as an invaluable guide through highly volatile conditions to improve significantly the decision making capacity of management. In summary, the process of commercialization brings numerous
financial and social advantages if the external market conditions and macroeconomic variables are harmonized with the internal, institutional operating policies and ideologies. By harmonizing these variables and harnessing their advantages, commercialized credit unions and NGOs can provide significant competitive advantages to the people they serve.

(13)
Researcher: Tulasi Prasad Uprety
Place and Year: Kathmandu - 2008
Type of Work: Research Paper
Publication: Micro-finance Summit Kathmandu
Title of the Work: "Policy and Regulatory Issues in Microfinance"

Abstract:

According to this paper, Micro-finance in Nepal is emerging and transforming itself from directed regime to market led private effort over the years. Nepal government, Nepal Rastra Bank (Central Bank) and donor institutions are providing attention to this sector. Their role is recognized as systematizing, regulating, supervising, promoting and facilitating the system, methods and institutions. Nepal Rastra Bank is considered as one of the prominent regulator, which always is in support of poverty reduction strategies through the provision of development finance especially micro finance.

(14)
Researcher: Cardiff Institute for Co-operative Studies
Place and Year: Welsh – 2009
Type of Work: Research Paper
Title of the Work: “A review of the credit union movement in Wales”

Abstract:

According to Research Paper, PEARLS analysis provides a useful ‘stock take’ of performance and an audit of key indicators. There are also more qualitative
measures required to assess overall competence and performance. These can be in relation to strategic objectives, leadership and operation management, for example: milestones and outcomes measures; application of co-operative values; social and environmental reporting; skills gaps analyses and training needs assessments; governance structures and processes; and succession planning. This would also help to identify the need for intervention to support the development and build the capacity of members, staff and directors.

(15)
Researcher: Janette Klaehn
Place and Year: Latin America – 2009
Type of Work: Research Paper
Title of the Work: “Rural Financial Institutions: Savings Mobilization”

Abstract:

He studied the goal of a credit union is to provide high-quality financial products and services to its members at competitive prices. Quality service provision should enable members to improve their economic and social well-being through income generation and asset accumulation. Voluntary savings are a critical tool to this end, equally or more important than credit. Traditionally, the three main groups of credit union products have been savings, loans and insurance.

(16)
Researcher: Luis Sasuman
Place and Year: Philippines, 2009.
Type of Work: Research Paper
Title of the Work: “Rural Financial Institutions: Restructuring and Post Restructure Results”
Abstract:

WOCCU’s mission is “Quality Credit Unions for everyone” and Credit Union Empowerment and Strengthening (CUES) Philippines adopts the same mission for the entire cooperative movement in the country. CUES Philippines is not in the business of directing the partner cooperatives on how to manage their businesses but instead provide them with a proven financial tool for use in their strategic planning. When the Model Credit Union Building (MCUB) methodology was introduced, it was geared towards making Batch 1 cooperatives as stable businesses capable of providing safe and sound credit and savings services.

(17)
Researcher: Sunil Mithas, M. S. Krishnan and Claes Fornell
Place and Year: University of Michigan - March 2004
Type of Work: Research Paper
Publication: Ross School of Business
Title of the Work: “Effect of Information Technology Investments on Customer Satisfaction: An Empirical Analysis”

Abstract:

In this paper, they studied the effect of information-technology (IT) investments on firms’ customer-satisfaction performance. Although much of the prior work on the business value of IT at the firm level focused on financial and accounting measures, this paper explores the effect of IT investments on more qualitative outputs, such as improved customization, product variety and customer convenience, as reflected in the overall customer satisfaction for a firm. The analysis of 125 panel observations on fifty firms for multiple years indicates a positive association between aggregate IT investments and customer satisfaction. Their results also indicate that the effect of IT investments on customer satisfaction may differ across manufacturing and service companies. This paper also studied the effect of
customer interfacing IT applications such as customer relationship management systems on customer satisfaction.

(18)
Researcher: Michael H. Grote and Florian A. Taube
Place and Year: University of Johann Wolfgang Goethe - Nov.- 2004
Type of Work: Research Paper
Publication: Journal of Environment and Planning
Title of the Work: “Off shoring the Financial Services Industry: Implications for the Evolution of Indian IT Clusters”

Abstract:

This paper explores the opportunities for existing Indian IT clusters to upgrade and undertake financial research activities. For the first time complex tasks at the core of financial activity are off shored which makes it an interesting case for a lot of other industries and their spatial economic organization in an ever globalizing world. This paper argues that research activities are locally embedded in Western financial centers to an extent that such a development is not likely. Two different research activities, viz. country analysis and institutional equity analysis are examined. This analysis shows, however, that there is a certain potential for some research activities to be relocated to India. So far investments take place in very few existing IT clusters which have already gained reputation in the financial community.

(19)
Researcher: Hildegunn Kyvik Nordas
Place and Year: Bergen, December - 2000
Type of Work: Research Paper
Publication: Foundation in Economics & Business Administration
Title of the Work: “Information Technology and Regional Development - Global Village or Rural Backwater”
Abstract:

This paper discusses the information and communication technology and regional development. A two region model is adopted to a stylized urban-rural setting and numerical simulations presented. Diffusion of Information Technology, modeled as a reduction in the cost of transmitting digitized producer over geographical distances, has a dramatic impact on rural skilled workers’ wages both relative to rural unskilled workers and relative to urban skilled workers. The paper presents a case study of naval architecture and Design Company located in rural Norway selling their services all over the world.

(20)
Researcher: Ashok Desai
Place and Year: New Delhi, March - 2003
Type of Work: Research Paper
Publication: Department of Internal Development
Title of the Work: “The Dynamics of the Indian Information Technology Industry”

Abstract:

This paper, based inter alia on over 60 interviews with Indian IT firms, reviews the growth of the industry and evaluates its prospects. It aims to go beyond the received wisdom about the Indian industry, which includes the following misconceptions amongst others.

(21)
Researcher: Ron Hira
Place and Year: New York, January - 2004
Type of Work: Research Paper
Publication: Journal of Technical Forecasting & Social Change
Title of the Work: “U.S. immigration regulations and India’s information technology industry”

Abstract:

The export-led growth of India’s information technology (IT) industry has been nothing short of phenomenal over the past half-dozen years. Other studies have provided a number of explanations for the growth. This paper proposes that a significant factor has been overlooked or understated in prior explanations. Specifically, the Indian IT industry has utilized U.S. immigration regulations for competitive advantage to accelerate its growth. The importance of this factor is estimated through quantitative data analysis at the macro and firm levels. The analysis helps to explain why India’s IT industry grew while that of other developing countries, with similar human capital resources and wage rates, did not. The U.S. Congress is currently debating U.S. immigration policies and may change them in the near future. Any changes will have significant effects on the future growth pattern of the Indian IT industry. The results from this study may help those policymakers better understand a key factor of India’s success in exporting IT.

(22)

Researcher: H. Sajady and M. Dastgir
Place and Year: Iran, December - 2008
Type of Work: Research Paper
Publication: International Journal of Information Science and Technology

Title of the Work: “Evaluation of the Effectiveness of Accounting Information Systems of Selected Information Technology Companies”

Abstract:

In this study the effectiveness of accounting information systems of finance managers of listed companies at Tehran Stock Exchange is evaluated. The results indicate that implementation of accounting information systems at these companies caused the improvement of managers’ decision-making
process, internal controls, and the quality of the financial reports and facilitated the process of the company’s transactions. The results did not show any indication that performance evaluation process had been improved.

(23)
Researcher: P. Vigneswara Ilavarasan
Place and Year: Bangalore – 2008
Type of Work: Research Paper
Title of the Work: “Is Information Technology Workplace Equal for Women? Some observations from Indian software industry”
Abstract:

This paper fills the gap by testing four hypotheses that explore whether IT workplace is equal for women. The quantitative data was collected from two software organizations located in Bangalore, India. The study did not find any support for the delineated hypotheses and concluded the following: women software workers do not perform low skilled activities; they experience same as men on core job characteristics and group process; and work hours do not differ men and women. It is noted that structural constraints outside the IT organizations need to be removed to increase the women participation in IT.

(24)
Researcher: S. Vanitha and M. Selvam
Place and Year: Tiruchirappalli - 2007
Type of Work: Research Paper
Publication: International Research Journal of Finance and Economics
Title of the Work: “Financial Performance of Indian Manufacturing Companies during Pre and Post Merger”
Abstract:

Indian industries have been increasingly exposed to both domestic and international competition and competitiveness. Hence, in recent times,
companies have started restructuring their operations around their core business activities through M & As. But M & A is an area of potential good as well as potential harm in corporate strategy. It is necessary that an analysis has to be made to compare the financial performance of the pre and post – merger. In India, there are totally 58 manufacturing companies which have undergone mergers and acquisitions during 2000, 2001 & 2002. Thirty percent from the total population was taken as sample size (i.e. 17 companies out of 58). The present study is mainly based on secondary data. In order to evaluate the financial performance, ratio analysis, mean, standard deviation and ‘t’ test have been used as tools of analysis.

(25)

Researcher: Nirvikar Singh
Place and Year: University of California, USA - July 2002
Type of Work: Research Paper
Title of the Work: “Information Technology and India’s Economic Development”

Abstract:

This paper discusses the possibilities for broad-based IT-led economic growth in India, including increasing value-added, using better telecom links to capture more benefits domestically through offshore development for developed country firms, greater spillovers to the local economy, broadening the IT industry with production of telecom access devices, improving the functioning of the economy through a more extensive and denser communications network, and improving governance. We also examine the policy environment, arguing that government policy is better focused on removing labor market distortions and infrastructure constraints, rather than providing output or export subsidies to the software industry.
Growth of the BPO industry has helped the economies of many developing countries, especially in Asia, and India is prominent amongst them. Unlike the software industry, BPOs (though are export oriented) do not demand highly skilled labor. Therefore, the industry has played a major role, besides earning foreign exchange, in reduction of educated unemployment in many of these countries. This paper examines the direct and indirect benefits of the industry on Indian economy together with the major concerns. In particular it discusses how computer knowledge can be spread to the hitherto computer illiterate regions through commercial endeavors relating to the outsourcing industry. India being a prominent player in this segment Indian experience is expected to provide important insights to the other similarly placed nations.
silent revolution is taking place with evolution of women empowerment in the knowledge era. They are getting the best access to Information and Communication Technology (ICT) education, employment opportunity & becoming owners of IT companies. The purpose of this study is to map the emerging trends in India on the role of Women in Information & Communication Technology and look at what could happen in future, if this trend continues and is maintained with gender equality.

(28)
Researcher: Wolfgang Bessler and Claudia Bittelmeyer
Place and Year: Germany, May – 2006
Type of Work: Research Paper
Title of the Work: “Innovation and the Performance of Technology Firms: Evidence from Initial Public Offerings in Germany”

Abstract:

Here, it has been investigated the patenting behavior and long-run performance of German firms that went public (IPOs) on the “Neuer Market” during the period from 1997 to 2002. The main objective of the empirical analysis is to examine whether IPOs with patents outperformed those firms with no patented technology. The technology is measured by both the patent stock and patent indicators. The impact of patents on performance is analyzed with buy-and-hold-abnormal returns (BHAR), the three-factor asset pricing model as well as cross-sectional-regressions. In the regression analysis they include specific patent variables such as the number of International Patent Classifications (IPC), family size, the number of backward- and forward citations, and the frequency of cited articles. The empirical evidence suggests that innovation, patents, and intellectual capital are important factors that have a positive impact on the success, valuation, and the long run performance of start-up technology firms.
(29)
Researcher: Anne - Marie Croteau and Bergeron
Place and Year: Canada, April - 2001
Type of Work: Research Paper
Publication: Journal of Strategic Information Systems
Title of the Work: “An Information Technology trilogy: business strategy, business deployment and organizational performance”
Abstract:
The objective of this empirical study is to identify various profiles of technological deployment specific to various types of business strategy that best support organizational performance. Top Managers from 223 organization asked questions and accordingly findings will be carried out.

(30)
Researcher: Ram Kumar Kakani
Place and Year: Calcutta, December - 2000
Type of Work: Research Paper
Publication: Journal of Strategic Information Systems
Title of the Work: “Financial Performance and Diversification Strategy of Indian Business Group”
Abstract:
In this study he studied the impact of diversification strategy on the financial performance of the organization. Here, he studied various business groups of India, viz., Microsoft, Nokia, Coca cola, Tata, etc. Most of the business groups in the eastern world adopting this strategy were also successful.

(31)
Researcher: Thompson S. H. Teo and Poh Kam Wong
Place and Year: Singapore - 2000
Type of Work: Research Paper
Publication: International Journal of Information Management

Title of the Work: “Information technology (IT) investment and the role of a firm: An exploratory study”

Abstract:

This study extends IT investment into four types of management objectives: transactional, strategic, and informational and threshold. The relationships between these management objectives and firm’s role (defined in terms of traditional, evolving and strategic) are investigated through a questionnaire survey of managers in the service sector. As expected, firms adopting a traditional role seem to favor investment in transactional IT. However, there appears to be an increasing emphasis on strategic IT investment for all three types of firms, regardless of the role of Information Technology.

(32)

Researcher: Muhammad A. Obeidat

Place and Year: Southern Polytechnic State University, USA - 2011

Type of Work: Research Paper

Publication: International Management Review

Title of the Work: “Evaluation of Information Technology Vendor Services: An Empirical Study”

Abstract:

An empirical study of the evaluation of information technology vendor services is presented. The study aims at identifying and prioritizing the most critical factors in evaluating information technology vendor services according to information technology professionals. Information technology refers to hardware, software, networks, and telecommunication technology, and supplier services. A random sample of information technology professionals was surveyed, statistically analyzed, and reported.
Researcher: Ashish Arora and Surendra K. Bagde  
Place and Year: Cambridge, July - 2010  
Type of Work: Research Paper  
Publication: National Bureau of Economics Research  
Title of the Work: “Human Capital and Indian Software Industry”  
Abstract:  
In this study they studied the effect of the supply of engineers, measured by engineering baccalaureate capacity, on the regional growth of the software exports between 1990 and 2003. They found significant effect of engineering baccalaureate capacity on the growth of software exports even after controlling for other relevant factors. This conclusion is especially interesting because much of this capacity is due to private, rather than publicly supported colleges, and testifies to the private willingness to invest in human capital even in poor countries.

Researcher: Dr. S. Srinivas  
Place and Year: New Delhi- 2010  
Type of Work: Research Paper  
Publication: National Bureau of Economics Research  
Title of the Work: “The Information Technology (IT) Industry in Bangalore: A Case of Urban Competitiveness in India?”  
Abstract:  
This paper aims to understand the reasons for Bangalore’s success in attracting both foreign and domestic IT industries and investigates the extent to which the city can continue to be the preferred location for IT industry in the country. The analysis is conducted at the national level (which examines the global competitiveness of the IT industry in India), and at the city level, which provides a comparative analysis of the industry in Bangalore vis-à-vis other
major metropolitan areas in India. On the conceptual ground, the paper endeavors to put forward a case of urban competitiveness of Bangalore. The study found a strong link between the IT industry and the research institutes in Bangalore. Such links were especially strong in the R & D activities. Many of the interviewed firms felt that Bangalore would continue to be the preferred location for the IT industry in the country. However, they do not rule out the possibility that an impending infrastructure crisis in the city will undermine its competitiveness.

(35)
Researcher: Thomas L. Brewer and Stanley D. Nollen
Place and Year: Washington DC, March - 1998
Type of Work: Research Paper
Publication: Carnegie Bosch Institute
Title of the Work: “Knowledge Transfer to Developing Countries after WTO and Practice in I.T. in India”

Abstract:

In this study they examined theoretically the effect of the new WTO rules on the transfer of knowledge by multinational corporations to businesses in emerging market economies. They also suggest that the amount and type of knowledge transferred depends on decisions of MNCs about the mode of their participation in international business (trading, licensing, direct investment, or strategic alliances). They suggest that the new WTO rules will change some of these decisions. We illustrate our theoretical propositions by using case study data from three foreign invested companies in the information technology sector in India.

(36)
Researcher: Ajit Singh
Place and Year: University of Cambridge, September - 2005
Type of Work: Research Paper
Publication: Centre for Business Research

Title of the Work: “Shareholder Value Maximization, Stock Market and New Technology: Should the US Corporate Model be the Universal Standard?”

Abstract:

He studied that in 1992 a blue-ribbon group of US economists led by Michael Porter concluded that the US stock market-based corporate model was misallocating resources and jeopardizing US competitiveness. The faster growth of US economy since then and the supposed US lead in the spread of information technology has brought new legitimacy to the stock market and the corporate model, which is being hailed as the universal standard. Two main conclusions of the analysis presented here are: (a) there is no warrant for revising the blue-ribbon group’s conclusion; and (b) even US corporations let alone developing country ones would be better off not having stock market valuation as a corporate goal.

(37)

Researcher: K. J. Joseph and Vinoj Abraham
Place and Year: University of Cambridge, August 1997
Type of Work: Research Paper
Publication: Centre for Business Research

Title of the Work: “Information Technology and Productivity: Evidence from India’s Manufacturing Sector”

Abstract:

This paper is an attempt at addressing the issue of developing Indian Manufacturing sector with the help of Information Technology usage by analyzing an unpublished data set on the investment in computers and software at the industry level made available by the CSO. The study finds that low level of IT investment intensity in the manufacturing sector notwithstanding, IT investment does have a positive and significant impact on
both partial and total factor productivity. The findings of the paper suggest that in a context wherein the policy makers are concerned with low levels of growth in manufacturing output and productivity, policy measures and institutional interventions towards promoting IT diffusion in the manufacturing sector is likely to give rich dividends.

(38)
Researcher: Vinoj Abraham
Place and Year: University of Cambridge, September - 2010
Type of Work: Research Paper
Publication: Centre for Business Research
Title of the Work: “The Effect of Information Technology on wage Inequality: Evidence from Indian Manufacturing Sector”

Abstract:

This paper explained a persistent widening of skill based wage inequality in the Indian Organized Manufacturing sector has been reported by many researchers. Two main hypotheses had been tested in developed economies to explain such a phenomenon; an inter-sectoral shift in demand structure and an intra-sectoral shift in production technology. A decomposition of the change in wage share of skilled workers showed that sector bias explained very little of the changes in the share of skilled worker wages while more than 85 percent of the changes occurred within industries, giving support to the argument of changing skill mix within industries, rather than between industries.

(39)
Researcher: Suma Athreye
Place and Year: United Nations University, January - 2010
Type of Work: Research Paper
Publication: Economic and social Research training centre
Title of the Work: “Economic Adversity and Entrepreneurship-led Growth Lessons from the Indian Software Sector”

Abstract:

In this paper, they draw on the experience of Indian software firms where entrepreneurial growth has belied these predictions. This paper argues that the business models chosen by Indian firms were those that best aligned the country’s abundant labor resources and advantages to global demand. Many potentially higher value added opportunities struggled to attain success, but the qualitative value of experimental failures and the capability gaps they exposed was invaluable for managerial learning in the industry. Second, the paper also shows that the presence of growth opportunities and the success of firms stimulated institutional evolution to promote entrepreneurial growth. Last they show that the distinctive aggregate contribution of entrepreneurial firms was that they outperformed business houses and multinational subsidiaries in their more productive use of available capital resources whilst achieving similar levels of growth in output and employment.

(40)

Researcher: Nick A. Marchio
Place and Year: Macalester College, July - 2009
Type of Work: Research Paper
Publication: Economics Department of University

Title of the Work: “Are credit unions in Ecuador achieving economies of scale? Testing the tradeoff between access and efficiency”

Abstract:

This study tests the assertion that membership growth in credit unions is constrained by their unique structural features, such as their non-profit mission and member-based ownership. Although these features enhance inclusiveness, existing theory suggest that they work against efficiency when membership grows too diffuse. To address this issue, this study uses a model that takes into
account existing theory on constrained optimization in credit unions and theory on the adverse effects of diffuse ownership. Using data on 36 public credit unions in Ecuador, the empirical analysis finds evidence that credit unions can achieve economies of scale despite their problematic structural features. One possible explanation for this result may stem from the level of formality in Ecuador's financial system including its level of prudential regulation, information technology, and capital market formation. Moreover, the optimal credit union size may be a function of institutional and technological development in addition to their unique structural features.

(41)
Researcher: Paul Jones
Place and Year: Macalester College, July - 2009
Type of Work: Research Paper
Publication: Economics Department of University
Title of the Work: “Growing Credit Unions in the West Midlands – the case for restructuring”

Abstract:

This paper explores current issues in the modernization of British credit unions. It describes and analyses the challenges and dilemmas they face as they Endeavour to increase their market share and to serve a diverse membership with attractive financial products and services. The paper makes the case for a radical financial and organizational restructuring of credit unions and argues that, they are only going to grow as viable and relevant financial institutions in Britain, if they adopt robust market oriented and commercial principles. The paper analyses the implementation of these principles within a credit union strengthening project in the West Midlands with the help of PEARLS Analysis system.
This paper explains, the World Council of Credit Unions, Inc. (WOCCU) began its technical assistance program in Ecuador in late 1995. Funding of US$3 million for the program was provided by USAID’s Office of Microenterprise Development through September 2001. As program participants, the 23 Ecuadorian credit unions started using WOCCU’s PEARLS Monitoring System as a tool for managers to monitor and improve their performance. Developed as an off-site monitoring tool, PEARLS has allowed networks and affiliates to speak the same language, increasing the value of feedback and analysis.

The study aimed at providing that the financial ratios currently computed by savings and Credit Co-operative Society in Kenya may not assist users of financial reports towards detection of fraudulent financial reports; other ratios can bring to light possible fraud. Further study is suggested to determine the
extent of earnings management and the power of ratios in detection, besides
the multipurpose cooperatives and marketing co-operatives to complete the
result of this study.
# Chapter - 3 Research Methodology

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Chapter - 3 Research Methodology

3.1 Introduction

Research has moved during this century from the periphery to the centre of our social and economic life. What is the nature of this force? Why it is getting momentum? Most of us recognize that the progress which has been made in our society has been largely the result of research. So, research in common parlance refers to the search for knowledge. Research simply seeks the answer of certain questions which have not been answered so far and the answers depend upon the human efforts. Research is based upon observable experience or empirical evidence.

3.2 Meaning of Research

Research is simply the process of arriving as dependable solution to a problem through the planned and systematic collection, analysis and interpretation of data. The term research consists of two words:

Research = Re + Search

‘Re’ means again and again and ‘Search’ means to find out something1.

The following is the process: Observes Collection of data Again and Again Analysis of data

Therefore, research means to observe the phenomenon again and again from different dimensions. The research is a process of which a person observes the phenomena again and again and collects the data and on the basis of data he draws some conclusions.

3.3 Research Design

“According to Bernard S. Philips, "The research design constitutes the blue print for the collection, measure and analysis of data." The definition
highlights that research design includes the methods of research, viz. Survey, observation, experiment, the content analysis or their combinations. It also includes the types of data (quantitative or qualitative) data to be collected, questionnaire or schedule (structures or unstructured) and also about the size and technique of sampling. Different authors have defined the research design differently. The most popular book on research methodology among the students of social sciences is that of Claire Selitiz and others. "A research design is the arrangement of the condition for collection and analysis of data in a manner that aims to combine relevance to research purpose with economy in procedure.3"

Fred N. had opined that, "Research design is the plan (an overall outline from beginning to the end), structure and strategy (variables, and their operations, objectives, problems and solutions) of investigation conceived so as to obtain answers to each question and to control variance.4"

3.4 Rationale for the Study

This study will be based on secondary data. The data will be collect from published annual report of selected companies. Other information related to selected companies will be collected from official website and net sources, books, journals and newspaper etc. The research emphasizes on the comparative study of selected companies listed on NSE. Here, seven Companies are taken for the study. This research, basically, is helpful to the Companies to check their financial performance during the study period i.e. from year 2005-2006 to the year 2004-15. Moreover, the results of the research will give the broad perspective in the field of Investment in the Information Technology Industry. Here, on the bases of the research the selected companies can be effectively compared with each other. This comparison can be very helpful to both the sectors in the efforts to increase the financial performance.
3.5 Statement of Problem

The Indian Information Technology industry accounts for a 7.3% of the country's GDP and export earnings as of financial year 2011, while providing employment to a significant number of its tertiary sector workforce. More than 2.5 million people are employed in the sector either directly or indirectly, making it one of the biggest job creators in India and a mainstay of the national economy. In 2010-11, annual revenues from IT-BPO sector is estimated to have grown over US$76 billion compared to China with $35.76 billion and Philippines with $8.85 billion. India's outsourcing industry is expected to increase to US$225 billion by 2020. The Information Technology Industry is thus, very important industry for Nation’s development and growth. The companies fall under this industry will have to be assessed to have proper industry picture. We had an example of “Satyam Saga” which was the black spot for this developing industry. Here, researcher will try to assess the financial stability of the selected companies using Ratio analysis and Questionnaire technique. Therefore, the statement of problem for this research is,

“A STUDY OF KEY FINANCIAL VARIABLES OF IT INDUSTRY IN INDIA”

3.6 Objectives of the Study

With an outlook of the every research, it has been conducted for specific objective. It must have clear-cut problem and based on it the objectives must also be clearly defined. Therefore, that research gets clear idea about their task. Research objectives help the researcher to achieve his task easily. Also after the completion of research project can be evaluated based on the research objective. Thus it is at most important to define the research objective. Research refers to a scientific search for pertinent information on a special topic. In fact, research is an art of scientific investigation. In short, research is
a systematized effort to gain new knowledge. So research is systematic way of finding something new. The purpose of research is to discover answers to question through the application of scientific procedures. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though, each research study has its own specific purpose. Without any objectives we cannot do any research. Thus, the objectives are very important.

The following objectives have been framed to assess growth, progress and various other aspects of the Indian Information Technology companies listed on National Stock Exchange.

**PRIMARY OBJECTIVE**

The primary objective of the study is to check the financial stability of the selected companies listed on National Stock Exchange by Ratio Analysis.

**SECONDARY OBJECTIVES**

- To know the IT sector and its current trends.
- To study various theoretical aspects of financial performance.
- To evaluate the operational efficiency of selected IT Companies.
- To examine the profitability of selected IT Companies.
- To compare the liquidity of selected IT Companies.
- To examine the overall financial performance of selected IT Companies.

**3.7 Universe and Sample of the Study**

All Indian Information Technology companies listed on National Stock Exchange is formed a Universe for the present study. Out of the universe, the researcher has identified six Companies which constitute the CNXIT Index of N.S.E. and the companies which have been listed before financial year 2004 –
2005 have been selected for analysis. The following table shows the name and listing date of selected companies.

**Table No. 3.1**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Company</th>
<th>ISIN Code</th>
<th>Listing Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HCL Infosystems Ltd.</td>
<td>INE236A01020</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; January, 1997</td>
</tr>
<tr>
<td>2</td>
<td>HCL Technologies Ltd.</td>
<td>INE860A01027</td>
<td>6&lt;sup&gt;th&lt;/sup&gt; January, 2000</td>
</tr>
<tr>
<td>3</td>
<td>Infosys Technologies Ltd.</td>
<td>INE009A01021</td>
<td>8&lt;sup&gt;th&lt;/sup&gt; February, 1995</td>
</tr>
<tr>
<td>4</td>
<td>Rolta India Ltd.</td>
<td>INE293A01013</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; March, 1995</td>
</tr>
<tr>
<td>5</td>
<td>Tata Consultancy Services</td>
<td>INE467B01029</td>
<td>25&lt;sup&gt;th&lt;/sup&gt; August, 2004</td>
</tr>
<tr>
<td>6</td>
<td>Wipro Ltd.</td>
<td>INE075A01022</td>
<td>8&lt;sup&gt;th&lt;/sup&gt; November, 1995</td>
</tr>
</tbody>
</table>

Source: [www.nseindia.com](http://www.nseindia.com)

**3.8 Data Collection**

The task of data collection begins after a research problem has been defined and research design/plan chalked out. While deciding about the method of data collection to be used for the study, the researcher should keep in mind Two Types of Data viz, The **Primary Data** are those data which are collected afresh and for the first time which happened to be original in character.

The **Secondary Data** are those which are already been collected by someone else and which have already been passed through the statistical process. The researcher will try to analyze the Performance and Financial Stability of selected Indian Information Technology companies during the study period.
The main source of data used for the study is secondary, derived from the published annual reports of selected units and all data relating to history, growth and development of Information Technology Industry have been collected mainly from the books, magazines relating to industry, published paper, report, articles, news papers, bulletins, other journals like monthly review of Economy and web sites relating to industry. The data relating to the selected units under study have been obtained from prospectus, pamphlets and annual reports of the selected units.

3.9 Period of the Study

Present study covers the Ratio analysis of selected Indian Information Technology companies listed on National Stock Exchange for ten consecutive financial years. The period of the study will start from 1st April, 2006 to 31st March, 2015. Researcher has selected the base year 2005-06. This year is normal for the purpose of analysis and evaluation.

3.10 Scope of the Study

The Information Technology (IT) sector in India holds the distinction of advancing the country into the new-age economy. The growth momentum attained by the overall economy since the late 1990s to a great extent can be owed to the IT sector, well supported by a liberalized policy regime with reduction in telecommunication cost and import duties on hardware and software. The present research study is very wide. But for this research Ratio analysis will be taken into consideration for the purpose of evaluation and analysis. This study is specifically limited to Information Technology Companies listed on National Stock Exchange. The analysis is for ten financial years only.

3.11 Significance of the Study

As earlier mentioned in the introduction the industry is core industry and it has very large investment to the country now. So it can be said that the large
investment are blocked in the IT industry’s undertaken for the study of the research purpose, it has been many reason for the significance of the study. The significance of the study as follow:

(A) Contribution to the Knowledge

- Through this study the knowledge particularly regarding various ratios based on Profitability will improve.
- Through this study the knowledge regarding statistical tools and technique and statistical test will improve

(B) Contribution to the Society

- Through this research society will able to know the real financial situation of selected companies.
- Through this study the investors can take proper decision.
- Through this study the management of the selected companies can improve their performance.

(C) Contribution to the Industry

- Industry may be able to create more Wealth.
- The selected units may show Ratio analysis in their published annual reports.

3.12 Type of Research

There are various types of research which a researcher can adopt like Descriptive and Analytical, Applied and Empirical, Historical research, Experimental research, etc. here the researcher will adopt an Experimental type of research. Experimental research also known as hypothesis-testing research and it is the one in which the researcher tests the hypothesis of casual relationships between variables.
3.13 Hypothesis of the Study

G. A. Berg corroborates that, "A hypothesis is a tentative generalization the validity of which remains to be tested. In its most elementary stage, the hypothesis may be any hunch, guess or imaginative idea, which becomes the basis for action or investigation." The definition rightly specifies that the hypothesis provides the basis for the research work and the entire research work is oriented towards the hypothesis. “A hypothesis is a special proposition, formulated to be tested in a certain given situation as a part of research which states what the researcher is looking for”. A hypothesis may be descriptive, which identifies the existence, form, size or distribution of the variables for their analysis. The testable hypothesis may also be relational. It describes relationship between variables. This relation may or may not be cause-effect relation. However, the explanatory hypothesis always shows a cause effect relationship. There are mainly two types of hypothesis viz., Null Hypothesis and Alternative Hypothesis.

❖ Null Hypotheses:
  1. \( H_0 \): There would be no significance difference between all selected units in Efficiency.
  2. \( H_0 \): There would be no significance difference between all selected units in Profitability.
  3. \( H_0 \): There would be no significance difference between all selected units in Liquidity.

❖ Alternative Hypotheses:
  1. \( H_1 \): There would be significance difference between all selected units in Efficiency.
  2. \( H_1 \): There would be significance difference between all selected units in Profitability.
  3. \( H_1 \): There would be significance difference between all selected units in Liquidity.
3.14 Tools and Techniques of Analysis

Tools and Techniques of Analysis and Interpreting the result thereof mainly divided into two parts.

(A) Tools:
- Ratio analysis

(B) Statistical Tools:

(i) Mean

In mathematics and statistics, the arithmetic mean (or simply the mean) of a list of numbers is the sum of the entire list divided by the number of items in the list. If the list is a statistical population, then the mean of that population is called a population mean. If the list is a statistical sample, we call the resulting statistic a sample mean. The mean is the most commonly-used type of average and is often referred to simply as the average. The term “mean” or “arithmetic mean” is preferred in mathematics and statistics to distinguish it from other averages such as the median and the mode. The arithmetic mean is the “standard” average, often simply called the “mean”. The formula of mean is as under.

(ii) Standard Deviation (σ)

In statistics, standard deviation is a simple measure of the variability or dispersion of a data set. A low standard deviation indicates that the data points tend to be very close to the same value (the mean), while high standard deviation indicates that the data are “spread out” over a large range of values. In addition to expressing the variability of a population, standard deviation is commonly used to measure confidence in statistical conclusions. The term “standard deviation” was first used [1] in writing by Karl Pearson [2] in 1894 following use by him in lectures. This was as a replacement for earlier alternative names for the same idea; for example Gauss used “mean error” [3]
a useful property of standard deviation is that, unlike variance, it is expressed in the same units as the data. The formula of standard deviation is as under.

\[ \sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{n-1}} \]

(iii) Co-Efficient of Variance

In probability theory and statistics, the coefficient of variance (CV) is a normalized measure of dispersion of a probability distribution. It is defined as the ratio of the standard deviation to the mean. This is only defined for non-zero mean, and is most useful for variables that are always positive. It is also known as unitized risk. The coefficient of variation should only be computed for data measured on a ratio scale. It does not have any meaning for data on an interval scale. The formula of coefficient of variance is as under.

\[ C.V. = \frac{\sigma \times 100}{\bar{X}} \]

(iv) Two-Way ANOVA Table

The ANOVA procedure is one of the most powerful statistical techniques. ANOVA is a general technique that can be used to test the hypothesis that the means among two or more groups are equal, under the assumption that the sampled populations are normally distributed. The two-way analysis of variance is an extension to the one-way analysis of variance. There are two independent variables (hence the name two way)
Table No. 3.2
Two-way ANOVA Table

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares (SS)</th>
<th>Degree of Freedom (df)</th>
<th>Mean Square (MS)</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Rows</td>
<td>$\sum(T_i)^2 - (T)^2$</td>
<td>$(r - 1)$</td>
<td>SS between rows</td>
<td>MS between rows</td>
</tr>
<tr>
<td></td>
<td>nj</td>
<td>n</td>
<td>$(r - 1)$</td>
<td>MS residual</td>
</tr>
<tr>
<td>Between Columns</td>
<td>$\sum(T_i)^2 - (T)^2$</td>
<td>$(c - 1)$</td>
<td>SS between rows</td>
<td>MS between columns</td>
</tr>
<tr>
<td></td>
<td>ni</td>
<td>n</td>
<td>$(c - 1)$</td>
<td>MS residual</td>
</tr>
<tr>
<td>Error</td>
<td>Total SS – (SS between columns + SS between rows)</td>
<td>$(c - 1) (r - 1)$</td>
<td>SS residual</td>
<td>MS residual</td>
</tr>
<tr>
<td>Total</td>
<td>$\sum X_{ij}^2 - (T)^2$</td>
<td>$(C*r - 1)$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: “Research Methodology” by Kothari C. R., 2006, p.266

- In the table c= no. of columns
- r= no of rows
- SS residual = Total SS-(SS between columns + SS between rows)
(v) One – Way ANOVA Table
Under the one - way ANOVA, only one factor is considered and then observe that the reason for said factor to be important is that several possible types of samples can occur within that factor. In the present study, in one – way classification the analysis of variance table takes the following form.
# Table 3.3
Analysis of Variance Table for One Way ANOVA

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares (SS)</th>
<th>Degrees of freedom (d.f.)</th>
<th>Mean Squares (MS) (This is SS divided by d.f.) and is an estimation of variance to be used in F-ratio</th>
<th>F-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between samples or categories</td>
<td>[n_1(X_1 - X)^2 + nk(X_k - X)^2]</td>
<td>((k-1))</td>
<td>SS between ((k-1))</td>
<td>MS between MS within</td>
</tr>
<tr>
<td>Within samples or categories</td>
<td>[\sum(X_{li} - X_l)^2 + \sum(X_{ki} - X_k)^2] (i=1,2,3 \ldots)</td>
<td>((n-k))</td>
<td>SS within ((n-k))</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>[\sum(X_{ij} - X_l)^2] (i=1,2,\ldots) (j=1,2,\ldots)</td>
<td>((n-1))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.15 Limitations of the study

- The sample of the study is only limited with the selected IT companies in India. So, that the result may not show the best performance of overall applicability and their Implication.
- Analytical tools which are used in the study, if there are any related limitations they automatically applied the study.
- The study will be based on secondary data taken from published annual report and websites.
- This study mainly on public sector, so data depend on policy of government.
- Different experts have got different views on evaluating attitude and general practice of the company. Hence the view used in the study for the present purpose cannot be treated as a absolute and perfect.
- Researcher being outside external analyst obviously has no access to the internal information. Therefore it is hard to characterize inside view of the organization in the study.
- The individual effort will be limited so it also limitation of the study.

3.16 Chapter Planning

Chapter-1: IT sector in India, History, Growth and Prospects.

Chapter-2: Literature Review

Chapter-3: Research Methodology

Chapter-4: Conceptual Framework of Key Financial Variables

Chapter-5: Analysis of operational efficiency of Indian IT Sector

Chapter-6: Analysis of profitability of IT Industry in India

Chapter-7: Analysis of Liquidity and soundness of Indian IT industry

Chapter-8: Comparison of Performance and Evaluaton of IT Industry in India

Chapter-9: Summery, Findings, Conclusions and Suggestions
References

8. www.nseindia.com
10. “Research Methodology” by Michael V. P., p.145

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