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Aims and Scope

Journal of Knowledge Management & Information Technology (JKMIT) is a bi-annual peer reviewed journal that focuses on fostering original research in the areas of knowledge management and information technology. Every single issue carries empirical and qualitative research papers, impressions of the industry by the academicians and people from industry on the burning topics of the society. JKMIT aims to propagate research in the areas not restricting to only knowledge management and Information Technology and covers other functional areas of business management including economics, environment and education technology. The journal is committed to influence the thought process of management thinkers and technology strategists.

Scope of the Journal

JKMIT is published in January and June every year. Its targeted readers are research scholars, academicians engaged in research and corporate with an inclination towards research. The journal provides a platform to exchange research ideas among researchers across the globe in the realm of scholarly contributions to foster empirical and theoretical research on the most burning issues faced by the corporate world and the society as a whole. Each issue comprises of scholarly contributions come from the desks of eminent researchers.

From the Desk of the Guest Editor

Dr. Rajeev Dubey

In this issue of the Journal there are a range of interesting topics which are of contemporary relevance. Chand Rashid's paper 'Art of Creating a Private Label' highlights the increasing visibility of private labels both in terms of frequency and variety in the Indian markets. These 'phantom brands', portrayed as cheaper options to the established brands have been a feature of European and American markets from many decades. Yet, what gives meaning to this paper is that it looks beyond the West and explores the increasing visibility of private label products in the Indian markets too.

In the contemporary era of neo-liberalism brand building plays a pivotal role in promoting a product or company. Sonia Dhir attempts to look through the process of successful brand building. Through a case study of Indian Premier League (IPL), Dhir has highlighted how IPL has turned into a paradigm example of brand building by providing unique image and visual voice to Cricket. Prachi Agarwal and S. M. Sajid's paper contributes to the body of research pertaining to 'person-organization value congruence'. It has analyzed the challenges for organizations to attain congruence between the organizational values of the company and individual values of the employee to optimize the job satisfaction and organizational commitment.

In contemporary scenario when we are debating about the efficacy of teaching-learning system in India- where we are grappling with the paradox of abundance of degree holders on one hand and lack of skilled professionals on the other, Ramachandran's article acquires significance as it explores the possibility of reflexive pedagogy through the use of audio-visual techniques. Through an empirical study of graduates and post graduate of higher learning B-Schools in Tamil Nadu, the article asserts that use of audio-visual significantly contributes in the skill based learning system for employability. In yet another, intriguing piece Sitaram Pandey & M K Singh have analysed relationship between the stock index and gold prices in India. Through the analysis of secondary sources, they have explored whether there is a common force driving the long-run movement of the stock prices and gold or whether individual prices are solely driven by their own fundamentals.

The final article of Bikramjit Sengupta, M A Ahmad, A K Mandal and D Ghosh investigates the road accidents pertaining to the district of Cachhar, Assam. It addresses a very contemporary issue of road safety and suggests various safety measures to prevent such incidents.

" I personally thank all contributors who have struggled hard to fulfil their commitments of article submission. I extend my heartfelt thank the reviewer's team for the critical role they have played improving the articles and I also extend my thanks to the editorial team and the publisher for bringing out the current issue well within stipulated time. I also would like to thanks the esteemed members of the editorial board who despite their busy schedules offered their valuable suggestions on different occasions during the review and publication process. Though, sincere efforts have been deployed to remove any inadvertent typographical or factual errors, however, the responsibility of authenticity of data and subsequent conclusions drawn thereon lies solely with the authors. The Editor doesn't have any responsibility whatsoever towards any further conclusion derived by any individual afterwards."

Profile of the Guest Editor



Dr. Rajeev Dubey is an Assistant Professor in the Department of Sociology, Tripura University (A Central University). His teaching and research areas have been interdisciplinary and are concerned with sociological theory, religion, and education. He has published widely in the field of new religious movements and education, including works on values in education and educational development.

He is Life Member of Indian Sociological Society and regular member of International Sociological Association and American Sociological Association. More recently he has been awarded University of Gotteingen fellowship to visit Gotteingen, Germany. He is an associate at the Inter University Centre, Indian Institute of Advanced Study, Shimla.

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Art of Creating a Private Label

Dr. Md. Chand Rashid

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Abstract

Private Labels are gradually flooding the Indian markets. Initially, European retailers had popularized the private labels. They introduced Private Labels in the groceries segment during 1970s. Later they were successfully launched in other product categories. American retailers also realized this untapped opportunity. Leading retailers like Wal-Mart, Costco, Target and K-Mart etc. have successfully developed private labels across different product categories. United States have seen the phenomenal growth of private labels during the last three decades.

The growth of organized retailing is boosting the growth of private labels in India. Large numbers of Indian consumers are now opting for private labels. Apparel and groceries categories are growing very fast. Most of the retail chains are launching private labels across all product categories. Now, private labels are prominently available in stores like Shoppers' Stop, Westside, Lifestyles, Max, Pantaloons, Reliance trends, Globus Spencer's, Food world, Big Baazar and More, etc. Retailers have built strong trust and credibility among the customer for private labels. They are not 'cheap alternatives' to national brands. They are becoming a 'preferred choice' with their own distinct identity. This article try to highlight the basic principle needed to develop and launch the private labels brands across various product categories.

Introduction

“Private label products include all merchandise sold under a retailer's brand. It can be the retailer's own

name or a name created exclusively for the products. “Private labels products are usually called as store brands, own label, retailer brand or

generics” (Kuma & Steenkamp)

Private label manufacturers' direct proximity with customers helps them to know customers' needs aptly. This has assisted them to introduce exactly the same types of products which consumers are looking for. It is quite rational that retailers will venture into those categories where there are low entry barriers, low switching costs to customers and high profit margins. Introducing private labels is not an easy task. Retailers consider many precautions and challenges in order to develop a private label. It essentially begins with finding out the product categories where private labels can be introduced. Sourcing, developing and merchandising are some of the operational challenges a retailer has to address on a regular basis.

Private labels should be developed with innovative features. Balancing quality and price is also a major challenge for the retailers. They should match the quality of the national brands. Packaging also poses a considerable challenge to the retailers. Poor packaging can be termed as inferior quality product. It has potential to tarnish the image of

the product. On the other hand superior packaging takes care of these negative feelings and easily gains acceptance of consumers. Private labels must have a Unique Selling Proposition (USP). They should provide logical reasons to customers to prefer store brands over national brands. Customers are not willing to compromise on quality. Retailers should put genuine efforts to create a niche through the use of private labels.

Private labels can also be used as 'loss leaders with the intention to increase the footfalls. As 'loss leader' private labels can attract a larger number of customers. Consequently the customers can experiment with the quality of the product. This can result in higher sales volume and boost the bottom line of the store.

A retailer should opt for a private label only when it has complete knowledge about gap in the existing product lines. It should be capable of improving the deficiencies of the national brands according to the customers' requirements. There are different key elements that go into the development of new private labels.

They can be primarily categorized into two types - rational and emotional. Private labels should also conform to the marketing mix elements. They need to possess brand values and distinct positioning. All these comprise the rational element of private labels developing.

The main element comprising the emotional ingredient is communication. Stores must communicate about its offerings to customers effectively. They should create awareness within and outside the store. Selecting appropriate media is vital to communicate with customers. Shoppers' Stop, Westside, Pantaloons, Lifestyles, Big Bazaar, Spencer and More use media campaigns innovatively to communicate with customers. They use various media to create favorable appeals for their private labels. Private labels strategy should be customer centric not the retailer. Understanding customer perspective leads to success of private labels. The process of creating private labels includes the following steps.

Identifying 'Need' gaps in the Market

The objective of creating the private labels should be crystal clear to the retailers. They can implement strategies like flexibility in pricing, creating loyalty amongst the customers, providing wider product assortments to achieve competitive advantage. A retailer has to identify the relevant needs and wants of customers before introducing a private label. The gap can be identified in terms of price, taste, quality and location preference etc. of the customers. Market survey and interview of key groups of customers help to identify customer requirements appropriately. Private labels can be used to bridge the gap in the market. The retailers need to adopt appropriate targeting and positioning strategies. The retailers should provide quality products at economical price to attract price-conscious customers to accomplish higher sales revenues.

Decision to Produce or Outsource

This step is quite significant in developing private labels. It is critical to decide whether to outsource or

producing private labels. Establishing manufacturing facilities might not be feasible in the initial stages. If the retailers decide to outsource the private labels, they ought to identify the right vendor, product quality at right price and on time suppliers.

Innovatively Promote the Private Labels

Retailers design a variety of promotional schemes like trial purchase, free samples, discounts and product bundling etc to attract the customers towards private labels. Consumers perceive lower priced products to be inferior in quality. Hence, retailers should use attractive packaging to communicate quality of the product. The retailers should adopt well-thought out positioning strategy for private labels. They should introduce innovative promotional campaign through TV, radio, signage, handbills and posters to make consumers aware of the availability of the latest private labels. Now, they can also use digital media vehicles for their campaigns. Being present on the social network sites like Facebook, Twitter and Linked In will

always pay. They should also be promoted through in-store initiatives. Unique selling proposition should be communicated to customer to highlights the benefits of private labels over national brands. Retailers should differentiate their private labels from national brands. Distinct packaging design attracts customers. It should be in tune with the tastes and temperaments of the key consumer segments. Retailers should not copy national brands packaging. The salesmen should be adequately trained. They need to have relevant and rich product knowledge. They must address customer concerns promptly. They can actually act as substitutes for mass-media advertising. Appropriate local media should be used to communicate additional features to target customers.

Establishing Benchmark for Monitoring

The final step in the development of private labels is to establish standards to review the overall performance of private labels. The retailers need to check the performance of the private

labels regularly. The performance should be in line with the desired objectives and benchmarks. In case of any discrepancy, the retailers should re-evaluate and implement the modified strategies promptly.

Conclusion

The present trends indicate that the private labels will grow significantly in the coming years. The expansion of organized in the tier II and tier III cities will boost the growth of private labels across all product categories. Consumers are becoming more discerning and discriminating in their choices. Indian consumers are price/value conscious. The retail market can survive only if quality products are offered at economical price. Keeping this in mind the retailers have adopted the private labels strategy as business model. It is a survival mantra for retailers. The future of private labels is very bright.

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The Creation of A Successful Brand: A Case of Indian Premier League

Dr. Sonia Dhir

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Abstract

The Indian premier league has been the league of its own kind in the history of Indian cricket. The entire tournament swept the nation like no cricket tournament has ever done before. Lalit Modi, the man behind Indian Premier League, ensured that this tournament reached phenomenal heights. Nonetheless the first session of IPL created history. It took Modi, 14 long years to convert his dream into reality after many failed attempts, tribulations and grueling politics. Nonetheless, this tournament gained momentum in no time and became a brand to reckon with. This case highlights all the processes and elements involved in making this tournament a successful brand.

Introduction

The Indian Premier League (IPL), better known as DLF Indian Premier League is a Twenty 20 cricket competition created by the BCCI (Board of Control for Cricket in India). It was Lalit Modi, the current chairman and commissioner of IPL and also BCCI's Vice President, who originally coined the idea to bring forth this tournament.

The league has been modeled on other professional sports leagues like the English Premier League and

National Basketball Association. The first season of IPL lasted for 46 days, commencing on 18th April 2008 to 1st June 2008. The total numbers of matches scheduled were 59 out of which 58 matches were held in 8 cities under floodlights and 1 of them was washed out due to rain. The brand building process by IPL has been discussed in detail, further. Before that, this paper brings out the fundamentals of brand building and its features.

The Creation of A Brand

To create a strong brand and maximize brand equity, marketing managers need to do the following:

- Understand brand meaning and market appropriate products in an appropriate manner.
- Properly position the brand
- Provide superior delivery of desired benefits
- Employ a full range of complementary brand elements and supporting marketing activities
- Embrace integrated marketing communications and communicate with a consistent voice
- Measure consumer perceptions of value and develop a pricing strategy accordingly
- Establish credibility and appropriate brand personality and imagery
- Maintain innovation and relevance of the brand
- Strategically design and implement a brand hierarchy and brand portfolio
- Implement brand equity management system to ensure that marketing actions properly reflect brand equity concept.

- Strong brand equity results when the consumer has high level of awareness and familiarity with the brand and holds some strong, favorable and unique brand associations in memory.

Brand equity can be built up in three major ways:

1. Through the initial choice of brand elements making up the brand
2. Through marketing activities and the design of the marketing program
3. Through the leverage of secondary associations by linking the brand to other entities

How did IPL create a Brand**A.) The Bidding Process**

The entire tournament was routed through the process of auctioning for eight teams who would finally play the matches. The eight teams who finally played for IPL's first season were: Mumbai Indians, Royal Challengers Bangalore, Hyderabad Deccan Chargers, Chennai Super Kings, Delhi Daredevils, Kings XI Punjab, Kolkata Knight Riders, Rajasthan Royals. Out of these Rajasthan Royals emerged as the winners for the first season of IPL. One of the very reasons behind IPL

becoming a huge successful brand is that through it Indian cricket has been auctioned for a whopping US \$ 723.29 million (the base price was US \$ 400 million) and the bidders for the eight teams are well known names of the Indian Incorporation and the Indian cinema like Mukesh Ambani, Vijay Mallaya, Shah Rukh Khan, Priety Zinta and the like. This in turn, attracted huge sponsorship for the tournament, at the same time making it popular amongst the masses instantly. Nonetheless, due to this very reason, BCCI got prompted to open the floor to the global sponsors for title sponsorship bids. It has been the first time that any domestic tournament has got such global attention. The board has set a base price of \$ 6 million per year for bids from potential title sponsors. In order to attract global title sponsors, the tender document for title sponsorship were posted on the IPL website and which can be downloaded by interested bidders, which simplifies the bidding procedure even for companies not yet operating in India. So the bidders are not required to buy the tender document unlike tenders for the franchisee sponsorships which needed to be purchased. Reputed and

well established firms like PepsiCo, Bharti Airtel, R-ADAG, Vodafone, Emaar-MGF, LG Electronics and DLF were among the potential Indian bidders who competed with global sponsors to win the title rights. Further, even franchisee rights owners were allowed to bid for title sponsorship.

The five-year title sponsorship rights will give the winner category exclusivity on various platforms like :

- Having naming rights to the league
- Logo of the winning bidder to be integrated along with the logo of IPL
- Branding opportunities like branding on stumps, shared branding on sight screens, inclusion in television graphics, branding on the IPL website
- In-stadia rights to promote products or services
- The winner will hold the first option to negotiate renewal of rights after the five-year term expires.

India's Sony Entertainment Television Network and Singapore based World Sport Group secured the global broadcasting rights of IPL for US \$ 1.026 billion. This is a record deal and has duration of 10 years. As a part of this deal, the BCCI would earn US \$

918 million for television broadcast rights and US \$ 108 million for IPL's promotion. Out of this total amount, 20% would go to IPL, 8 % will be the prize money and 72% would be distributed to franchisees. This

distribution of money is valid till 2012 after which IPL would go public and list its shares.

Sony WSG , then resold parts of the broadcasting rights geographically to other companies as follows:

Winning Bidder	Regional Broadcast Rights	Terms of Deal
Sony / World Sport Group	Global Rights, India	10 years at USD 1.026 Billion
Network Ten	Free-to-air television in Australia	5 years at AUD 10-15 Million
Sky Network Television	New Zealand broadcast rights	Terms not released
Setanta Sports	United Kingdom and Ireland on a subscription basis	5 years, terms not disclosed
Arab Digital Distribution	Middle East broadcast rights on ADD's ART Prime Sport channel. Will broadcast to United Arab Emirates, Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Palestine, Saudi Arabia, Syria, Turkey, Algeria, Morocco, Tunisia, Egypt, Sudan, Libya and Nigeria.	10 Years, terms not released
Willow TV	Rights to distribute on television, radio, broadband and Internet, for the IPL in North America.	5 years, terms not released.
Super Sport	South Africa and Nigeria broadcast rights	Terms not released
GEO Super	Pakistan broadcast rights	Terms not released
Asian Television Network	Canadian broadcast rights. Aired on ATN's CBN & ATN Cricket Plus channels on a subscription basis. Aired on XM Radio's ATN-Asian Radio as well.	5 years, terms not released

Source : www.wikipedia.org/wiki/Indian_Premier_League (visited on 4th Nov, 2008)

The official list of franchise owners announced and the winning bids were as follows.

Franchise	Owner(s)	Price (USD)
Mumbai Indians	Reliance Industries Limited (Mukesh Ambani)	\$111.9 million
Royal Challengers Bangalore	UB group (Vijay Mallya)	\$111.6 million
Hyderabad Deccan Chargers	Deccan Chronicle (T Venkatarami Reddy)	\$107 million
Chennai Super Kings	India Cements (N Srinivasan)	\$91 million
Delhi Daredevils	GMR Holdings (Grandhi Mallikarjuna Rao)	\$84 million
Kings XI Punjab	Preity Zinta, Ness Wadia (Bombay Dyeing), Mohit Burman (Dabur), and Karan Paul (Apeejay Surendera Group)	\$76 million
Kolkata Knight Riders	Red Chillies Entertainment (Shahrukh Khan, Juhi Chawla Mehta and Jai Mehta)	\$75.09 million
Rajasthan Royals	Emerging Media (A.R Jha, Lachlan Murdoch, Suresh Chellaram)	\$67 million

Source : www.wikipedia.org/wiki/Indian_Premier_League (visited on 18th Nov, 2008)

B.) IPL : A Revenue Generation Machine

The Indian Premier League – though still an infant compared to the \$ 3.51 billion English premier league – has proved to be runaway hit with a \$ 918 million (Rs 389 crore) coming in every year for media rights from Sony World Sporting Group, \$ 30 million (Rs 127 crore) through central sponsorships, \$

16 million(Rs 68 crore) through ticket sales , \$76 million (Rs 321 crore) from franchisee fees and another \$100 million (Rs 424 crore) through team sponsorships.

For the first few years, the IPL has offered to give the eight franchises a portion of the central sponsorship and media rights. The IPL will divide 80 percent of the revenues from Rs 389

crore in media rights with the franchise owners for the five years. Of this sum, 72 percent will be equally divided while the remaining 8 percent will be distributed on the basis of individual performance. From the fifth year, the revenue share from media rights goes down to 60 percent. This apart, 60 percent of the central sponsorships – which adds up to \$ 153 million (Rs 648 crore) for five years – will be equally divided between the team owners. So in the first year, team owners will definitely take home a guaranteed \$ 10 million (Rs 42 crore) from the central coffers.

All other local revenues – including gate revenues, franchisee sponsorship, local sponsorship, licensing programme, uniform merchandising, hospitality and premium seating, match day concessions, match day promotions and franchisee media platforms- can be retained by team owners.

While teams have started from ground zero in the first year, the key source of revenue has been the anchor or the title sponsors of individual teams. The going rate for title sponsors is \$ 3 million(Rs 12 crore) and thereafter the associate sponsors pay anything from 2-3 crore.

C.) Team cost to the franchisees

- While the franchisees have already committed a certain amount - the winning bid - they will need to pay that only over a period of 10 years, with 10 per cent being the outflow each year.
- Apart from bidding to buy the teams, the franchisees will further bid for a minimum of 16 players, each of whom will get a minimum salary of \$50,000 per season.
- The franchisees will also pay for the training of the team, the coaches, the support staff, their own promotions in media.
- The franchisee will also bear most of the expenses, including hiring of the stadia - which have already been decided by the Board - for each match.
- The franchisee will also need to look at expenses for security, promotion of their teams and other aspects, which go into the running of a team and the organization of seven matches at home.

D.) Revenue streams for the franchises

- Of the amount raised as TV rights for each year - one fifth of \$306

million for first five years and one-fifth of \$602 million for next five years -- the Board keeps 20 per cent and a further 16 per cent set aside. The remainder 64 per cent is distributed among the eight franchise owners as their income from TV rights.

- The franchisee gets the receipts of the gate, after keeping back a certain portion of tickets/ seats for the Board. That figure is about 20 per cent.
- The franchisee can also raise

further revenue from avenues like logos on T-shirts, but not the principal naming rights; merchandise and other promotions. But each of these will need to be cleared by the Board.

It should be noted that during the first season no one had expected the franchises to break even since most of them had invested huge amounts, but even then the table below shows that some of them are already profitable from Season 1.

Franchise	Revenues	Expenses	Profit/Loss (Rs. Crores)
<u>Mumbai Indians</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 20 c. Gate Receipts - 14 Total Revenues(a+b+c) - 69	a. Franchise Fees - 45 b. Team - 20 c. Advertising & Admin - 20 Total Expenses(a+b+c) - 85	Net Loss - 16(To be profitable in season 2)
<u>Royal Challengers Bangalore</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 0 c. Gate Receipts - 10 Total Revenues(a+b+c) - 45	a. Franchise Fees - 48 b. Team Expenses - 22 c. Advertising/Admin - 18 Total Expenses(a+b+c) - 88	Net Loss - 43
<u>Hyderabad Deccan Chargers</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 17 ; c. Gate Receipts - 12 Total Revenues(a+b+c) - 64	a. Franchise Fees - 45 b. Team Expenses - 24 c. Advertising/Admin - 13 Total Expenses(a+b+c) - 82	Net Loss - 18
<u>Chennai Super Kings</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 25 c. Gate Receipts - 12.8 Total Revenues(a+b+c) - 72.8	a. Franchise Fees - 36 b. Team Expenses - 24 c. Advertising/Admin - 13 Total Expenses(a+b+c) - 73	Net Loss - 0.2(To be profitable in season 2)

<u>Delhi Daredevils</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 20 c. Gate Receipts - 15.4 Total Revenues(a+b+c) - 70.4	a. Franchise Fees - 34 b. Team Expenses - 23 c. Advertising/Admin - 20 Total Expenses(a+b+c) - 77	Net Loss - 6.6(To be profitable in season 2)
<u>Kings XI Punjab</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 22 c. Gate Receipts - 9 Total Revenues(a+b+c) - 66	a. Franchise Fees - 30.4 b. Team Expenses - 25 c. Advertising/Admin - 13 Total Expenses(a+b+c) - 68.4	Net Loss - 2.4(To be profitable in season 2)
<u>Kolkata Knight Riders</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 34 c. Gate Receipts - 20 Total Revenues(a+b+c) - 89	a. Franchise Fees - 31 b. Team Expenses - 25 c. Advertising/Admin - 20 Total Expenses(a+b+c) - 76	Net Profit - 13
<u>Rajasthan Royals</u>	a. Broadcasting Rights - 35 b. Team Sponsors - 16 c. Gate Receipts - 8 Total Revenues(a+b+c) - 59	a. Franchise Fees - 27 b. Team Expenses - 13 c. Advertising/Admin - 13 Total Expenses(a+b+c) - 53	Net Profit - 6

All Figures are in crores (1 crore = 10,000,000)

Source : www.iplt20.com

What made IPL a successful brand

IPL had all the necessary ingredients to make a successful brand. Right from the inception of the idea of introducing this league into the nation to the amount of logistics that have gone into creating this as a mega event, everything has contributed to making of this brand successful. Designing a powerful brand name and bringing in the right broadcasters and corporate sponsorships for this event coupled with corraling of 80 top ICC ranked players from nine countries,

scheduling the team auctions by the big business houses through which eight, out of the fourteen, corporates bagged a team each gave this event the required glitter. This gave IPL a high level of perceived quality and created a rich brand image. Active participation by celebrities like Shahrukh Khan, Priety Zinta, Vijay Mallaya, Mukesh Ambani, Katrina Kaif, Akshay Kumar etc definitely helped create unique brand associations with the brand IPL.

The following factors have

contributed to the building of superior brand equity for IPL :

IPL was able to generate appropriate brand identity for itself as it aspired to be perceived as a mega event and promised a strong value proposition as it stood for the game of cricket integrated with cinema, media and big corporate all coming together to make it a big show.

IPL was a well positioned brand as it did occupy a distinct position in the minds of its audience as a premier league. It incorporated the right brand elements to be able to position itself appropriately in the minds of audience. The name, Indian Premier League, itself acted as a strong brand element to be able to generate enough uproar in the minds of cricket savvy Indian audience.

The involvement of media and cinema gave IPL the celebrity status. This ultimately gave the required push to the brand IPL.

IPL emerged as a well executed and consistent brand over time as it had all the necessary backing by its committee and sponsors who did everything to create maximum buzz and excitement about their brand. The growing momentum of IPL resulted in higher TRPS than expected.

Modi invested enough time, money and efforts towards assuring responsibility for his brand and was able to generate enough leverage for it as he ensured that the groundwork required to make an event like this happen was done with precision. The league involved carrying 1000 people - eight teams, nearly 700 BCCI officials and 100 representatives of sponsors, across the country every day. Over 44 days, that meant 12,000 hotel room nights and 20,000 air tickets. In order to avoid any delays, IPL committee tied up with ITC for accommodation and Kingfisher for flights along with hiring up of two jumbo jets moving a 100 member crew across the country lugging tonnes of equipment. Much of the credit goes to team management which managed to get the best out of players.

IPL Facts

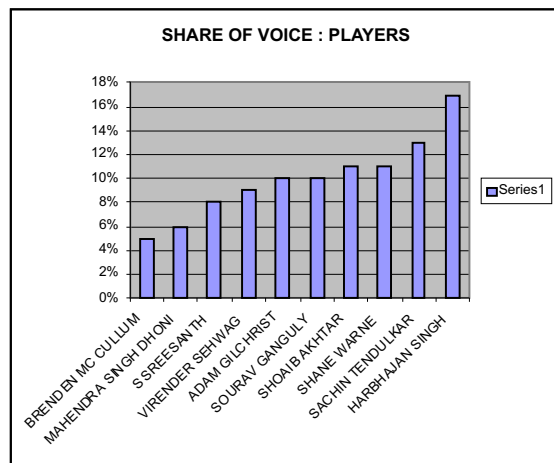
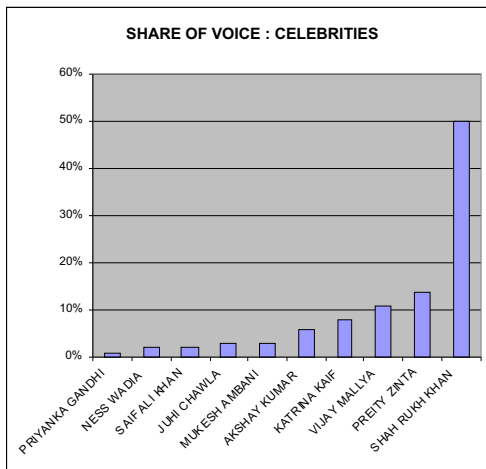
- 99million people or 76% of the total trackable TV audience of 131 million watched IPL over six weeks.
- Rs 90,000 crore is the worth of IPL including teams and sponsors.
- Rs 4800 crore is the size of cricket economy. A rise of 50% post IPL
- 59 matches were played with 2360

overs, 17610 runs, 677 wickets, 1702 fours and 622 sixers.

- 1000 people including the teams, officials and sponsors were carted around the country. 12,000 hotel room nights and 20,000 air tickets

were arranged for the 44 day haul

- Rs 350 crore is the BCCI's earnings this year via franchisee fees, share of revenues from media rights and central sponsorships.



Print Media Coverage of IPL's leading personalities.

Source : Eikona PR measurement / TAM Media Research

Conclusion

Among the many positives coming out of IPL in its first year, the stand out feature was its ability to demonstrate to the world that cricket, minus nationalism, was also practically a commercial entity. International cricket wasn't any longer the monopoly brand it once was. However, with two years having rolled by, a year mitigated round the world by news of an economic slowdown,

which has forced franchisee owners and sponsors to turn frugal, it is

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A Study on Relationship between Value Congruence and Organizational Commitment

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Abstract

In recent years, organizational value has become a prominent issue. An increasing number of organizations now boast a list of values which represent the underlying thoughts and beliefs of the individuals that work there and are intended to 'drive' how its people conduct business. Even though values are being displayed by an organization, there is no guarantee all individuals will align with them. People rarely align their behavior to values other than those they personally own. It is a major challenge for organizations to attain congruence between organizational values and individual values in order to enhance employees' work attitudes such as job satisfaction, organizational citizenship behavior, organizational commitment etc. There is an emerging body of literature on the relationship between P-O fit or value congruence and work related attitudes and behaviours (Finegan, 2000; Mc Connell, 2003; Hoffman & Woehr, 2006; Amos and Weathington, 2008). Even though the benefits and significant effects of value congruence on the organization's long term success and survival have been studied to a great extent, most of the existing studies on value congruence and its benefits on employee attitudes and behaviours have been limited in that the researches: (a) focused mostly on areas outside India (b) have studied effect of value congruence on academic environment and selective

professions such as nursing, accountants. Consequently, this study examines the effect of person-organization value congruence on three components of organizational commitment in Indian scenario with special focus on both public and private sector employees.

In this context, a survey questionnaire was administered on a sample of one hundred and ninety five managers in four private and four public sector organizations. In this study, descriptive statistics was used in this study to obtain a demographic profile of the participants and to report the means and standard deviation of various dependent variables. T –test was used to evaluate the differences between the mean scores of test variables (affective, normative and continuance commitment) for two groups (public sector and private sector). Correlation analysis and simple regression analysis were performed to test the hypotheses so as to examine the relationship between independent variable (value congruence) and dependent variables (affective, normative and continuance commitment) and investigate the role of value congruence in explaining each dimension of organizational commitment. The findings indicated that affective, continuance and normative commitment of public employees is significantly higher as compared to private employees. The results also suggest positive correlation between person-organization value congruence and affective commitment and normative commitment. However, no significant correlation was found between person-organization value congruence and continuance commitment. Thus, in the light of this study, it is suggested that organizations need to pay due attention to the concept of person-organization value congruence and its relationship with various outcome variables so as to improve organization's performance. This study adds substantial value to the researches related to value congruence concept and is very significant for the human resource management practices such as recruitment, socialization and employee training.

Key words: Person-Organization Value Congruence, Affective Commitment, Normative Commitment, Continuance Commitment

Introduction

Values are integral part of the everyday lives of employees both personally and professionally. They are referred to as “desirable states, objects, goals, or behaviors, transcending specific situations and applied as normative standards to judge and to choose among alternative modes of behaviour” (Schwartz and Bilsky, 1987). Based on social adaptation theory, values are a type of social cognition and serve as the underlying framework in every individual to guide the development of attitudes and behaviours in a given environment. Individual's make an entry in an organization by keeping some preconceived notions of what “ought” and what “ought not” to be. They have their own interpretations of right and wrong and consider some behaviours or outcomes to be preferred over others. Meglino and Ravlin (1998) explain that “values have been studied from the aspect of their influence on the behavioural responses of individuals, employee problems in the workplace, unethical business practices, and a variety of social ills”. But, values are not always in harmony within organizations or within individuals (Hofstede, 1980;

Fatehi, 1996). Suppose an employee enters an organization with a preconceived notion that assigning salary on the basis of performance is correct, than, assigning pay on the basis of seniority and he finds that the organization rewards seniority and not the performance; then this employee will certainly feel disappointed and this in turn can lead to his job dissatisfaction and he is more likely to exert lower levels of effort in the job. Thus, the alignment or harmony between individuals' value system and organizational values has a very crucial role in influencing employees' attitudes and behaviour.

Since the competition between businesses organizations is increasing on a global scale, the organizations these days are placing high importance on their value systems. Most successful organizations place a great deal of emphasis on having strong values systems (Wakhlu, 1986). Organization's success in this competitive era is determined by the strongly held and broadly shared values of the organization and its employees (Chatman, 1991; McDonald & Gandz, 1991). According to a study conducted by Posner,

Kouzes and Schmidt (1985), it was found that common values between individuals and organizations proved very beneficial for both the individuals and the organization. Some of the key findings of this study were that “shared values contributed to feelings of personal success and accomplishment; increased organizational commitment; and helped lessen feelings of job - related stress and anxiety among the employees of the organization”. The researchers confirmed that shared values or value congruence make a difference for both individual and organizational vitality. Thus, shared values or value congruence encourage productive relationships to develop between employees and employers, increase productivity and job satisfaction, and reduce absenteeism and turnover intent of the employees. While this may be true, the commitment of the people in the organization is also essential to ensure the successful implementation of the organizational policies and plans. It is argued, that while shaping the appropriate values or culture that is important to the organization, ensuring the necessary level of commitment among employees or

managers are undeniably important so as to ensure successful implementation of the organizational strategies and plans of actions. Organizational commitment is a psychological state that characterizes the employee's relationship with the organization. This clearly indicates one's desire to continue his/her membership in the organization. A committed employee is one who stays with the organization under any favorable or unfavorable circumstances affecting the organization (Meyer and Allen, 1997). Past research on commitment showed that it has an impact on job performance, turnover (Mowday et al., 1982), pro-social behavior (O'Reilly and Chatman, 1986), and turnover intentions or likelihood (Porter et al., 1974), and absenteeism (Angle and Perry, 1981). Porter, Steers, Mowday, and Boulian (1974) defined organizational commitment as “a strong belief in and acceptance of the organization's goals and values, willingness to exert considerable effort on behalf of the organization, and definite desire to maintain organizational membership”. This definition calls attention to the importance of values in determining

one's organizational commitment. A similar analysis by Meyer and Allen (1991) identified a conceptualization of Organizational commitment with three distinct components. The first is affective commitment, which refers to employee's emotional attachment to, identification with, and involvement in his/her organization. The second is Continuance commitment which is related to the cost factor that employee associates with leaving his/her organization. The employees high on continuance commitment may not be able to afford to move on, or family attachments may dictate that they stay in place for convenience. The last is normative commitment that refers to the employee's feelings of obligation to stay with his/ her organization. Employees high on normative commitment remain in the organization because of their sense of loyalty and fairness. Thus, it can be argued that, a person whose own values match with the operating values of the organization is more likely to be committed with the organization as compared to the person with differed personal and organizational values.

Many researchers have explored the

relationship between P-O fit or value congruence and work related attitudes and behaviours (Boxx, Odom, & Dunn, 1991; Posner, 1993; Finegan, 2000; Mc Connell, 2003; Hoffman & Woehr, 2006; Amos and Weathington, 2008). However, most of the researches have focused mostly on areas outside India (Posner, 1993; Allen & Meyer, 1996, Gill, 1999; Finegan, 2000; Silverthorne, 2004; Wheeler, Gallagher, Brouer and Sablynski, 2007; Amos and Weathington, 2008) whereas it has been explored that people react differently to values in different cultures (Erez & Earley, 1993; Trompenaars & Hampden-Turner, 1998). Additionally, a review of the existing literature on value congruence reveals that researches have been done in academic environment and on selective professions such as nursing, accountancy (Tepeci, 2001; Mc Connell, 2003; Saleem, Anan & Ambreen, 2011; Ting & Darla, 2015). Furthermore, most of the researchers have looked at organizational commitment as uni-dimensional variable, failing to recognise that value congruence may affect each type of organizational commitment

(affective, continuance and normative) differently. Consequently, this study will look at the impact of value congruence in Indian scenario with special focus on both public and private sector managers. Further, this research will examine the relationship between value congruence and the varied types of organizational commitment. The knowledge gained from this study will assist counsellors in helping individuals select appropriate workplace setting that corresponds with the individual's values. On the other hand, workplace organizations may be able to use the information from this study to accurately place potential employees, which may increase retention and thereby reduce the expense of training and re-training employees. Also, more appropriate placement will facilitate employee satisfaction and organizational commitment. This research also provides an important contribution in better understanding the impact of value congruence on organizational commitment in a developing context, which may be different from those in the more established western context.

Literature Review

Value Congruence

The studies on the relationship between personal values and organizational values along with its implications and consequences on the organizational performance, work attitudes and outcomes have increased recently (Kristof & Brown et al., 2005; Hoffman & Woehr, 2006; Edwards & Cable, 2009; Hoffman, et al., 2011). Hoffman et al. (2011) conducted a study to find out the impact of personal and organizational values on organizational outcomes. It was found that the values formed the basis for constructive work outcomes in the organization. Also, the study found that the growing interest on personal and organizational values is due to the dynamic and challenging nature of the working environment. The importance that organizations place on values, influence the employees to be more rationale, believe in self-sacrifice, humanity and also feel more attached to their respective organizations. All these benefits of placing importance on values, have led many researchers to argue that by focusing on values, organizations can get the desired outcomes required in today's organizational climate (Jukiewicz &

Giacalone, 2004). Also, organizations are finding the possible ways through which they can enhance the positive links between values and employee outcomes. This has led to a substantial increase in the research related to value congruence (Bardi & Schwartz, 2003).

Value Congruence has been conceptualized in various ways by different researchers. Rokeach (1973) suggested that “the correlation between one's own values and the perceived values of other persons or groups is a measure of perceived similarity, or of positive or negative identification with (or alienation from) others” (Rokeach, 1973). According to Byrtek (2000) “Value congruency or alignment of values is said to exist to the degree to which preferred values of the member for the group or organization, align or correspond with the shared values the member perceives as constituting the existing shared values system”. McDonald (1993) measured value congruence in the work environment. He defined value congruence as “the degree to which an individual employee's personal values (preferences) are congruent with his or her work organization's values (conceptions of

the desirable) as manifested within its culture or sub-cultures”.

Organizational Commitment

Mowday et al. (1979) posited that organizational commitment holds greater significance as a variable than job satisfaction because it is a more dependable indication of an employee's identification with and involvement in an organization over the long term. Individuals who are committed to the organization are less likely to leave their jobs than those who are not committed. Individuals who are committed to the organization tend to perform at a higher level and also tend to stay with the organization leading to decrease in turnover and increased organizational effectiveness. (Porter et al., 1974). Thus like personal and organizational values, the concept of organizational commitment have occupied a prominent place in organizational behaviour research and are of great interests to various researchers and organizations.

According to Porter, Steers, Mowday, and Boulian (1974), OC generally could be characterised by three aspects of one dimension. These are (a) a strong belief in, and acceptance

of, the organisation's goals and values, (b) a willingness to exert considerable effort on behalf of the organisation, and (c) a strong desire to remain with the organisation and to work hard toward its goals. More recent research has postulated that organisational commitment is a multi-dimensional construct (Allen and Meyer 1990; Allen and Meyer 1996) consisting of affective, continuance and normative commitment and that these constructs develop from different antecedents. Affective commitment refers to an employee's emotional attachment to, identification with, and involvement in a particular organisation. Continuance commitment refers to commitment based on the costs that the employee associates with leaving the organisation. Normative commitment refers to the employee's feelings of obligation to stay with the organisation. Given that values play such an important role in the definition of commitment, it stands to reason that a person whose personal values matches the operating values of the organization would be more committed to the organization than a person whose personal values differed from the organizations.

Past Research on Value Congruence and its Effects

Boxx et al. (1991) conducted a study on 387 highway and transportation department executives to examine the impact of organizational values and value congruence on employees' job satisfaction, organizational commitment and their cohesion within the organization. The study findings specified that both organizational values and value congruence have an influence on job satisfaction, organizational commitment and cohesion. It was found that the employees were more satisfied and committed in the organizations that gave more importance to the values and had high value congruency.

Posner and Schmidt (1993) conducted a survey on one thousand American managers to identify levels of congruency and incongruency between personal and organizational values and their impact on work attitudes and perceptions. Results indicated that managers in the high congruence level were found to have the greatest level of commitment, success and credibility of senior management.

Vandenberghe (1999) conducted a study in the health care industry of Belgium. He examined the impact congruence between value preferences of new recruits and organizational culture on employee turnover. Results indicated that “recruits having value profiles similar to their employing organizations were most likely to stay with the organization during the early employment period”.

Finegan, J. E. (2000) examined the impact of person and organisational values on organisational commitment by using the value taxonomy developed by McDonald and Gandz (1991). The values were clustered into 4 categories (a) bottom line (e.g. diligence, experimentation, economy, logic) (b) vision (e.g. openness, initiative, creativity, development) (c) adherence to convention (e.g. cautiousness, formality, obedience) and (d) humanity (e.g. cooperation, moral integrity, fairness, courtesy, consideration, forgiveness) with the help of factor analysis. The researcher tried to examine the relationship of each cluster of values with each type of commitment (i.e. affective, continuance and normative). The data was collected from 300 employees of

a large petrochemical company. The results indicated that different clusters of organizational values predicted different components of commitment.

Silverthorne (2004) conducted a study in Taiwan to examine the relationship between organizational culture and P-O fit and its impact on organizational commitment and job satisfaction. The results showed significant positive relationship between P-O fit and job satisfaction and organizational commitment.

Tyagi and Gupta (2005) examined the relationship between P-O fit, tenure, innovation styles, and organizational commitment using data collected from 103 managers. The results of the study showed that P-O fit between individual and organizational values tends to increase the individual's attachment and involvement with the organization. The study also gives various implications that in the wake of a rapidly changing environment, organizations need to look critically at the concept of P-O fit and accordingly design their selection and socialization practices.

Andrews, Baker & Hunt (2010) conducted a study “to explore the relationship between corporate

ethical values and person-organization fit and the effects on organizational commitment and job satisfaction". Data was collected from 489 participants. It was found that corporate ethical values has a significant and positive impact on person- organization fit and this relationship between P-O fit and corporate ethical values was positively related to commitment and job satisfaction.

Saleem, Anan & Ambreen (2011) examined the relationship between Person-Organization fit, organizational commitment and knowledge sharing attitude of employees. The data was collected from 315 academic managers of government higher education institutions. The authors found a positive and significant relationship between P-O fit and organizational commitment. They also found positive relationship between P-O fit and knowledge sharing attitude. The study indicated that employees with high level of organizational commitment exhibit more willingness to share new ideas, information and knowledge. Ting & Darla (2015) conducted a study to examine the relationship between employee- organization value

congruence and job attitudes across various occupational groups, with the focus on different levels of nurses. The data was collected from nursing staff in a Midwestern state in the USA.

Results indicated that value congruence was positively associated with nurses' job satisfaction and organizational commitment, but negatively related with turnover intention. The results also revealed that the relationship between value congruence and job satisfaction and organizational commitment were found more pronounced among nurses of lower occupational level.

From the above literature, it appears that organizational commitment played an important role in promoting organizational success, and this could be achieved by assuring a match between personal values and organizational values. Despite good reasons that the relationships between person-organization value congruence and organizational commitment have been extensively studied, most of the existing studies have been limited in that the researches: (a) focused mostly on areas outside India whereas it has been explored that people react differently to values in different

cultures ; (b) have studied effect of value congruence on academic environment and selective industries such as nursing, sales, manufacturing, accountants;. And (c) Most of the studies reviewed has included only one measure of commitment. Consequently, this study will look at the impact of value congruence on all the three measures of organizational commitment (affective, continuance and normative) in Indian scenario with special focus on low to middle level managers of public and private sector organizations.

Theoretical Framework

The theoretical framework of this study is shown in Figure 1. This study examined the impact of person-organization value congruence on three types of organizational commitment (Affective, Normative and Continuance) in four public and four private sector organizations of Delhi NCR. Thus, person-organization value congruence was chosen as independent variables and affective commitment, normative commitment and continuance commitment as the dependent variables for testing the hypotheses.

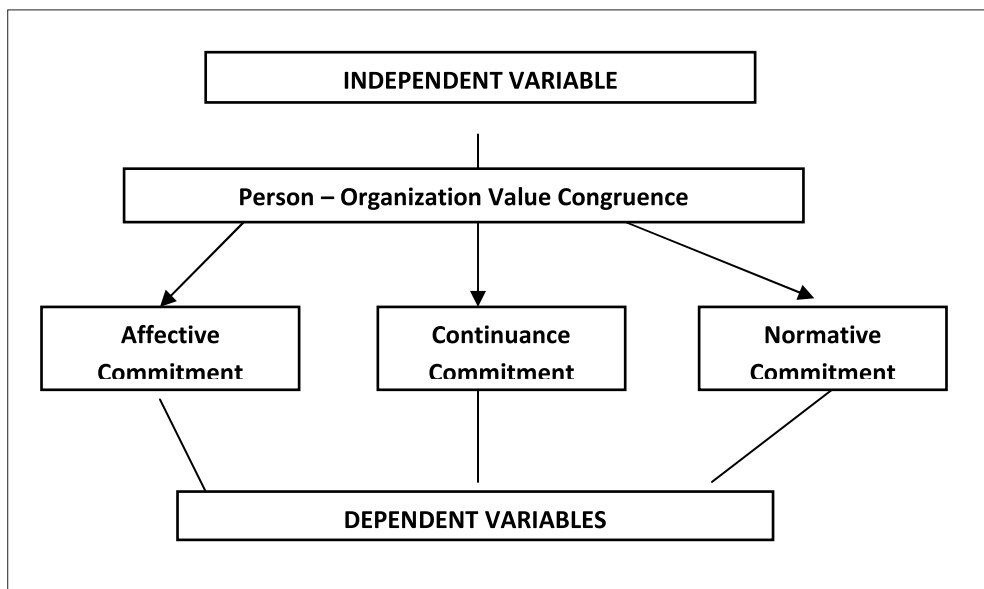


Figure 1: Theoretical framework on the relationship between independent and dependent variables

Hypotheses

In the theoretical framework, the premise is that the independent variable (person-organization value congruence) is a predictor of affective, continuance and normative commitment. As such, the following hypotheses were advanced.

H1: There is no relation between Person – Organization Value Congruence and Affective Organizational Commitment of employees.

H2: There is no relation between Person – Organization Value Congruence and Continuance Organizational Commitment of employees.

H3: There is no relation between Person – Organization Value Congruence and Normative Organizational Commitment of employees.

Methodology

Participants

The final sample consisted of 195 managers working in different departments of both public and private sector organizations. Among 195 managers 65% were in the age group ranging from 30-39 years and rest 35% of the managers were found

to be located in the age bracket of 40-59 years and above. Of participants, 67.2% were male managers and 32.8% were female managers. Regarding their marital status 58.7% were married and 41.3 % were single. With respect to the academic status 83% of the participants were post graduate and 12.9% were graduate.

Procedure

A survey questionnaire was distributed to two hundred managers in four private and four public sector organizations. One hundred and ninety five filled questionnaires were returned from this population. The participants were instructed to refrain from providing any identifying information on the survey and detailed information about the study was given to them, and both verbal and written consent was obtained from them before conducting the survey.

Measures

Value Congruence: This research study used the values taxonomy developed by McDonald and Gandz's (1992) to assess value congruence. McDonald and Gandz (1991) modified the Rokeach (1970) list of eighteen

values for utilization within an organizational context. McDonald and Gandz (1992) value taxonomy was rated by the study participants on a 7-point scale, with responses ranging from “not very important” (1) to “very important” (7). All the participants were asked to rate the value list twice: once with respect to the individual's personal values and a second time with respect to his/her perception of how important the value is to their organization.

Organizational Commitment: This research study used the “Three Component Model of Employee Commitment Survey” originally developed by Meyer and Allen (1991) to measure affective, continuance and normative commitment of the employees. The original version of the instrument included a total of 24

items, with 8 items in each scale. The revised version (Meyer, Allen & Smith, 1993) contained 18 items, six for each types of commitment, and has been used in this research. The instrument uses a 7-point Likert-type scale, with responses ranging from “strongly disagree” (1) to “strongly agree” (7). Allen and Meyer (1990) reported that the reliability coefficients for ACS, NCS, and CCS were .87, .79, and .75, respectively. In the present study, the reliability coefficients for ACS, NCS, and CSS were .81, .70, and .72 respectively.

Results and Discussion

Descriptive statistics of Organizational Commitment

Table 1 shows the descriptive statistics of all three types of organizational commitment.

Table 1: Descriptive Statistics of Organizational Commitment

Descriptive Statistics of Organizational Commitment					
	N	Minimum	Maximum	Mean	Std. Deviation
Affective Commitment	195	1.50	7.00	5.1134	1.40216
Continuance Commitment	195	1.00	7.00	3.8935	1.30545
Normative Commitment	195	1.00	7.00	4.6538	1.31320

The managers in the study demonstrated moderately high levels of affective and normative commitment. However, the managers demonstrated moderately low level of continuance commitment. Among the managers participating in the study, affective commitment was the strongest of the three dimensions of commitment with a mean of 5.11. This indicates that the managers had a relatively stronger sense of commitment to the organization based on their identification with organizational values. With a mean of 3.8, continuance commitment was the weakest dimension of commitment and reflects relatively lower sense of commitment based on their perception that significant sacrifices need not be made by leaving their current organization. Commitment based on a sense of obligation (normative commitment) was slightly above neutral with a mean of 4.65 and indicate that there is a moderate sense of commitment among the managers regarding their sense of obligation to continue in the organization. These findings indicate that the managers' commitment was derived from an emotional attachment based on shared values

and sense of obligation to remain with their organization.

Comparison of Organizational Commitment between Public and Private Sector Organizations

This study was conducted in eight organizations, four public sector and four private sector organizations. Thus, an attempt was made to understand the impact of the employment sector on Organizational Commitment of the managers. There are significant differences in the nature of employment in the public and private sector in India, which are likely to have different implications for the nature of commitment. Therefore, it is appropriate to explore these sectoral differences and speculate likely impact organizational commitment of Indian managers. To examine these differences between public and private organizations, independent sample t-test was applied.

Table 2: Comparison of Organizational Commitment between Public and Private Sector Organizations

		Public	Private	t-value
	SD	.83	1.12	
Affective Commitment	Mean	5.41	4.77	3.258**
	SD	1.34	1.39	
Continuance Commitment	Mean	4.05	3.70	1.902
	SD	1.31	1.27	
Normative Commitment	Mean	4.86	4.41	2.383*
	SD	1.25	1.35	

** $p \leq .01$; * $p \leq .05$

Table 2 clearly shows that Organizational Commitment was more in the Public sector organizations. Public sector organizations have shown higher values on all the constituents of organization commitment. The results of t-test show a significant difference between the organizational commitment levels of public sector and private sector employees in terms of affective and normative commitment at a significance level of 1% and 5 % respectively. However, the results of t-test do not show any significant difference between the commitment levels of Continuance Commitment of public sector and private sector employees. These findings are in consistency with the previous empirical researches.

Sharma & Bajpai (2010) stated that “public sector organizations provide higher levels of perceived job security and these organizations have a proper formal system to hire and retrench employees from the organization”. Thus employees in public sector organizations feel generally more secured and they have an advantage of permanent livelihood and remuneration which make them a bit more committed to their organization (Sood et al, 2012). On the other hand, private sector organizations lack in providing such kind of psychological job security to the employees. The private sector employees have less job security and are constantly striving to deliver more and more in best possible manner. They do not involve so much in their organization and do not internalize the value of the

organization as they do not know when they are going to leave the organization and join the newer one (Sood et al, 2012). As a result, employees in private organizations always have a feeling of job insecurity and keep thinking of switching the job whenever they perceive a better opportunity elsewhere. The findings of this study are in contradiction to the previous findings (Goulet and Frank, 2002; Rachid, 1995; Zeffane, 1994 and Buchanan, 1974) which stated greater organizational commitment with private sector employees as compared to the public sector employees. Though these studies are not consistent with the findings of the present study, the result of the present study are contradictory due to the cultural dimensions. "Indian employees have a different cultural orientation and they have a different understanding about the job status as compared to employees of other nations" (Sharma & Bajpai, 2010).

Hypotheses Related Analyses

The purpose of this study was to determine if the congruence between personal and organizational values of managers would be related to their organizational commitment. In order

to use person organization value congruence variable in analyses, scores of personal values (PV) and manager's perceived organizational values (OV) were totalled separately. After that these two scores (PV Total and OV Total) were subtracted from each other. This difference between personal values and perceived organizational values were used in analyses. Less the differences between two scores means higher person-organization value congruence. The degree of difference revealed the more degree of congruence, conversely the greater the difference the less value congruence between the personal values and organization values.

For the purpose of examining the relationship between independent variable (value congruence) and dependent variables (affective commitment, normative commitment and continuance commitment) correlation analysis was performed and to investigate the role of value congruence in explaining three types of organizational commitment; namely affective, normative and continuance commitment regression analysis was performed. Thus, Pearson correlation and Regression

Analysis were used to test the proposed hypotheses.

Relationship between Person-Organization Value Congruence and Affective Commitment

Pearson Correlation and simple linear regression analysis was used to examine the relationship between person-organization value congruence and affective commitment (Table 3).

Table 3: Correlation between “Personal-Organizational Value Congruence and Affective Organizational Commitment”

Correlations			
		Affective Commitment	Value Congruence
Affective Commitment	Pearson Correlation	1	-.242**
	Sig. (1-tailed)		.000
	N	195	195
Value Congruence	Pearson Correlation	-.242**	1
	Sig. (1-tailed)	.000	
	N	195	195
**. Correlation is significant at the 0.01 level (1-tailed).			

Table 3 shows a significant negative relationship ($r = -.242$) between Affective Commitment and Person - Organization Value Congruence. Here researcher would again like to note that the scale testing person-organization value congruence is actually the difference between personal values and organizational values. The smaller the difference between personal and organizational values the higher the level of value congruence (Li, 2006). Therefore, negative correlation between

affective commitment and value congruence measures shows positive effect of value congruence on affective commitment. Therefore, correlation was significant at 1% probability (P) value in one tailed test. These findings indicate that managers who felt a stronger connection to their organizations as indicated by high degrees of congruence also exhibited higher levels of affective commitment (strong emotional attachment) to the organization.

Table 4: Predicting Affective Organizational Commitment from Person – Organization Value Congruence

Dependent Variables	Value Congruence				
	Beta (β)	Adj. R^2	T	F	P
Affective Organizational commitment	-.242**	.153	-3.450**	11.900**	.001**

** $p \leq .01$

Table 4 shows the results of linear regression analysis. It appeared that person – organization value congruence significantly predicted affective organizational commitment and explained 15.3% of its variance. It is found that managers' affective commitment for the organization increased ($\beta = -.242$, $p < .01$) when value congruence was high. This result revealed that person – organization value congruence is predictive of affective commitment. Thus, the second hypothesis (H2) of the study ***“There is no relation between Person – Organization Value Congruence and Affective Organizational Commitment of employees”*** was rejected.

These findings are consistent with the previous empirical studies (Silverthorne, 2004; Finegan, 2000; and McConnell, 2006). These results indicate that managers who felt a stronger connection to their

organization as indicated by higher degrees of congruence also exhibited higher levels of commitment to the organization based on a stronger emotional attachment and identification with its values. The positive relationship between person-organization value congruence and affective commitment could be due the inherent nature of affective commitment. According to Meyer and Allen (1991), “Affective commitment occurs when the employees perceive an emotional attachment to the organization or identify with the organization”. Alignment or match between the person and organizational values is imperative in building employees' emotional attachment or identification with the organization. Thus, more value congruence is expected to foster such an emotional attachment and thereby results in greater levels of affective commitment.

Relationship between Person-Organization Value Congruence and Continuance Commitment

Table 5 below shows the result for correlation between person - organization value congruence and continuance commitment.

Table 5: Correlation between “Personal-Organizational Value Congruence and Continuance Organizational Commitment”

		Continuance Commitment	Value Congruence
Continuance Commitment	Pearson Correlation	1	-.010
	Sig. (1-tailed)		.447
	N	195	195
Value Congruence	Pearson Correlation	-.010	1
	Sig. (1-tailed)	.447	
	N	195	195

No significant correlation between Continuance Commitment and Person-Organization Value Congruence was found in this study. This finding is consistent with the previous research that reports no significant relationship between continuance commitment and value congruence (Amos & Weathingnton, 2008). According to Allen & Meyer

(1990), “Continuance commitment refers to an employee working

Table 6: Predicting Continuance Organizational Commitment from Person – Organization Value Congruence

Dependent Variables		Value Congruence			
	Beta (β)	Adj. R ²	T	F	P
Continuance Organizational commitment	-.002	-.005	-.022	.000	.983

explained 0% of its variance. This result revealed that person – organization value congruence is not predictive of continuance organizational commitment. Thus, the third hypothesis (H3) of the study *“There is no relation between Person – Organization Value Congruence and Continuance Organizational Commitment of employees”* could not be rejected.

These findings are consistent with the previous empirical studies (Gill, 1999 and Amos & Weathington, 2008) where value congruence did not significantly predict the continuance commitment. However these findings are in contradiction to the findings reported by Finegan (2000). Failure of this study to find significance in relationship between continuance commitment and value congruence may be attributable to the inherent economic nature of continuance commitment. An employee with high continuance commitment remains in the organization because he finds no other better option available with him elsewhere (Allen and Meyer, 1990). As continuance commitment addresses an individual's perception of his or her need to remain with an organization, a high level of such commitment may

better prepare or provide a greater tolerance for poor congruence (or dissonance) between personal and organizational values. A low sense of continuance commitment, in contrast, may lead an individual to feel “stuck” and need to remain as he or she sees no other viable alternatives or they may feel a sense of need to continue in affirmation of their call. In either case, the presence of congruence or dissonance of values may be less significant.

Relationship between Person-Organization Value Congruence and Normative Commitment

Table 7 below shows the result for correlation between person-organization value congruence and normative commitment.

Table 7 shows a significant negative relationship ($r = -.294$) between Normative Commitment and Person - Organization Value Congruence. Since the scale testing person-organization value congruence is actually the difference between personal values and organizational values. The smaller the difference between personal and organizational values the higher the

Table 7: Correlation between “Personal-Organizational Value Congruence and Normative Organizational Commitment”

Correlations			
		Normative Commitment	Value Congruence
Normative Commitment	Pearson Correlation	1	-.294 **
	Sig. (1-tailed)		.000
	N	195	195
Value Congruence	Pearson Correlation	-.294 **	1
	Sig. (1-tailed)	.000	
	N	195	195
**. Correlation is significant at the 0.01 level (1-tailed).			

level of value congruence (Li, 2006). Therefore, negative correlation between normative commitment and value congruence measures shows positive effect of value congruence on normative commitment. Therefore, correlation was significant at 1% probability (P) value in one tailed test. Table 8 shows the results of linear

regression analysis that was employed to determine the influence of person-organization value congruence as predictor of normative organizational commitment. It was found that person – organization value congruence significantly predicted normative organizational commitment and explained 18.2% of its variance. It is

Table 8: Predicting Normative Organizational Commitment from Person – Organization Value Congruence

Dependent Variables		Value Congruence			
	Beta (β)	Adj. R ²	T	F	P
Normative Organizational commitment	-.294**	.182	-4.266**	18.195**	.000**

** $p \leq .01$

found that managers' normative commitment for the organization increased ($\beta = -.294$, $p < .01$) when value congruence was high. This result revealed that person – organization value congruence is predictive of normative commitment. Thus, the fourth hypothesis (H4) of the study ***“There is no relation between Person – Organization Value Congruence and Normative Organizational Commitment of employees”*** was rejected.

These findings are consistent with the previous empirical studies (O'Reilly et al, 1991; McDonald and Gandz, 1991; Finegan, 2000; and McConnell, 2006) where there was a significant positive relationship between normative commitment and value congruence. However these findings are contrary to the study conducted by Sims and Kroeck (1994) that did not find any significant relationship between normative commitment and value congruence. These results indicate that managers with higher degrees of congruence also exhibited higher levels of commitment to the organization based on a stronger sense of loyalty and moral obligation to stay with the organization.

Implications

This research offers several implications for the business organizations and the human resource managers. By studying the relationship between value congruence, and organizational commitment, organizations can gain information that will increase their ability to utilize appropriate strategies to help attract and retain qualified and effective managers. The findings of this study suggest that organizations should focus on enhancing their ability to attract candidates who share their values by effectively communicating these values during the hiring process. Second, human resource practices such as socialization programs can be adopted in order to maintain and improve the level of value congruence of employees. The process of socialization should emphasize on the fit between new employee and the organizational culture. This fit should be made comfortable for the new employee and the organization. Emphasizing on the person-organization value fit during the socialization process helps in increasing employee effectiveness as

the employees who feel that their values match with those of the organization experience more job satisfaction and are better committed towards the organization. Third, organizations should choose the best training programs to match the strategic goals of the organization that will differentially influence employees' perception of P-O fit. Providing formal training programs emphasizing values will also enhance the development of value congruence between employees and their organization.

Conclusion

On the whole, this research showed that person – organization value congruence plays a significant role in determining employees' organizational commitment. The results revealed that congruence between individual and organizational values tend to enhance the individual's attachment and involvement with the organization. When there is a match between the organizational values and the individual values, people tend to be more emotionally and normatively committed to the organization. Thus,

in the light of this study, it is suggested that organizations need to pay due attention to the concept of person-organization value congruence and its relationship with various outcome variables so as to improve organization's performance. Thus, this study adds substantial value to the researches related to value congruence concept and is very significant for the human resource management practices.

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Skilled Based Learning System for Employability – With Reference to B-schools From Empirical Perspective

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Abstract

The Teacher must use different innovative teaching technologies that appeal to the different senses. An Audio-visual aids is not only seen but also heard. When such a Audio-visual aids that appeals to different senses, called multi-sensory approach, is used, it makes teaching and learning effective. The Teacher can make use of Audio-visual aids to suit his purpose and can make clear a difficult concept even to a below-average student very easily. Audio-visual AIDS supplies a concrete basis for conceptual thinking. They give rise to meaningful concepts to words enriched by meaningful association. Researchers have also recommended that in education, the appeal should be to the mind, chiefly through the visual and auditory sense organs, since it is possible that most of our learning is absorbed through these. Audio Visual aids or Graphic aids are the form of visuals that are represented on plane surface. The subject matter areas that are represented in Audio Visual aids or Graphic aids are in an abridged and easily understandable form. They convey meaning mainly through relatively conventionalized symbols that are nearer to reality perceptually than verbal symbols. They secure the attention of the pupils by their attractive format and simplicity of layout. They convey the expected message by combination of visual and pictorial message made meaningful by suitable captions. Pictures and words blended in harmony deliver the required information. The idea conveyed by any graphic aid should be a single concept. The layout and words should not be complicated so as to puzzle the viewer and make him lose interest in the same. The

statement "one good visual which can secure and maintain attention and educate the viewer in the desired area is worth a thousand words" is quite correct. Graphics could be truly considered as the shorthand language of the idea presented. The criteria for good graphics are that they should be simple, bold, legible brief and have adequate margins. The present paper finds out the students attitude towards audio-visual aids used by the Teachers. A sample of 500 students of graduates and post graduate of higher learning B-Schools in Tamil Nadu selected district namely, Cuddalore, Trichy, Coimbatore, Chennai, Tirunelveli on the basis of convenient sampling technique. The results revealed that the analysis the result concluded that the students have positive attitude towards audio-visual aids used by the Teachers and emerge new dimension for learning and applicability for employability skill development.

Keywords: *Students Attitude, Audio Visual aids, Graphs, Diagrams, Posters, Maps, Comics, Cartoons, Charts, Video Conference.*

Introduction

The natural way of learning by children is mainly through the use of senses. Of all these senses, the sense of sight provides rich experiences to the individual. Most of the experiences that a person gains in this world are received through this sense of sight. Impressions created by the sense of sight cannot easily be erased. A picture will not only attract the attention of a pupil but also hold it for long as it appeals to the sense of sight.

That is why; visual literacy is given more importance today.

Employability

The employability is buzz word in the recent days. How to view employability? There is no any agreement on this issue till the time. In a general sense, employability means having employed. Employability refers to a person's capability of gaining initial employment maintaining employment, and obtaining new

employment if required (Hillage and Pollard, 1998). Employability is the ability of the graduate to get a satisfying job. (Harvey, 2001). Employability is having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful (Pool and Sewell, 2007). Employability skills as including personal image, international skills, and good habits and attitudes, Employability is the capability to move self-sufficiency within the labour market to realise potential through sustainable employment, The probability, for a given groups, at a given time, of finding a job or emerging from unemployment.

Skills Based Education – Need of the Hour

In an Indian setting, the lack of facilities and lack of motivation in acquiring knowledge for the sake of knowledge has always been felt during discussion and interaction in classroom setting. There is a felt-need

among the present school Teachers to make use of newer techniques and strategies for better understanding and better presentation of knowledge of science in the school curriculum. In India, the survey conducted by the Kothari Commission (1964-66) recognized the lack of quality in science teaching and called for evolving new strategies and techniques so as to improve the quality of science and research. The existing organized methods of teaching-learning cannot withstand the challenge of the tremendous development of new ideas and the new information technologies which are independently moulding the behavior and learning styles of individuals and societies at large. This means that the existing teaching-learning strategy has to be changed. An effective teaching method requires selection and application of appropriate technological devices to maximize the learning. The recent development in science and technology has brought out many technological tools to keep the Teachers and learners perform their

responsibilities effectively and efficiently. A judicious application of technology makes learning environment more attentive and interesting. Particularly, the teaching of science subjects requires extensive application of information and technology in order to maintain a good learning environment. Kothari Commission (1964-66) tells that there are three kinds of people: i) those who learn through hearing, ii) those who learn only after seeing and, iii) those who learn only after hearing and seeing. When computers are introduced into the learning environment, all the three kinds of people will be benefited. The integration of audio, video along with interactive mode constitutes the concept of multimedia.

Audio-visual AIDS (Attention, Interest, Desire, and Satisfaction) technology for education offers a number of benefits. They allow the Teacher to structure and present the information with varying special effects to the students. They can also be used for the storage of audio-visual information of various types. Audio-visual AIDS

provide a lot of benefits. The benefits for learners include flexibility of scheduled instruction at a location convenient to learners, reduced student time, assured progress in skill development, increased achievement and increased retention and continuous report to the learners of progress and accomplishments, specified performance criteria, good response and feedback. The application of Audio-visual AIDS would definitely create a good learning environment in classroom, sustaining attention and motivating the students to learn effectively. The application of Audio-visual AIDS may create a congenial learning climate in schools and can bring real life situations. The investigator has chosen the topic for the present study in order to address the problem faced by Teachers, teaching science, to foster involvement in new teaching approaches, to get a feeling of satisfaction through learning in the classroom, to create joyful learning environment and to stimulate active information processing for effective learning and to develop their

employability skills.

Audio-visual AIDS are the best attention-compellers. They arouse interest and motivate the students to action and stimulate physical and mental activity. They save time and the learning is substantial and durable. The knowledge gained by the pupil within a short period is retained in his memory for a longer period. By reviewing and rehearsing the animated pictures, students get an opportunity to correct misconceptions and secure additional ideas. A film, after having been shown to the students, can be reviewed by active discussion among students and with the Teacher. By using the Audio-visual AIDS again, the students correct their mistakes and get a chance to revise what they have learnt and at the same time gather some additional information which they had unconsciously overlooked. An Audio-visual AIDS matches inner urges, instincts, basic drives and motives of the students and thus proves a potent motivating force for energizing the learner to learn effectively. The root of all understanding, thinking and

attitude formation is real experience.

But in the classroom it is not possible to provide such real experience. In such circumstances, Audio-visual AIDS enables, to some extent, duplication of such real experience through graphics.

Reach out Strategy

Successful learning relies on formation of certain strategies as to adopt or employ definite skills to develop their traits and personalities for such aids are used. They are; Graphics are only two-dimensional and should be carefully planned to offset the limitation. An Audio Visual aids or a graphic aid by eliminating non-essentials and by using bold symbolic representations with attractive portrayal should be able to create interest and secure the attention of the pupils. Since the message to be conveyed pertains to a single concept and hence brief, the viewer will not get perplexed on being exposed to the visual but will try to read and understand what is implied (visual and words). Audio Visual aids or a graphic aids could easily be prepared

by and Teacher using simple materials that are easily available and stored for future use. Making graphics should form an integral part of the Teacher's preparation for teaching. Almost any material involving illustrations is basically graphic in nature. There can be an infinite variety of graphic materials. It is difficult to give a rigid list of these materials. However, through common usage, the principal categories of graphic aids described below.

Graphs

Line graphs, bar graphs, pictorial graphs and sector (pie) graphs are the different types of graphical representations. The nature of variation of two dependent quantities could be very easily presented by graphical representation. Interpretation of graphs is easy and very quick. Correct inferences could be drawn with ease. Pictographs are graphical representations which use simplified representational figures.

Diagrams

Diagrams could be used to explain

many facts easily using a variety of symbols and labels. They can be truly considered as brief visual synopses of facts to be presented. Diagrams can explain facts more easily than charts. Technical fields like engineering rely heavily on diagrams to communicate, detailed, precise information (blueprints).

Posters

The poster is a bold basic representation in striking colour of an idea or concept in an attractive form. A poster catches the eye and makes the viewer go through the message conveyed. The visual design is dramatic and hence dynamic in appeal. Posters are used widely in all walks of life, to convey forcibly the desired information to the layman. Posters always attractive and catchy. Good posters are simple as well as striking. Schools can use professionally prepared posters for occasions like "wildlife week", "Vanamahotsava" etc. and they themselves may prepare posters creatively for specific needs.

Maps

A map is an accurate representation on a plane surface in the form of a diagram drawn to scale, the details of boundaries of continents, countries etc. Geographical details like location of mountains, rivers, altitude of a place, contours of the earth surface and important locations can also be represented accurately with reference to a convenient scale with a suitable colour scheme.

Comics

A comic strip is a form of cartoon depicting a story in sequence. The events are arranged in the proper order in an attractive pictorial form appealing much to lower age groups.

Cartoons

A cartoon is a metaphorical presentation in the form of a picture or a sketch. It vigorously presents and dramatizes humour, satire, caricature or exaggeration about an idea, a person or a situation. It is expression of humour. By a humorous presentation, often exaggerating on any characteristic visual aspect it

attracts the attention of the viewer. A cartoon like the poster is universal in appeal and conveys only one idea.

Charts

Any visual information developed on the chalk board by the Teacher in the presence of pupils is bound to be most effective. The effectiveness could be further increased by the Teacher making judicious use of chalk pieces of different colours to stress specific aspects. This may not be possible because of practical reasons. The picture to be drawn may be simple and may have too many details and hence much time would be wasted in drawing them on the chalk board. Further, all Teachers may not have sufficient skill to draw presentable pictures of diagrams. While a diagram is a condensed drawing consisting of lines and symbols which represent the object process, a chart is a combination of pictorial, graphic, numerical or verbal material which presents a clear visual summary. It helps handy to the Teacher. If suitable charts are available the Teacher could make use of the during teaching. This

will result in considerable saving of time. The same chart could be used over a number of years. A good collection of charts in an institution should help the Teacher considerably. *Tree* charts, time line charts, Technical diagrams and process diagrams are also commonly used in classrooms. Readymade charts are available for use in almost all areas in all subjects. But it is not difficult for any Teacher to prepare a chart. In fact a Teacher would find a chart prepared by him incorporating his own ideas and lines of approach of the specific topic more useful to him, when a chart is used for teaching it is essential for all pupils to focus their attention on any specific aspect in the chart pointed by the Teacher. Hence the chart should be large, every detail depicted should be visible to every pupil in the class wherever he is sitting. The chart should not contain too minute details or too much written matter making it necessary for any observer to come near and see. Simple charts with a neat professional appearance can be made in minutes with coloured paper, charting tapes and adhesive letters.

Charts are also used to create with a neat suitable environment in the classroom, laboratory and contain more written and pictorial information. Each chart should display information only about one specific area in a subject. During times when there is no actively in the room pupils could go near the chart and study its contents. Such display charts will provide useful visual material for the pupils when they are not engaged otherwise.

Educational Broadcasts

The radio broadcast is a powerful medium for mass communication. In the present day, broadcasts from a powerful transmitter can be received at distant places. The range of many transmitters is great and the area covered is vast. Communication from any part of the world to any other place, however remote and wherever located, is possible. Transistor receivers do not require any mains power supply, but could be operated by dry cells. Advancement in electronics particularly in the field of solid state circuits (transistors),

integrated circuits, etc., enables clear sound reception from any fairly powerful transmitter without much interference even in remote areas. Medium wave transmitters cater to the nearby surrounding areas and the same programme when broadcast on short wave makes reception at distant places possible. Frequency modulation broadcasts recently introduced in Madras will enable quality reception without any background noise.

The Radio as Aid to Teaching

The radio besides being a mass media of communication can also play a major role in imparting instruction to school children. Such of these broadcasts are styled as educational broadcasts. These broadcasts are made during specific days at specific school hours, mainly for the benefit of the educational institutions. These broadcasts are on curricular subjects based on the prescribed syllabus sequenced to synchronies with the class lessons. Educational broadcasts will considerably help the Teacher to supplement his classroom instruction.

The Teacher should prepare the pupils so that they will benefit to the maximum extent by listening to a specific broadcast. He should plan for effective listening and also prepare suitable follow-up work for consolidation.

Booklets are the details of programmes of educational broadcasts for the year are prepared and printed in advance by All India Radio and made available to educational institutions at the beginning of each academic year. Programmes are arranged separately for the benefit of elementary, middle and high schools and for university correspondence course students. The main aim of any broadcast for educational purpose should be to inspire the student to gain greater knowledge. This can be achieved by (a) broadcasting biographies of people who have contributed to advancement of knowledge in specific areas, like Sir Isaac Newton, Charles Darwin, Michael Faraday, Sir C.V.Raman etc., (b) broadcasting events which are important landmarks in history and which

revolutionised the thinking and life of man, for example, Industrial Revolution, French Revolution and, Freedom Struggle of India; (c) broadcasting about progress in science and technology, industry, practical results of such progress, etc. Listening to such broadcasts will arouse the interest of the pupils and will create a desire to acquire greater knowledge and skill. The library, the laboratory and the workshop will be put to greater use and with an additional purpose in a meaningful way.

Listening to a preview of a newly introduced commercial product, for example, a new model of a bicycle, stressing its design, special features introduced for safety, economy and comfortable travel will be of good educational value. Broadcasts of reviews of good books recently published will make the pupil know about the same and their special values. Broadcasts could be made of recording of sound of a factory as the background superimposed with suitable commentary. Narration of details of conducted tours around a

place with suitable locational backgrounds will be very useful to give an idea of the tour. Suitable musical background makes the programme attractive and more realistic. Listening to broadcasts of dramas, recitation of poems, narration of stories, readings and recitations from books, rendering of classical, instrumental and light music helps towards harmonious development of the mental growth of pupils and makes them fit to be useful members of society.

Tape – Recorder

A Tape- recorder is used to record sounds on magnetic tape which can be reproduced at will as many times as required. When a new recording is made, the recording already contained in the tape is automatically erased. A recorded tape, if kept away from strong magnetic fields, will retain the recordings for a very long time.

Slide – Tape Presentation

In the centers of higher learning today, the teaching aid often used with advantage is slide-tape sequence. In this a pack of slides replaces the

filmstrip and this pack of slides is used in sequential conjunction with correlated recordings in cassette tape. A pack of slides has certain decided advantages as compared with filmstrip in such a presentation: the slides needed for the teaching programme could easily be prepared by the Teacher to suit his/her requirements; diagrams and photographs may be suitably included as needed; the presentation sequence of slides could be altered to suit groups of pupils of differing entry behaviour; any particular slide may be deleted or a new one added to suit changing requirements of instruction; any slide in which the visual may have become obsolete or may be presented in a better way could be replaced by a more suitable one.

Slide-tape presentation has a dynamic appeal to pupils since the associated sound effects and suitable commentary are played along-side. The Teacher, with a little training, can use the tape-recorder with ease and effectiveness. The Teacher's commentary may be made more attractive and appealing with suitable

background music and sound effect. These could be easily recorded by any Teacher with some amount of imagination. Here, the Teacher can first record the complete commentary for the slide sequence in one take. The background music suitable to create proper mood for understanding the slide visuals may be recorded in another tape, along with associated background sounds. For example, if a horse rider is shown in the slide, the pounding of hooves may be incorporated in the background effect; if a jungle scene is to be shown, the cry of animals, the sound of running water, from the background. The final recording is made with the commentary replayed along with the background music and sound effects on two tape-recorders and the mixed re-recording of the final tape done on a third recorder. All recordings should preferably be made during night time, when disturbing sounds will be minimal. When sound material for use with a particular slide has been recorded, a single short peal from the bell will indicate to the operator of the slide projector that the slide being

shown should be changed and the next one brought on. Many projectors with automatic slide changing mechanisms are now available and a high frequency sound pulse from the tape acts as a cue for automatic slide change in some of these.

Present day slide projectors are more compact and efficient than those of the past and are fitted with low voltage halogen lamps and utilise a large percentage of light output. The slides produced using a camera with near focusing attachment, are made using 35m.m. perforated film with a picture size of 36mmx24mm. Slides can be made with black and white film is more suitable than coloured film. From the resulting negative, a positive film print is taken and this positive could be used to get further prints which would display the diagrams clearly as bright lines on dark backgrounds. Such lines of diagrams can also be toned to suitable colours using required dyes (dye toning). The mounted slides are kept in the required sequence in a linear or circular magazine for use. With non-automatic slide projectors, the

operator should change the slide on hearing the cue-bell from the recording in the cassette tape recorder. The same set of slides could be used for instruction in different languages with suitable sound tracks recorded in different languages in separate cassettes. The recorded sound could be easily changed by recording if needed. The slide-tape sequence, suitably produced can be almost as effective and dynamic as a motion picture and it appeals to the eye and ear of pupils.

Tele- Lecture

Tele-lecture represents a means of conducting off-campus courses in a number of widely scattered sites through the use of tape-recorded lecturers and amplified telephone calls, with the professor remaining on campus for all of the class session. Tele-lecturer can be offered in any community that has telephone service. Instead of the instructor travelling to various places for meeting a fixed number of students as is necessary for an off-campus class, tele-lecture can combine a number of

small cases.

Each week participating classes receive by mail a one or two-hour taped lecture. The taped lecture is played at a class session arranged by the class at site at a time and place convenient to the group. In addition, each week at a designated time, all participating classes meet at a designed spot. They are connected by an amplified telephone call to the professor on the campus. This call will 50 minutes and is used to answer questions, clarify lectures, a supplement to the lecture material which was taped. Two-way communication between students and the professor is thus provided. A student moderator can control the microphone placed in the class. Tele-lecture can benefit high school students also for they can interview a local businessman and get vocational guidance by this method. One class member in each site is designated as the "On-Site Course Assistant". He is responsible for registration, taking instructions from the course Assistant". He is responsible for registration, taking instructions from

the course director, receiving tapes, administering tests, returning all materials to the college and carrying all, necessary communications with tele-lecture coordinator in the campus office when a video-tele-lecture can be arranged, closed circuit television add an extra dimension. Students can see the speaker as he answers their questions.

Instructional Television (ITV)

Many telecasts, in addition to programmes exclusively for schools, can be considered educational in a general way and viewed by pupils with advantage. Hence Educational Television (ETV) includes programmes whose primary interest is to educate rather than entertain. ETV generally includes instructional television and non-commercialised television programmes. Instructional television (ITV) includes programmes related directly to an organized programme of formed instruction and is directed to individual viewers who come under non-up work by the Teacher is essential to consolidate the gain of knowledge.

Videocassette Recorder

The video cassette which has made its appearance in recent times has helped to enhance the educational and entertainment value of TV. Such recorders and the software needed for them, such as video cassettes are available now in a variety of makes and are now fabricated by India manufactures also. At present such recorders appear to be a bit costly; but their value and popularity are bound to make their prices lower in the near future and they will have a place in classroom instruction on a fairly large scale even in the near future. Not only can many pre-recorded cassettes of interest and value to pupils be recorded and educational TV programmes telecast over networks can be reordered and replayed whenever necessary. All video cassette recorders (VCR) made now record events in colour and are played back using colour monitors (TV sets). The replay in colour with associated sound makes viewing dynamic and its impact on the viewers is considerable. The recording can be played back on one or more monitor's simultaneously

facilitating large audience viewing in different classrooms. Operating a VCR is easy and there is no complicated threading as in the case of motion picture projectors; and the VCR is more portable and versatile than the motion picture projector. Here mention may also be made of new projection TV systems with 6'-10' screens and facilities for front of back projection. These, when they become popular in use, will be ideal for large audience in school and community viewing.

Video Tape

Storage of instruction for repetitive use is easily accomplished now with the use of video tapes. They may be played back through monitors. Aural Aids and TV in a studio or classroom. Video tape can provide virtually instantaneous reproduction and in that sense, it is superior to films. Video cassettes player to his own television set, inserts a cassette and presses a button. The obvious advantage of the cassette is that it is portable and can be used and reused at will.

Computers

Computer is most important invention which has capacity for storing or memorising a large amount of information and producing or retrieving any of them when called for. The increasing importance of informatics in day-to-day life has resulted in the emergence of computers in education at the international level. The worldwide recognition gained for the importance of computers has compelled educationists to revise the existing curricula to include informatics components. Even the developing countries have realized that unless they invest heavily in computer education, they will be left behind in the informatics revolution. Computers are being used in education to prepare the children for the informatics future by training them in programming and related skills for work in the informatics industry. They are also being used as educational aids to improve children's skills in academic subjects at all levels of education. Introduction of computers in education has brought out changes in

the content and methods of education. However, lack of resources remains one of the main obstacles to the introduction and development of informatics in education in a large way in developing countries.

The most striking innovation in the field of educational technology is the use of computers. Computer is included in the hardware approach of educational technology. It is one of the machines of automation in teaching and learning and is used for presenting individualized instruction. The main objective of teaching through computer is to provide the needed flexibility for individualizing the educational process. It meets the specific needs of the student in a way in which is almost impossible to do in a face-to face student-Teacher relationship.

Computers should have a major role in the teaching-learning process. Computers have become an essential class room tool for the acquisition, analysis, presentation, and communication of data in ways that allow students to become active participants in research and learning.

The computers offer students very important resources for learning concepts through simulations, graphics, sound, data manipulation and model building. Computers can improve scientific learning and facilitate communication of ideas and concepts. There are three roles for computer in education. First, it functions as a tutor for students by presenting material, evaluating responses, and depending on the basis of the evaluation, deciding what to present next. Second, it is a tool that helps students perform calculations, analyze data, keep records, or write papers. Third, it functions as tutee by having told what to do through programming. A computer program can be designed to create models for experimental purpose. Students, those particularly in higher educations, have the benefits of using computer as a computational tool. They learn a programming language and write a program to solve some of their course work problems treating the computer as an aid in much the same way as a slide rule or a set of mathematical

tables. Computers are capable of giving almost instant feedback, tirelessly, no matter how many learners 'get it wrong' and it is equally well known that human tutors have limited value when it comes to learners repeatedly getting things wrong.

Power Point Presentation and Video Conferencing

Multimedia refers to any computer-mediated software or interactive application that integrates text, color, graphical images, animation, audio sound, and full motion video in a single application. Multimedia learning systems consist of animation and narration, which offer a potential venue for improving student understanding. Multimedia programme is an integral part of the educational technology. As a technique, it offers a high potential in application at different stages of education for the purpose of enhancing the teaching and learning processes, as is evident from the experience of developed countries. The integration of multimedia

technology into the communication environment has the potential to transform the students from passive recipients of information to active participants in a media-rich learning process. The introduction of multimedia or any other computer-based information technology is not intended to substitute a presenter. This new technology is intended to provide the presenter with a powerful tool that can greatly enhance communication by delivering a multisensory experience. With interactive multimedia technology, a Teacher can communicate with the students by means of a presentation that becomes more than message-it becomes an active, exciting experience in a multisensory environment to create a multisensory experience. Multimedia reaches users in many different ways, enabling them to retain more knowledge and increase their understanding. There are 4 steps in learning like attention, rehearsal, encoding and retrieval. A well designed multimedia application demands the simultaneous attention of several senses through dual

encoding or the process of appealing to more than one sense simultaneously. Dual encoding facilitates and enhances the rehearsal process. Multimedia helps retrieval by associating sound, text and images with the concept being presented. Using text, images, animation and sound simultaneously greatly improves the students' retention of the knowledge and directs the students' attention to classroom (Louis, 2001). It consists of the combination of video and movie clips and sound, text and graphic files all controlled by a piece of software and a computer which is equipped with a sound card, a video card, a CD-ROM drive and speakers or headphone. Sometimes, there is also a videodisk player, which is controlled by the software.

Computer based multimedia delivers information in a variety of ways but achieves its greatest effectiveness through interaction. In the first case, music and informative knowledge combine to convey the message. In the second case, technology provides a more effective presentation wherein

information, images and sounds are technically and aesthetically integrated, focusing on a single specific purpose. The ability of students to work independently and to receive instruction suited to their needs and learning styles is inherently attractive.

Study Review

Every research work is in position to undergo to reveals that the research gap and hence following reviews are collected. William H.Jr (2001) concluded that there was no evidence of direct relationship between small class size and good attitude toward science. But he suggested that class affect achievement and which in turn affect attitude. There did, however, strong association exists between achievement and attitude and between achievements and class size. Larry, E. (2002) studied the relationship between science attitude self concept and science Teachers / pupils compatibility and concluded that boys possessed a more positive attitude and concept towards science than did girls. May, A.M (2002)

developed the test on scientific attitudes (TOSA), taking the point of view that attitudes must be inferred from the behavior of students. They developed a multiple – choice format test. The developed behavioral definitions of eight attitudes: (1) critical mindedness, (2) suspended judgment (3) Respect for evidence (4) Honesty, (5) Objectivity, (6) Willingness to change opinions, (7) Open – mindedness and (8) Questioning attitude. The behavioral definitions to these eight attitudes were used to develop items.

Clay (2004) investigated attitudes towards education, critical thinking ability and specific effective behaviour of (1) Students who had studied, the BSCS environmental models “Investing your Environment” (IYE), (2) Those students using one of BSCS biological science version and (3) Those studying models of Biology. He found that the ability of students who had experienced BSCS Biological science was significantly increased but no other differences were found among the students on any of the other variables. Barry.J. (2005) studied

the relationship between students perceptions of their science class room learning environment and attitude to four different scores of scientific information experiments, books, promote positive attitude towards experiment as a source of information, while less favorable environment promoted more positive attitude to the more authoritarian sources of information. Williams (2006) "A study of the attitude of graduates students towards general science and its relationship with achievement and its subjects". In her study it is found to examine if there are any differences among the different groups of graduates students such as boys and girls. Rural pupil and urban colleges' pupils in respect of their achievement in science, attitude towards science and attitude forwards science education.

Rajan, (2008), "An evaluation of the teaching of Biology at the Higher Secondary stage in Tamil Nadu. In the study it is found that as many as 87.8% of the +2 Biology student have a favorable attitude towards the study of Biology. The +2 boys studying in

urban schools do not have a more favorable attitude towards the study of Biology then the boys studying rural school. The +2 girls studying in urban schools do not have a more favorable attitude towards the study of Biology then the boys studying urban schools. The +2 girls studying in rural schools have a more favorable attitude towards the study of Biology than the girls studying in rural schools. The +2 girls studying in urban schools have a more favorable attitude towards the study of Biology than the girls studying in rural schools.

Rani (2010) "A study of problems of science education and attitude of students towards science in college of East Khasi Hiils District, Meghalaya. In her study it is found that made and female students were found to be homogeneous in their attitude towards science. The science attitude scores did not show any statistically significant difference in the case of students of different types and locale of colleges. But tribal and non-tribal students differed significantly in their science attitude scores.

Rajasekar (2011) "A study of students

achievement in Physics as related to certain variables, in the study it is found that as much as 88.92% of the students have a relatively favorable attitude towards the study of physics and only 11.08% of them have a relatively unfavorable attitude towards it and the trend is seen in respect of the sub sample too. There is no significance difference between the boys and girls in respect of their attitude towards the study of physics. There is significance difference between the urban and the rural students in respect of their attitude towards the study of physics. Moreover the rural students are found to be better than their urban counterparts in their favorableness of attitude towards the study of physics.

Research Gap

A very few study have been made emphasis either on science or arts and fostering on certain variables such as attitude, teaching way, learning environment and critical ability and specific effective behaviours of learners. The studies relating to link these variables by certain

methodological issues and have not been made to analyses the B-Schools in perspective of utility of learning tools as skill base learning system for employability and therefore the present study is taken up to analyses the dimension of learning and applicability for employability skill enrichment.

Research Design

Methodology is an important aspect of any research work. There are different methods followed at various stages of any investigation. The details of methods followed in this study such as selection of tools, sample frame, collection of data, and analysis of data are involved in this paper. The study has been designed with the students' attitude towards Audio-visual aids used by the Teachers achievement. The major aim of the present study is to determine the students' Audio-visual aids used by the Teacher. The data were collected by using questionnaire as an instrument. For this study the samples were drawn using random sample method. Sample size of the study that is selected from

the sampling unit. A sample of 500 respondents in Tamil Nadu selected district in each district one hundred samples has taken on the basis of convenient sampling technique. The researcher conducted his study at respondents of under graduates and post graduates in higher level learning B-Schools in Tamil Nadu selected district namely Cuddalore, Trichy, Coimbatore, Chennai, Tirunelveli, which combats all forms of economic, cultural, social and technical issues in the study population. The study period covers from April 2015 to July 2015. The collected data were analyses using appropriate statistical techniques. The descriptive statistics, differential analysis and regression analysis were computed.

Study Objectives

The study has the following primary objectives for the research study.

1. To analyses the student attitude towards Audio-visual aids used by the Teachers of the entire and its sub samples.
2. To compare the attitude towards Audio-visual aids of male and

female students and with their medium of instruction.

3. To bring out the attitude towards Audio-visual aids on the basis of their demographic variables.

Limitations of the Study

Though the research has been properly planned and well executed, there are certain limitations, which are inherent in nature and are out of the researcher's control. The effectiveness of the project is felt only when the results are read along with the limitations and constraints faced during the course of this study. The following are the limitations.

1. The responses from the respondents could be casual in nature. This may be due to lack of interest or time on their part and some of the information provided by the respondents might not be correct.
2. Getting timely responses from the respondents was a difficult task.

Discussion and Results

This paper furnishes the analyses and interpretation of the collected data for

“Skilled based Learning System for Employability – with reference to B-Schools from Empirical Perspective”.

Various statistical procedures such as F-test, t-test, regression analysis and factor analysis were used.

Table 1: Mean and Standard Deviation of the students' attitude towards Audio visual aids

Variable	Groups	N	Mean	Standard Deviation
Entire	Total	500	71.78	8.58
Type of the college	Government	262	70.48	6.50
	Private	238	73.30	10.33
Locality of the college	Urban	274	72.24	8.11
	Rural	226	71.14	9.19
Course	BBA/BBM	286	72.26	9.37
	MBA	214	71.00	7.08
Gender	Male	274	70.97	7.41
	Female	226	72.90	9.89
Community	SC	94	72.89	8.84
	ST	136	70.69	5.04
	BC	100	73.20	12.16
	BCM	112	72.08	9.22
	OC	58	68.33	3.18
Religion	Hindu	145	70.31	4.09
	Muslim	187	72.30	9.56
	Christian	168	72.29	9.75
Degree	UG	256	69.19	5.37
	PG	244	74.58	10.37
Medium of instruction	Tamil	180	70.20	9.64
	English	192	71.75	4.19
	Hindi	128	75.00	11.60
Birth order of the child	Only child	287	71.79	8.56
	One among the children	213	71.77	8.64
Parental literacy (Father)	Illiterate	284	72.01	8.86
	Literate	216	71.41	8.14
Parental literacy (Mother)	Illiterate	282	72.07	8.46
	Literate	218	71.32	8.78

Source: Primary data

Hypothesis 1: Students have favourable attitude towards Audio Visual Aids used by the Teachers in B-Schools

From the Table 1, the Mean, SD of students' attitude towards audio visual aids subject. The result reveals that, students of this particular sample have better attitude in audio visual aids. In the case of Government and Private, Private (73.30) scored higher mean value than Government (70.48). So, Private has high level of attitude in audio visual aids than government. In the case of Urban and Rural, Urban (72.24) scored higher mean value than Rural (71.14). So, Urban have high level of attitude in audio visual aids than Rural. In the case of class, BBA/BBM group scored (72.26) higher mean value than the other group. So, BBA/BBM has high level of attitude in audio visual aids than MBA. Considering the Locality of the college, urban students (72.24) have high attitude in mathematics than rural students. Regarding the type of management, Government B-Schools students (81.12) scored high mean value than private B-Schools

students. (73.47). So, government B-Schools student have high mathematical attitude. Regarding parental education, students whose parents have educated (B-Schools education) they have high attitude in mathematics. Considering the degree, post graduate student have high mathematical attitude than under graduate students. Considering the employment status, unemployed parents student have high mathematical attitude. In the case of family income Rs, 5,000 –10,000 income group students have high attitude in mathematics (83.42) than the other groups. The entire sample of experimental group taken for the study shows the mean of 71.78 and S.D. 8.58. From this, it is observed that the students attitude towards audio visual aids used by the Teachers (71.18 is above 300 which is average).

Table 2: Mean, SD and t-test for respondent about students' attitude towards audio visual aids used by the Teachers on the basis of demographic variables

Demographic variables	Sub Samples	N	Mean	Standard Deviation	F/t-value	Level of Significance
Types of the B-Schools	Government	262	70.48	6.50	2.78	0.01
	Private	238	73.30	10.33		
Locality of the B-Schools	Urban	274	72.24	8.11	1.07	NS
	Rural	226	71.14	9.19		
Course	BBA/BBM	286	72.26	9.37	1.32	NS
	MBA	214	71.00	7.08		
Gender	Male	274	70.97	7.41	1.85	NS
	Female	226	72.90	9.89		
Community	SC	94	72.89	8.84	1.79	NS
	ST	136	70.69	5.04		
	BC	100	73.20	12.16		
	BCM	112	72.08	9.22		
	OC	58	68.33	3.18		
	Total	500	71.78	8.58		
Religion	Hindu	145	70.31	4.09	1.56	NS
	Muslim	187	72.30	9.56		
	Christian	168	72.29	9.75		
	Total	500	71.78	8.58		
Degree	UG	256	69.19	5.37	5.58	0.01
	PG	244	74.58	10.37		
Medium of instruction	Tamil	180	70.20	9.64	6.49	0.01
	English	192	71.75	4.19		
	Hindi	128	75.00	11.60		
	Total	500	71.78	8.58		
Birth order of the child	Only child	287	71.79	8.56	0.02	NS
	One among the children	213	71.77	8.64		
Parental literacy (Father)	Illiterate	284	72.01	8.86	0.60	NS
	Literate	216	71.41	8.14		
Parental literacy (Mother)	Illiterate	282	72.07	8.46	0.73	NS
	Literate	218	71.32	8.78		

Source: Primary data

Hypothesis 2: Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of demographic variables.

The calculated t-value (2.78), which is significant at 0.01 level, confirms that there is a significant difference in student audio visual aids on the basis of type of the B-Schools. Hence the stated hypothesis is rejected. So government students have high level of audio visual aids than private B-Schools students. It seems that more funds are deployed for such and Teachers' participation is also satisfactory.

The calculated t-value (1.07), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of locality of the college. Hence the stated hypothesis is accepted. It is the high rationality that it's due to more concentration and contraction of mechanisms exists in the B-Schools campus. The calculated t-value (1.32), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of course. Hence the stated hypothesis is accepted. The learners have high significance for their involvement towards adherence for learning aids adopted by their

Teachers. It is also for the cause of ICT reforms and revolution in the learning scenario. The calculated t-value (1.85), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of gender. Hence the stated hypothesis is accepted. The learners have much scope and vision for their learning by their gender practice and them also adaptable to such utility.

The calculated F-ratio (1.79), which is not significant at 0.05 level, confirms that there is no significant difference in students audio visual aids on the basis of community. Hence the stated hypothesis is accepted. In this pipeline the community at large has also favourable to the utility due to the ICT environment and feels that their may be much employability opportunity.

The calculated F-ratio (1.56), which is not significant at 0.05 level, confirms that there is no significant difference in students attitude of audio visual aids on the basis of religion. Hence the stated hypothesis is accepted. Regarding the issues of culture, customs, religion the learning groups

has positive role and also happy over to the environment for the career concerning. The calculated t-value (5.58), which is significant at 0.01 level, confirms that there is a significant difference in student audio visual aids on the basis of degree. Hence the stated hypothesis is rejected. So post graduates students have high level of audio visual aids than under graduates students. Many Teachers at graduate level and PG level have been impact by this tool and the learning groups also. The calculated F-ratio (6.49), which is not significant at 0.05 level, confirms that there is a significant difference in students attitude of audio visual aids on the basis of medium of instruction. Hence the stated hypothesis is rejected. It is the cause for concern and dispersion for learning among the learners. They have great privilege over the application of learning aids due to that, their future perspective. The calculated t-value (0.02), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of

birth order of the child. Hence the stated hypothesis is accepted. There is no issue of birth order and it's based on learning technology skill. The calculated t-value (0.60), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of parental literacy (Father). Hence the stated hypothesis is accepted. It is a prime factor over the use of learning aids on the base of parental literacy. It is also a criterion for assistance at home. The calculated t-value (0.73), which is not significant at 0.05 level, confirms that there is no significant difference in their audio visual aids on the basis of parental literacy (Mother). Hence the stated hypothesis is accepted. Likewise parental literacy of father, mothers' role is also as similar to the phenomenon.

Table 3: Regression Analysis for student demographic characters and their attitude towards audio visual aids used by the Teachers

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.436 ^a	.190	.159	7.87

ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.4189.756	11	380.887	6.155	.000 ^a
Residual	17821.724	488	61.881		
Total	22011.480	499			

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Name of the B-Schools	58.979	4.376		13.477	.000
Type of the B-Schools	2.387	1.116	.139	2.139	.033**
Locality of the B-Schools	-1.000	1.005	-.058	-.995	.320
Class	-.500	1.046	-.028	-.478	.633
Gender	1.989	1.052	.115	1.891	.060
Community	-1.365	.422	-.190	-3.233	.001**
Religion	.757	.627	.068	1.208	.228
Groups	5.255	.947	.306	5.548	.000**
Medium of instruction	2.183	.649	.191	3.365	.001**
Birth order of the child	-9.11	1.032	-.001	-.009	.993
Parental literacy (Father)	-.143	1.003	-.008	-.143	.887
Parental literacy (Mother)	-.585	.955	-.033	-.612	.541

Source: Primary data

a. Dependent Variable: Attitude towards Audi visual aids

** Significant at 0.01 level

According to the regression result it is known that the demographic variables are influenced nearly 19 per cent to measure their attitude towards audio visual aids. This is proved by the obtained r square value (0.19). Further the calculated F-value (6.15) also significant at 0.01 level. It indicates that there is a significant influence between students' demographic characters and their attitude towards audio visual aids. Also from the obtained t- values the demographic variables such as type of B-Schools, community, group studied and medium of instructions the students studied are significant at 0.01 level. So it is concluded that there is a significant difference regarding attitude towards audio visual aids on the basis of these variables.

Factor Analysis

Factor analysis is done with the main objectives to find out the underlying common factors among 10 variables included in this study. Principal component factoring method with variance rotation is used for factor

extraction. A four factor solution is derived using a score test. Table shows the results of the factor analysis. Name of all the 10 variables and their respective loadings in all the four factors are given in the table. An arbitrary value of 0.39 and above is considered significant loading. A positive loading indicates that greater the value of the variable greater is the contribution to the factor. On the other hand, a negative loading implies that greater the value, lesser its contribution to the factor or vice versa. Keeping these in mind, a study of the loadings indicates the presence of some significant pattern. Effort is made to fix the size of correlation that is meaningful, club together the variables with loadings in excess of the criteria and search for a concept that unifies them, with greater attention to variables having higher loadings. Variables have been ordered and grouped by the size of loadings to facilitate interpretation and shown in Table 4.

Table 4 Factor Analysis - Communalities

	Initial	Extraction
Audio Visual aids increase reasoning ability	1.000	.445
Target soon after what I have studied through Audio Visual aids	1.000	.698
The Record pelages used in class in useful	1.000	.511
Employability	1.000	.616
Different kinds of programmes do not need audio visual aids.	1.000	.395
Practice of using Audio Visual aids increase memory power	1.000	.662
Audio Visual aids (Drill work) are more important than lab experiments.	1.000	.579
Overuse of teaching aids may be harmful and damaging to learners	1.000	.613
Do audio visual aids provide many hands in activity?	1.000	.773
Do audio visual aids help to explain abstract ideals?	1.000	.658
Extraction Method: Principal Component Analysis.		

Source: Primary data

Total Variance Explained						
Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.750	17.503	17.503	1.750	17.503	17.503
2	1.490	14.904	32.407	1.490	14.904	32.407
3	1.473	14.727	47.134	1.473	14.727	47.134
4	1.236	12.357	59.490	1.236	12.357	59.490
5	.952	9.523	69.013			
6	.813	8.135	77.148			
7	.743	7.432	84.580			
8	.642	6.417	90.997			
9	.543	5.434	96.431			
10	.357	3.569	100.000			
Extraction Method: Principal Component Analysis.						

Component Matrix ^a				
	Component			
	1	2	3	4
Audio Visual aids increase reasoning ability	-.406	-.099	-.496	.153
Target soon after what I have studied through Audio Visual aids	.419	.484	-.360	.398
The Record pelages used in class in useful	-.473	.413	-.144	.310
Employability	.520	-.529	-.228	-.116
Different kinds of programmes do not need audio visual aids.	-.356	-.479	-.030	.194
Practice of using Audio Visual aids increase memory power	.377	-.189	.425	.551
Audio Visual aids (Drill work) are more important than lab experiments.	.625	-.071	-.186	-.385
Overuse of teaching aids may be harmful and damaging to learners	.323	.171	.569	.394
Do audio visual aids provide many hands in activity?	-.344	.027	.696	-.411
Do audio visual aids help to explain abstract ideals?	.179	.704	.001	-.361
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

Factor analysis is done among 10 variables used in the study. The principal component analysis with varimax rotation was used to find out the percentage of variance of each factor, which can be grouped together from the total pool of 10 variables considered in the study. The factor,

variance percentage for each factor is 1.750, 1.490, 1.473, and 1.236.

The factors are arranged based on the Eigen value namely

F1	(Eigen value 1.750)
F2	(Eigen value 1.490)
F3	(Eigen value 1.473)
F4	(Eigen value 1.236)

These four factors are described as “Students Attitude towards Audio-Visual Aids Used by the Teachers”. This model has a strong statistical support and the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy concurs that the sample taken to process the factor analysis is statistically sufficient (KMO value = 0.7795).

Analysis Results

The result reveals that, students of this particular sample have better attitude in audio visual aids. In the case of Government and Private, Private (73.30) scored higher mean value than Government (70.48). So, Private have high level of attitude in audio visual aids than government. In the case of Urban and Rural, Urban (72.24) scored higher mean value than Rural (71.14). So, Urban have high level of attitude in audio visual aids than Rural. In the case of class, BBA/BBM group scored (72.26) higher mean value than the other group. So, BBA/BBM has high level of attitude in audio visual aids than MBA. Considering the Locality of the college, urban students (72.24) have high attitude in mathematics

than rural students. Regarding the type of management, Government B-Schools students (81.12) scored high mean value than private B-Schools students. (73.47). Hence, government B-Schools student have high mathematical attitude. Regarding parental education, students whose parents have educated (B-Schools education) they have high attitude in mathematics. Considering the degree, post graduate student have high mathematical attitude than under graduate students. Considering the employment status, unemployed parents student have high mathematical attitude. In the case of family income Rs,5,000 –10,000 income group students have high attitude in mathematics (83.42) than the other groups. The entire sample of experimental group taken for the study shows the mean of 71.78 and S.D. 8.58. From this, it is observed that the students attitude towards audio visual aids used by the Teachers (71.18) is above 300 which is average).

Inferential Findings of the Study

Students have favourable attitude

towards Audio Visual Aids used by the Teachers in B-Schools. Students differ in their students' attitude towards audio visual aids used by the Teachers on the basis of types of the B-Schools. Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of locality of the B-Schools. Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of class. Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of gender. Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of community. Students do not differ in their students' attitude towards audio visual aids used by the Teachers on the basis of Religion. Students differ in their attitude towards audio visual aids used by the Teachers on the basis of group. Students differ in their attitude towards audio visual aids used by the Teachers on the basis of medium of instruction. Students do not differ in their attitude towards audio visual

aids used by the Teachers on the basis of birth order of the child. Students do not differ in their attitude towards audio visual aids used by the Teachers on the basis of parental literacy (Father). Students do not differ in their attitudes towards audio visual aids used by the Teachers on the basis of parental literacy (Mother). These four factors are described as "Students Attitude towards Audio-Visual Aids Used by the Teachers". This model has a strong statistical support and the Kaiser-Maya-Olkin (KMO) test of sampling adequacy concurs that the sample taken to process the factor analysis is statistically sufficient (KMO value = 0.7795).

Policy Implications and Conclusion Discussion

Audio visual aids a process of inward journey to unravel the hidden potentialities of a being. It helps an individual to develop ones personality. A systematic approach of Audio visual aids helps an individual to see the all around development at physical, mental, intellectual and emotional level. The practice of use of audio

visual aids makes an individual perfect. It removes the unwanted elements in the mind of the learner. It improves concentration and brings mental stability. Audio visual aids is an essential tool for students to achieve higher score in their studies as if improve concentration, memory and skills. The present study clearly indicates and recommends the students to use of audio visual aids as to develop positive attitude towards everything in their life which helps to excel themselves in their studies. The entire study concluded reveals that the uses of audio visual aids have high achievement and expressed more favourable attitude.

Educational Implications

Audio-visual aids are very important and useful aids for teaching. As well as it creates high interest among the students to learn the subjects. So, the department of education shall take a steps to implement the latest audio-visual aids to all the colleges for teaching purpose. For self-learning, these type of aids are very helpful to the students. Also students are very

much interested in using latest technologies such as computers and internet. In internet lot of facilities are there to learn new information with visual appearance. From that students are also get more interest to use that. In the case of teaching, in older days Teachers follow interactive methods and oral demonstration. But these are not creating much interest. In order to create interest and attention audio-visual aids are highly useful. So, the concerned educational institution tries to provide these facilities. So that Teachers and students get benefited.

Suggestions

The following suggestions are arrived from the research findings. Research found that use of audio visual aids will contribute more in students achievement. Also the result reveals that use of audio visual aids increases the memory power, concentration. Further it sharpens the intelligence. Apart from that it reduces misconception in learning. Further due to use of audio visual aids the sensory expression would be more exercised. And hence,, the present

research suggested that in all colleges, the students advised to use of audio visual aids compulsory. The education departments form a rule for that and advise the educational institutions make a step to establish separate infrastructure for this one. Also the Government take a step to use audio visual aids effectively students in their academic. This will definitely help the students to be a good learner imbibing the concepts.

Conclusion

The present study attempted to identify the students' attitude towards audio-visual aids used by the Teachers. For that the researcher framed some objectives. On the basis of objectives, a questionnaire is framed. After framing the questionnaire, these are circulated to the selected samples. 500 samples were selected randomly. The responses were collected and coded using computerised. To test the hypotheses and characteristics of the data, some standard statistical tools were used. The statistical tools such as t-test, F-ratio and regression were

used. From the analysis the result concluded that the students have positive attitude towards audio-visual aids used by the Teachers. The present study also results that the emergence of skill learning in commerce teaching has becomes essence of the day and it also makes the reach out strategy in their execution over for their employability criterion for 21st century in learning and innovation skills, problem solving skills, communication and collaboration skills, information, media and technology skills, life and career skills and competencies skills.

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The Study of Relationship Between the Stock Index and Gold Prices in Indian Context

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Abstract

The study examines if there are any common forces driving the long-run movement of the stock prices and concerned gold prices or whether each individual prices is driven solely by its own fundamentals and give a chance of risk minimization through diversification. This work uses methods of analysis and synthesis of theoretical knowledge from literature, published article and other publications. We have taken sample period of daily data from January 2005 to Dec 2012. Monthly log return data for all phases are examined for co-movement and interdependence using descriptive statistics, correlation among the prices, Unit Root Test/ Stationary test, Johansen co- integration test and Granger causality test was conducted by taking a lag of 1 period (i.e. one day). Through the ADF test, it was found that the variables are stationary and integrated of same order i.e. $I(1)$. Over the period examined, gold prices are not co-integrated although the time series of Nifty Index and Gold prices are not stationary at order zero, i.e. $I(0)$. The Johansen co-integration test is applied to measure the long-term relationship between the two prices and the Granger-causality test is used to check the short-term causal

relationship. The data is limited from 2005 to 2012.

Key Words: *Nifty Index, Gold Prices, Unit root test, Johansen co-integration test, Granger Causality test.*

Jel Classification: *C01, C32, E37, G1*

Introduction

The study of the capital market of a country in terms of a wide range of macro-economic and financial variables has been the subject matter of many researches since last years and the stock market crashes like year 2008 have been proved as a lesson for every type of traders, who had worked in the market which has indicated that bigger declines in market being a result of series of mistakes. The aftermath results due to series of down freeze had broken many of equity traders whether short-term or long- term. The confidence that eroded during 2008 had not yet returned to Dalal street. And, it forced many serious traders to look at some different avenues but the lack of knowledge and obsession of equity market left traders unanswered. At the moment, some analyst has started entertaining these traders through commodity market especially through

gold by betting it as a safe investment. But as we know it is more difficult to predict gold prices than stocks because of various macroeconomic factors including direct linkages with international bullion markets. So, this paper is an attempt to provide empirical evidence on the causal relationship between the Indian stock market Index (Nifty) and Gold prices movement in India. Empirical studies reveal that once financial deregulation takes place, the stock markets of a country become more sensitive to both domestic and external factors and, one of these factors is the price of gold. Historical experiences show that in countries during period of stock market slump, the gold always trends higher because it is primarily considered as a secured investment and the prudent investors starts moving his funds to the safer side. But as I wrote earlier that there are various macros economic factors

which affects share market. Therefore this article would like to explore the impact of gold price fluctuations on stock exchange of India during three phase's i.e pre-recession phase, recession phase and post recession phase. With historical evidences, a negative relationship is expected between gold prices and stock prices. The increase in demand of gold during recession is not only due to the domestic demand but central bank also play a pertinent role in it. There are innumerable usage of gold like investment, jewelry, risk diversifier etc. which make it very precious and even the central government use gold as security against loans when they have had difficulties with their Balance of Payments to borrow currencies from the international capital markets. Gold is also a safe investment when rupee weakens or when conditions of high global inflation arises or during political disasters. It helps to diversify the portfolio and can be used as a hedging tool at the time of crises.

In this paper, we are taking S&P CNX Nifty as a proxy of Indian Stock Market and Gold rates from MCX. The S&P CNX Nifty covers 22 sectors of the Indian economy and offers investment managers exposure to the

Indian market in one portfolio. The S&P CNX Nifty stocks represent about 67.27% of the free float market capitalization of the stocks listed at National Stock Exchange (NSE) as on September 30, 2015. Moreover, as per the survey, during CY 2012, MCX was the world's largest exchange in silver and gold futures, second largest in copper and natural gas futures, and the third largest in crude oil futures.

Survey of Literature

A number of economic literatures have delved into the short-term and long-term impact of gold prices on macroeconomic variables like inflation, growth rate, exchange rates, employment effects and monetary policy. There is, however, little research on how the Indian gold price is influenced by Indian stock markets' reaction. Many studies have documented the rising trend of domestic gold price.

Demirer, R., Lee, H. T., & Lien, D.(2015), in their article "Does the stock market drive herd behavior in commodity futures markets?" Confirms that there is no any significant effect of the stock market on herd behavior in the commodity futures market.

KEONG, C. M. (2014) , under his

Doctoral dissertation “ *Relationship between commodities market and stock markets: Evidence from Malaysia and China* ” concluded that relationship is negative between gold and stock markets so helpful in portfolio allocation.

Bhardwaj, G., & Dunsby, A.(2013) in their paper “ The Business Cycle and the Correlation between Stocks and Commodities” found that the link between stock-commodity correlation and business cycle is stronger for industrial commodities than for agricultural commodities. Lombardi, M. J., & Ravazzolo, F. (2013), through their research paper “On the correlation between commodity and equity returns: implications for portfolio allocation” has suggested negative correlation between commodity and equity returns. Thuraiamy , Sharma, & Ali Ahmed , (2013) , in their paper they tested spillover effects between Asian equity market volatility of the two most dominant commodities , namely , crude oil and gold futures . They find that volatility shocks in established and mature equity markets , such as the Japanese market, spill over to the crude oil and gold futures market , while immature markets tend to have spillover effects from commodity

futures to equity markets .

Sumner et al. (2012), Bashiri (2011) and Gaur et al (2010) confirmed that in crisis of countries stock market slump and the gold price always trends higher. Many studies have documented the long-run and shortrun relationships among stock price index and gold price in developed and developing countries. Yahyazadehfar et al. (2012) have used a sample of monthly data from March 2001 to April 2011 with the application of Variance Auto Regression model and Johansen-Joselius cointegration test to determine the impact of gold price on stock prices of Teheran Stock Exchange. The estimated long-run relationship shows that there is a negative relationship between gold and stock prices in Iran. They confirmed that gold price can greatly affect the stock market. There is no relationship with the stock market and gold rate and stock market is not a reason for increasing gold rate Kaliyamoorthy and Parithi, (2012) , their study intends to examine the relationship between gold market and stock market (SENSEX) for a period June 2009 to June 2010 using chi-square analysis. There is no relationship with the stock market and

gold rate. Stock market (SENSEX) is increased and gold rate is also increased. Stock market is not a reason for increasing gold rate. There was no existence of long term relationship among the gold prices and stock price indices.

Shahzadi et al.,(2012), their paper evaluates the impact of gold prices on Karachi Stock Exchange which is major stock exchange of Pakistan by using data of five years from 2006 to 2010 using Johansen's Co Integration Test and Granger Causality Test (GCT) have been used. There is a perfectly negative relationship between monthly average gold prices and Karachi Stock Exchange 100 index Le et al. (2011) investigated the association between gold price and crude price based on monthly time series data from 1986 to 2011 and showed that both the variables are closely linked with each other.

Wang (2010) observed the association between commodity market variable and stock market of one European country and two South Asian countries based on monthly time series data between 1999 and 2008 and confirmed that stock market of the European country is considerably associated with two macro-economic indicators but the stock market of two

selected countries are not associated with macroeconomic indicators in the long period.

Gilmore et al. (2009) illustrated that stock market index was linked with gold mining companies' gold price index in the long period after utilizing the daily time series data between 1996 and 2007 and furthermore illustrated that both the variables persuaded each other in the short - run.

Smith (2001) wanted to find out the relationship between the price of gold and stock price indices for the United States over the period beginning in January 1991 and ending in October 2001 using cointegration test and Granger causality test. Over the period examined, there is no cointegration involving a gold price and US stock price index. There is no long-run equilibrium and the series do not share a common stochastic trend. Only short-run relationships are evident.

Keeping in view of this, the present study examines the relationship between Indian stock market index and Indian gold prices for the period from January 2005 to December 2012 with a purpose to analyze the factors responsible for rising gold price in India.

Research Objectives & Hypothesis

3.1 Research Objectives

The objective of this study is to find out the causal relationship between Indian stock market here represented by Nifty and Indian gold prices. It utilizes multi-approaches, specifically, unit root, co integration test and granger causality tests. This study uses most recent monthly observations of NIFTY index and data of Gold spot prices from by averaging daily data of a month since 2005 covering the period of the global financial crises to 2015. This study is organized into 7 sections as follows: Section 1 gives Introduction, while Section 2 addresses the literature review. Section 3 presents research objectives & hypothesis; Section 4 presents research methodology, Section 5 the data sets & analysis. Section 6 provides the concluding remarks and Finally, Section 7 presents references.

3.2 Research Hypothesis

Unit Root Test Hypothesis:

H_0 : Series is stationary.

H_1 : Series is non-stationary.

Co integration Test Hypothesis:

H_0 : There is no co-integration relationship between variables.

H_1 : There is co-integration relationship between variables.

Granger Causality Hypothesis:

H_0 : LnNifty does not Granger cause LnGold.

H_0 : LnGold does not Granger cause LnNifty.

4. Research Methodology

To investigate the existence of long-run equilibrium relationship among time-series variables, different statistical tests are used. To analyze the lead lag relationship between in the sample, Granger causality test is used which is proposed by C.J. granger in 1969; whereas, hypotheses will be accepted based on F-test results at significance level of 0.05 which provide the evidence of explained relationship between predictors and endogenous variables. To analyze the impact of gold prices on Nifty Index, monthly data is used which is gathered from various reliable statistics. To ensure the accuracy of Nifty statistics, daily-basis data is derived which transformed into average monthly data; whereas, for execution of statistical analysis, data is further transformed into average market returns. To obtain accurate findings to test research hypotheses, various statistical tests are used including 1: Descriptive Statistics, 2: Unit Root Analysis (Augmented Dickey Fuller) 3:

Johansen Co-integration test and 4: Granger Causality Test.

Descriptive statistics are used to evaluate the mean, standard deviation, median, skewness and probability of the variables that are under consideration in the research. Alongside the variance of data, these values show the distribution of error terms. Co-integration method is used to detention the actual depiction of the co-movements of gold prices along with the Nifty index. Co-integration approach entails the actual series. ADF assumes that the variance is constant and the error terms are independent. Statistically, to confirm the series of factors in a stationary form, Unit Root Test (ADF) is used. In this study, ADF model is applied to investigate the presence of single unit root. To run johansen test; co-integration test is applied which estimates the long-term relationship among the observation factors. In 1969, Granger –Causality test is offered by C.J. Granger which examines the lag lead relationship at 0.05 level of significance with taking F-test findings. These findings provide the evidence of leading relationship among the under observation variables.

4.1 Unit Root Tests

Unit root tests are commonly used to test the stationary property of a time series data. In this study, Augmented Dickey-Fuller (ADF) test is employed to test the null hypothesis of a unit root.. However, under the assumption of the random walk, the price series must have a unit root while the return series must not. Test statistics can be based on the OLS estimation results from a suitably specified regression equation. For a time series Y_t , two forms of the "augmented Dickey-Fuller" regression equations are:

$$\Delta Y_{it} = \alpha_{0i} + \theta_i Y_{it-1} + \alpha_{i1} + \sum_{j=1}^p \delta_{ij} \Delta Y_{it-j} + \varepsilon_t \quad (1)$$

$$\Delta Y_{it} = \alpha_{0i} + \theta_i Y_{it-1} + \sum_{j=1}^p \delta_{ij} \Delta Y_{it-j} + \varepsilon_t \quad (2)$$

where ε_t for $t = 1, \dots, N$ is assumed to be Gaussian white noise. Equation (1) is with-constant, no-trend and (2) is with-constant, with-trend. The number of lagged terms p is chosen to ensure the errors are uncorrelated. When $\alpha_i = 0$ the time series Y is non stationary so that standard asymptotic analysis cannot be used to obtain the distributions of the test statistics.

4.2 Co-integration Test (Johansen Approach)

Co-integration, an econometric property of time series variable, is a precondition for the existence of a long run or equilibrium economic relationship between two or more variables having unit roots (i.e. Integrated of order one). The Johansen approach can determine the number of co-integrated vectors for any given number of non-stationary variables of the same order. Two or more random variables are said to be co-integrated if each of the series are themselves non – stationary. This test may be regarded as a long run equilibrium relationship among the variables. The purpose of the Co-integration tests is to determine whether a group of non – stationary series is co-integrated or not. Having concluded from the ADF results that each time series is non-stationary, i.e. it is integrated of order one $I(1)$, we proceed to the second step, which requires that the two time series be co-integrated. In other words, we have to examine whether or not there exists a long run relationship between variables (stable and non-spurious co-integrated relationship). In our case, the mission is to determine whether or not stock price (SP) and gold price

(GLD) variables have a long-run relationship in a bivariate framework. Engle and Granger (1987) introduced the concept of co-integration, where economic variables might reach a long-run equilibrium that reflects a stable relationship among them. For the variables to be co-integrated, they must be integrated of order one (non-stationary) and the linear combination of them is stationary $I(0)$. The crucial approach which is used in this study to test co-integration is called the Johansen co-integration approach. The Johansen approach can determine the number of co-integrated vectors for any given number of non-stationary variables of the same order.

4.3 Granger Causality Test

Causality is a kind of statistical feedback concept which is widely used in the building of forecasting models. Historically, Granger (1969) and Sim (1972) were the ones who formalized the application of causality in economics. Granger causality test is a technique for determining whether one time series is significant in forecasting another (Granger, 1969). The standard Granger causality test (Granger, 1988) seeks to determine whether past values of a variable helps

to predict changes in another variable. The definition states that in the conditional distribution, lagged values of Y_t add no information to explanation of movements of X_t beyond that provided by lagged values of X_t itself (Green, 2003). We should take note of the fact that the Granger causality technique measures the information given by one variable in explaining the latest value of another variable. In addition, it also says that variable Y is Granger caused by variable X if variable X assists in predicting the value of variable Y . If this is the case, it means that the lagged values of variable X are statistically significant in explaining variable Y . The null hypothesis (H_0) that we test in this case is that the X variable does not Granger cause variable Y and variable Y does not Granger cause variable X . In summary, one variable (X) is said to granger cause another variable (Y) if the lagged values of X_t can predict Y_t and vice-versa.

We test for the dearth of Granger causality by estimating the following VAR model:

$$Y_t = a_0 + a_1 Y_{t-1} + \dots + a_p Y_{t-p} + b_1 X_{t-1} + \dots + b_p X_{t-p} + U_t \quad (3)$$

$$X_t = c_0 + c_1 X_{t-1} + \dots + c_p X_{t-p} + d_1 Y_{t-1} + \dots + d_p Y_{t-p} + V_t \quad (4)$$

5. Data Sets & Analysis

5.1 Data Sets

The empirical research is conducted using monthly data ranging from Jan 2005 to Dec 2012 which covers 96 monthly observations. The empirical investigation considers NSE (Nifty) share price indices as proxy for Indian stock prices and gold prices from MCX. All data have been collected from website of NSE and website of MCX. All the variables are taken in their natural logarithms to reduce the problems of heteroscedasticity to maximum possible extent.

5.2 Data Analysis

Table 1 explains descriptive statistics which used to calculate the Mean, Median, Standard deviation, variance, Skewness, Maximum and Minimum of the study variables. Findings of descriptive analysis indicated that mean values of gold prices taken from MCX and Nifty prices from NSE are depicted as

Table 1 (Descriptive Statistics)

Variable	Count	Mea	StDev	Minimum	Median	Maximum	Skewness	Kurtosis	AD
Gold	96	1635	7664	6170	14737	31632	0.59	-0.88	2.72
Nifty	96	434	1193	1982	4769	6094	-0.50	-0.96	2.29

The relatively higher figure of standard deviation indicates that the data dispersion in the series is quite large. This finding suggests that almost all the years included in the sample were having larger dispersion level of different variables under our study across time series.

More specifically, skewness is positive for gold prices and negative for nifty prices which indicates flatter tails than the normal distribution. Kurtosis value of both variables are negative that shows data is not normally distributed and distribution is platykurtic. While testing the normality, it was found that Anderson Darling statistics where p values for

variables Gold Price & Nifty Price are lower than 0.10 which implies that variables under our consideration are normally distributed.

Table 2 explained the results that time series are not at stationary 'at level' but all are at stationary position at '1st difference'. The time series of all two variables are not stationary form 'at level' but all are at stationary status at '1st difference'. Augmented Dickey Fuller test exposed that the error which has constant variances are statistically independent. This assessment permitted the error variance to be less dependent and heterogeneously distributed.

Table 2: ADF Unit Root Test on Log of Prices of Nifty & Gold

Particulars	At Level	At 1 st Difference
Nifty	-2.448	-30.012*
Gold	-2.128	-35.452*
H ₀ : Series is stationary	Not Rejected	Rejected

* Significance computed by p-value for rejection of null hypothesis reported as $P \leq 5\%$

Table 2 presents the result of unit root test. The ADF unit root test is based on the null hypothesis. Y_t is not

integrated of order zero. According to my observation, as calculated ADF

non-stationary at level and stationary at first difference level. The series has unit root exist at first difference level. The series is integrated at I(1).

To analyze the co-integration vectors among gold prices and Nifty; Johansen co-integration method is used. This expounds the long-run relationship among dependent variable Nifty and independent variable i.e. Gold prices.

Findings of Co-integration Trace Statistics are given in Table 3 which shows that gold prices have no long-term relationship with Nifty as null hypothesis was not rejected for the given period.

Here

Ho: There is no co-integration relationship between variables.

Table 3 : Johansen Co-integration Ranks & Maximum Value Tests

Ho, r is no. of Cointegrating Relation	Trace Statistics	Critical Value at 5%	Probability	Max Eigen Value	Critical Value at 5%	Probability
$r \leq 0$	6.055977	15.49471	0.6889	4.80155	14.2646	0.7667
$r \leq 1$	1.254427	3.841466	0.2627	1.254427	3.841466	0.2627

H1: There is co-integration relationship between variables. Here trace statistics are greater than the critical level. Hence, null hypothesis is accepted here. Hence there is no long term relationship between the indices. The co integration test confirmed that gold prices and stock prices are not co-integrated.

Results of Granger causality test are shown in **Table 4** which displays that

Average Gold prices lead with Nifty Index, hence, null hypothesis rejects

Table 4 : Granger Causality Test between log prices of Nifty & Gold.

Null Hypothesis	F-Statistics	Probability	Decision
LnNifty does not Granger cause LnGold	0.63877	0.5377	Accept
LnGold does not Granger cause LnNifty	5.02167	0.02323	Reject

India and therefore we find that the direction of causality between gold price and stock price in India is generally unidirectional (causality runs from gold price to stock price).

6. Findings & Discussion

During the period of global financial crisis, stocks markets crashed but gold price continues to increase in the country. This could be explained as follows: The extent of holding of gold in country like India is widespread but stocks are not held by all, though retail participation in the stocks markets might have gone up in the last few years. The paper tries to assess empirically, the causal relationship between gold price and stock market (here represented by Nifty) in India using monthly data over the period January 2005 to December 2012. The unit root properties of the data were examined using the Augmented Dickey Fuller test (ADF) after which

the co-integration and causality tests were conducted. The major findings include the following:

The unit root test clarified that both gold price and stock price are non-stationary at level but the series of both variables of consideration- Gold & Nifty were found to be integrated of order one. The co-integration test has also confirmed that during the observation period that Gold price and Nifty are not co-integrated which disapproves any long term equilibrium relationship between the two taken variables. The Granger causality test finally confirmed the presence of unidirectional causality which runs from gold price to stock price.

This research is one of its unique category of research which will give potential researchers a chance to investigate the effect of gold prices on stock prices using the alternative methodologies and daily or weekly data to empirically assess whether the

results are sensitive to the frequency of data. Other aspects on which future researchers can pay attention are the longer time horizon, larger sample sizes using other macroeconomic and non-macroeconomic variables.

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Prevention of Road Accidents: A Case Study on Cachar District of Assam

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Abstract:

All sorts of infrastructure, particularly roads play a vital role towards social & economic development of a region. They not only serve the purpose of transportation but also determine to a large extent the level of progress & development of a particular region, state or even a country. But in present situation due to the enormous increase in traffic intensity like vehicle population, lack of consciousness regarding traffic rules & tendency to violate safety norms, the risk factors involved in road transportation has highly increased. The number of road accidents in India is increasing at an alarming rate year-by-year, ultimately resulting in social distress & economic loss. The North-Eastern region of India is suffering from lack of infrastructure for all means of transportation. Road transport is the most common mode of transportation in this region of India. But road

accidents in almost all States of India are continuously increasing and the situation is also same in the North-Eastern States of India. This paper focuses on the causes of road accidents on the three national highways within Cachar District of Assam, which have been selected as case study area in this paper & also recommends necessary preventive measures to reduce road accidents on those national highways.

Key words: Infrastructure, Transportation, Traffic Rules, Safety Norms & Road Accidents

Introduction

In recent time, with enormous increase in vehicle population throughout the country, road safety and prevention of road accidents have become a great challenge. Considering the North-Eastern region of India, the situation is quite similar to the rest part of the country but added extra concern as its roads runs mostly on hills. In terms of the road infrastructure & modernization in the road transportation facility, this region is comparatively less developed than the rest of the country because of

complexity and challenges it has. Road transportation is the most common mode of transportation in North-East India. Many places of the region do not have rail or air connectivity. Therefore, the common people are highly dependent on road transportation. But the poor road condition, narrow width etc have become a major threat for the road users. The condition becomes even worse during the rainy season resulting in heavy landslides and road blockages, ultimately leading to social distress and major economic set back of this region.



Fig 1: Bus accident at Uluoni in Nagaon district (Assam), dated 26th October, 2014

Road safety has become a prime concern for the region. The number of road accidents in almost all the States

of this region is in the increasing trend, resulting in a highly serious situation as indicated in Table-1.

Table-1: State-wise comparison in the increase in vehicle population vis-a-vis increase in the number of road accidents from 2011 to 2012

Sl. No.	North-Eastern States of India	Total no. of registered vehicles as on Mar'2011 (in 000')	Total no. of registered vehicles as on Mar'2012 (in 000')	% Growth	Road Accidents in 2011	Road Accidents in 2012	% Growth
1	Assam	1582	1807	14.222	6569	6535	-0.517
2	Tripura	188	204	8.51	834	888	6.474
3	Manipur	207	215	3.864	691	771	11.577
4	Meghalaya	176	198	12.5	261	355	36.015
5	Mizoram	93	102	9.677	97	110	13.402
6	Nagaland	273	291	6.593	32	42	31.25

(Source: NCRB data bank, Ministry of Home Affairs)

(Data for Arunachal Pradesh & Sikkim are not available)

Assam has an area of 78,438 sq km, comprising of 33 districts & has totally 21 nos of national highways passing through it, having total length of 2836 km.

accidents and that causes disturbances in national peace and

The work of Meshram and Goliya during 2013, mentioned the increasing growth rate of vehicles day by day whereas the length of road is same from year to year with very minimal increase in length. This results in causing accidents. Rao, Madhu, Jalihal & Reddy during 2005, mentioned the different reasons for road accidents, and also highlighted the road conditions. Das Gupta & Mandal during 2013 conducted a study where the focus was on road

located in a strategic position in the Cachar district of Assam and is the nerve centre to many States in the North-Eastern region of India (viz. Mizoram, Manipur & Tripura). Those NE States are highly dependent on Silchar town for their business activities and has to pass through this town in order to connect to the rest part of the country.

Silchar is located at 24°49'38" N latitude & 92°47'52" E longitude & at an elevation of about 80 ft above mean sea level.

The stretches of NH 6, NH 37 and NH 54 (within Cachar District, Assam) considered in this study are shown in Fig. 2.

The three study stretches considered in this study have certain similarities- the three stretches are two-lane roads with lesser width for the maximum portions and have no divider or proper road markings. The three study stretches viz. NH 6, NH 37 & NH 54 passes through Cachar district of Assam & approaches toward three hill states- Meghalaya, Manipur & Mizoram respectively.

3. Data Analysis

Secondary data are collected from National Crime Records Bureau (NCRB data bank), Ministry of Home Affairs,

Govt. of India, S.P Office, Silchar, Dist: Cachar, Assam & Ministry of Road Transport & Highways (MoRTH), Govt. of India. Analyses are presented in the subsequent sections.

Analysis using Fish Bone Diagram (shown in Fig.7) is carried out to identify (through brainstorming) and pictorially represent the specific causes of road accidents on the three study stretches considered in this study.

Primary data has been collected by conducting survey through questionnaire method (likert scale type) to prioritize the criticality of those causes of road accidents in the study area. The details regarding this survey are described later.

3.1 Analysis of Secondary data: NCRB data

An observation of Table-1 (Source: NCRB data bank) reveals that the total number of registered vehicles in almost all the States of North- Eastern region of India is in the increasing trend every year (for e.g. 2011 & 2012). The growth in the number of registered vehicles has also resulted in an increase in the number of road accidents in those States (for 2011 & 2012). This type of similar distressful situation has been predominant in this

region since last decade (2000-2010) (as discussed in the previous paper, Ref. no. 3), ultimately resulting to an alarming situation in this region & has also created panic among the common people dependent on road transportation. The road infrastructure in many places of this region is in a dismal condition and is becoming incapable to bear the load of the continuously increasing number of vehicles.

Assam being the most populated & major State in North-East India has also the maximum number of registered vehicles compared to other States of this region. As a result, the number of road accidents at Assam is also maximum in comparison to the other States of North-East India. In Assam, during 2011 & 2012, though there is negative growth percentage in the number of road accidents but the actual number of road accidents that took place in Assam during 2011 & 2012 is much more than those of the other North-Eastern States of India. The relation between number of registered vehicles in Cachar district and number of road accidents on the case study area (within Cachar dist, Assam) is explained later through regression analysis.

3.2 Analysis of Secondary data: S.P Office data, District Transport Office data & MoRTH data

(i) *Source of secondary data*- The number of road accidents on the three study stretches for the past four consecutive years (2010-2013) are collected from the Office of Superintendent of Police, Silchar, Cachar District. The data on the number of road accidents on the national highways in Assam (2010-2013) has been collected from the MoRTH data bank, Govt. of India. The collected data are shown in Table- 2.

The road accident data on the three national highways (within Cachar district) as indicated in Table-2 are graphically represented in Fig. 3.

Fig. 3 reveals that the number of road accidents on the three national highways (within Cachar district, Assam) is in the increasing trend (from 2010 to 2013). Those three national highways are two-lane roads having lesser width and has no separator or road markings which results in severe cases of head-on collisions on several occasions. Moreover, the number of road accidents on NH 37 & NH 54, during those 4 consecutive years, is comparatively more than those on NH

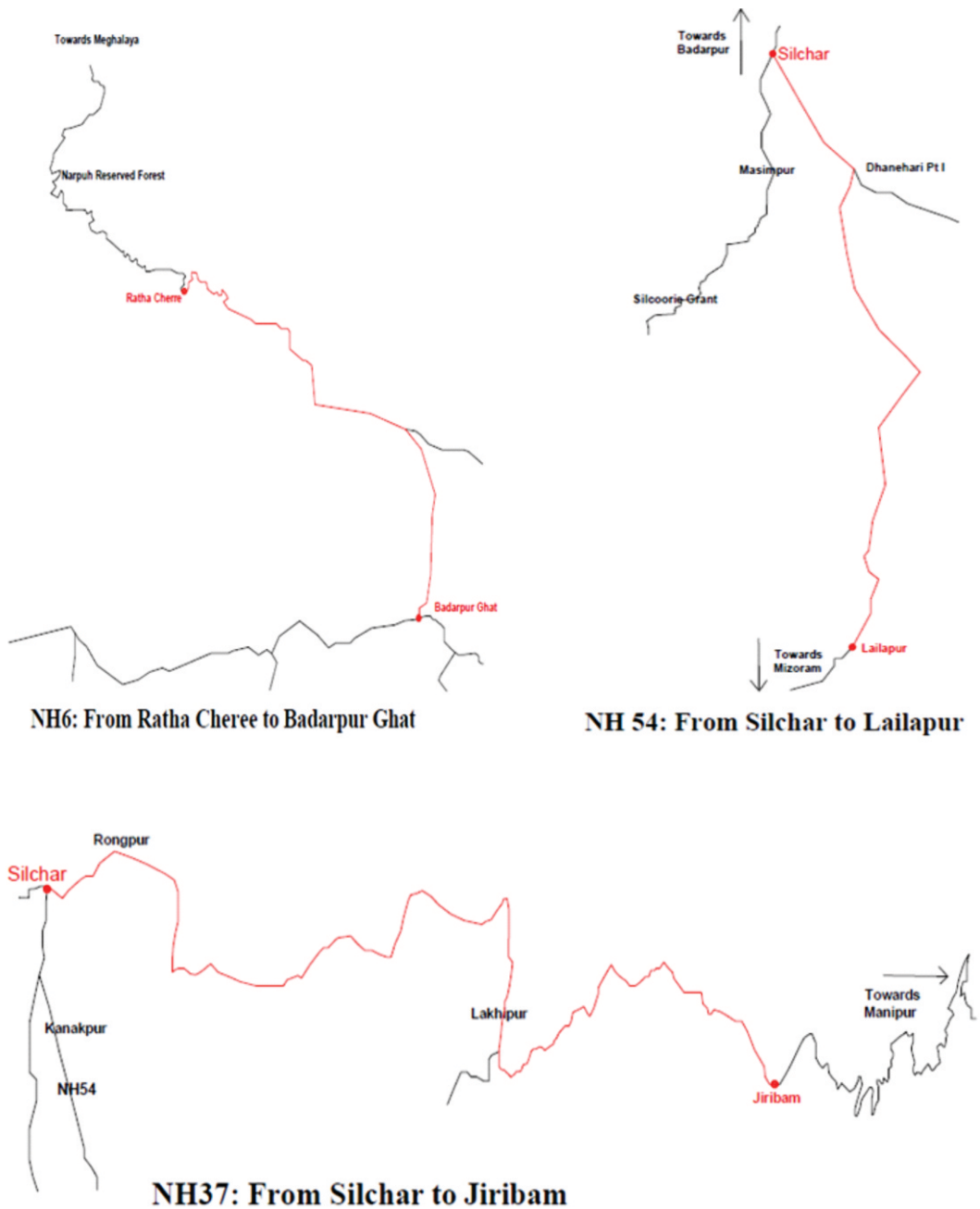


Fig 2: Schematic representation of the stretches of NH 6, NH 37 and NH 54 (within Cachar District, Assam)

Table-2: Comparison of the number of road accidents on the national highways in Assam vs the number of road accidents on the case study area

State	Year	No. of road accidents on national highways (in Assam)	District (State: Assam)	Year	No. of road accidents on NH 6 (within Cachar district)	No. of road accidents on NH 37 (within Cachar district)	No. of road accidents on NH 54 (within Cachar district)
Assam	2010	3209	Cachar	2010	23	56	57
	2011	3425		2011	33	61	60
	2012	3393		2012	44	60	66
	2013	3718		2013	43	61	71
Total=					143	238	254

(Source: Ministry of Road Transport & Highways (MoRTH) data bank and S.P Office, Silchar, Dist: Cachar, Assam)

6. It can be justified by the fact that there are many road crossings on the

rural market areas beside NH 37 & NH 54 (within case study area) & the

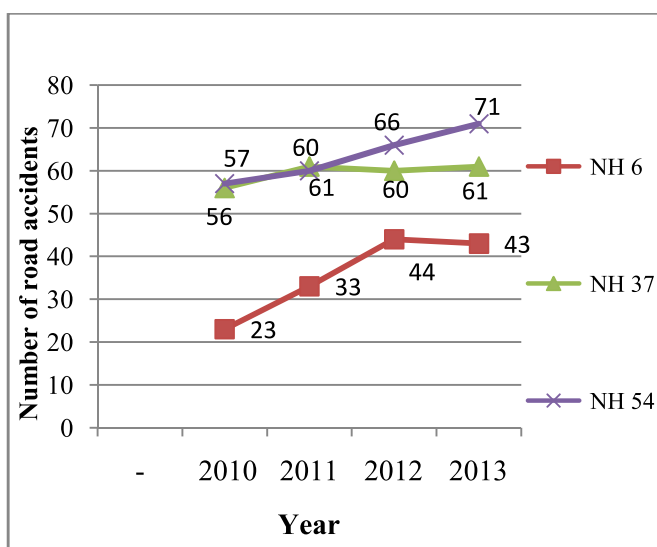


Fig 3: Comparison of the number of road accidents on NH 6, NH 37 and NH 54 (within Cachar District, Assam) from 2010 to 2013

(Source: SP Office, Cachar District)

vehicles running on those national highways are usually at high speeds and as a result those drivers often meets up with an accident. Also, absence of sufficient road side traffic signs, speed limits & information about road safety measures on those national highways are also responsible for those accidents. The number of rural market areas beside NH 6 (within Cachar district) is comparatively less and also has sufficient road side traffic signs & information about road safety measures, resulting in comparatively lesser number of road accidents.

(ii) Locations of accident spots on the

study stretches- Along with the secondary data (received from S.P Office, Cachar Dist.) on the number of road accidents on the three study stretches, data on the locations of road accidents on those stretches for the corresponding year is also obtained. Among the various locations, some of the locations on those study stretches are common for the four consecutive years considered for this study. For NH 6, the common locations of road accidents are- Madua, Digorkhal & Malidahar. For NH 37, common locations of road accidents are- Jirighat colony,

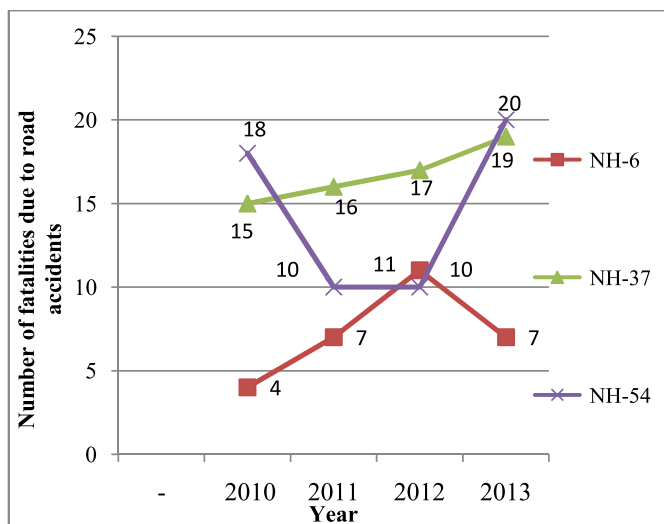


Fig 4: Comparison of the number of fatalities due to road accidents on NH 6, NH 37 & NH 54 (within Dist: Cachar, Assam) from 2010 to 2013 (Source: S.P Office, Dist: Cachar, Assam)

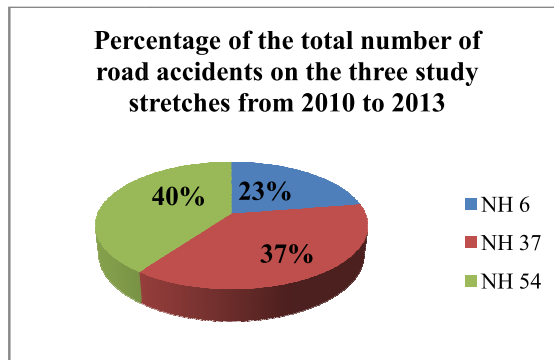


Fig 5: Comparison of percentage of the total number of road accidents on the three study stretches from 2010 to 2013

Pailapool, Phulertol & Baskandi. For NH 54, common locations of road accidents are- Sonabarighat, Notun bazaar & Lailapur. Road side display boards mentioning speed limits and accident prone area must be set up on those locations in order to reduce road accidents.

(iii) Type of vehicle(s) involved in accident- From Fig. 6, it can be observed that the involvement of four wheelers is the maximum in those road accidents on the above mentioned study stretches followed by three wheelers. This highlights that the risk in terms of number of fatalities maximizes during road accidents because more passengers are accommodated in those vehicles, travelling mainly for long distances. The risk of two-wheelers travelling in

those study stretches is also quite high and many accidents have already took place during those four consecutive years considered for this study.

In Fig. 6, 2-wheeler mainly represents motor bikes and also scooters in certain cases, 3-wheeler mainly represents auto-rickshaws and other mini goods carriers, 4-wheeler mainly represents all passenger vehicles like cars, utility vehicles, light commercial vehicles (LCVs), mini buses etc & 6-wheeler mainly represents heavy commercial vehicles (HCVs) like trucks, buses, tippers etc.

(iv) Causes of those accidents- The data on the causes of those road accidents on the three study stretches (obtained along with the road accident data from S.P Office, Cachar District) are quite generic and

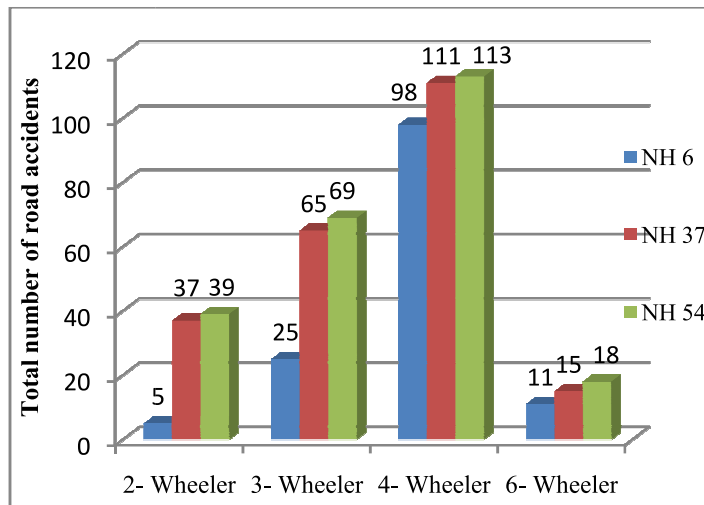


Fig 6: Comparison of the total number of road accidents (from 2010 to 2013) for various categories of vehicles on the three study stretches (i.e. NH 6, NH 37 & NH 54) (Source: S.P Office, Dist: Cachar, Assam)

amorphous. To identify the main aggravating & prime causes of road accidents on those three study stretches a brainstorming tool named “Fish Bone Diagram” is applied to meet the necessary requirement. To further analyse the situation regarding the increase in the number of road accidents on the case study area, data of registered vehicles for various years has been collected from District Transport Office, Dist: Cachar, Silchar, Assam. The collected data are indicated in Table-3.

A regression analysis has been done between X and Y variables (i.e. between Total number of registered

vehicles in Cachar district and Total No. of Road Accidents on the three national highways (within Cachar district)) using MS excel tool. The result obtained from the regression analysis is as follows-

Equation: $Y = a + bX$ (where, $a = 42.905$ & $b = 0.001399$) (from table)

Total number of Road Accidents on the three national highways (within Cachar district) = $42.905 + 0.001399$ (Total number of registered vehicles in Cachar district)

In the above equation, Y is the

Table-3: Registered vehicle data of Cachar district from 2010-11 to 2013-14 and its yearly growth percentage

Sl. No.	Year	Total number of registered vehicles in Cachar district (X)	% Growth
1	Till 2010-11	68694	
2	Till 2011-12	78063	13.63
3	Till 2012-13	87229	11.74
4	Till 2013-14	97194	11.42
		Avg. growth % =	12.26%

(Source: District Transport Office, Silchar, Dist: Cachar, Assam)

Table-4: Total number of road accidents on the case study area from 2010 to 2013

Sl. No.	Year	Total number of Road Accidents on the three National Highways (within Cachar district) (Y)
1	2010	136
2	2011	154
3	2012	170
4	2013	175

(Source: S.P Office, Silchar, Dist: Cachar, Assam)

dependent variable and X is the independent variable. By putting the value of X (i.e. the total number of registered vehicles in Cachar district) for any particular year the value of Y (i.e. Total No. of Road Accidents on the three national highways (within Cachar district)) for that corresponding year can be calculated.

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.970962126
R Square	0.942767449
Adjusted R Square	0.914151174
Standard Error	5.160871854
Observations	4

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	877.4808034	877.4808	32.94515	0.029037874
Residual	2	53.26919659	26.6346		
Total	3	930.75			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	42.90520095	20.34706161	2.108668	0.169486	-44.6411392	130.45154	-44.641139	130.45154
X Variable 1	0.001399176	0.000243768	5.739786	0.029038	0.000350327	0.002448	0.00035033	0.002448

Moreover, adjusted R square value of 0.9141 shows a better explanation of Y variable for the corresponding X variable. With the help of the above equation, we can forecast the increase in the number of road accidents in the case study area with the corresponding increase in the number of registered vehicles in Cachar district in the coming years (considering the present trend).

The continuous increasing trend in the number of road accidents per year on the case study area along with the increase in the number of registered vehicles in Cachar district has been a matter of serious concern and hence needs attention of the concerned departments for preventing such awful situation.

4. Application of Fish Bone Diagram

on the study

Fish bone diagram or Cause & Effect diagram is a graphical method for finding the root causes of an effect. On the basis of the data collected from S.P Office, Silchar and also through brainstorming using Fish Bone Diagram, the prime causes of road accidents on the three study stretches (i.e. NH 6, NH 37 & NH 54, within Cachar district) are identified. Those causes are represented in the Fish Bone Diagram (Fig 7) and the crucial factor(s) specifically responsible for each of those causes of road accidents on the three study stretches are also identified & highlighted in the diagram.

The Fish Bone Diagram helped to summarize & pictorially represent the major problem being discussed in this case study. The diagram also helped to

diagnose the situation better. Based on the causes of road accidents identified in this diagram, necessary remedial measures have been recommended. From the fish bone diagram, it can be inferred that the road accidents due to human error are the main aggravating causes that maximizes the occurrence of the effect (i.e. road accidents).

5. Analysis of Primary data (Source: Through Primary Survey)

To identify the criticality of those

various causes of road accidents on the three study stretches, (in addition to the continuously increasing number of registered vehicles in Cachar district) a survey has been conducted through questionnaire method (likert-scale type). The various causes (identified referring S.P Office data & also using Fish Bone Diagram) considered for this survey are:

1. Over-speeding.
2. Drunken driving.
3. Road condition.

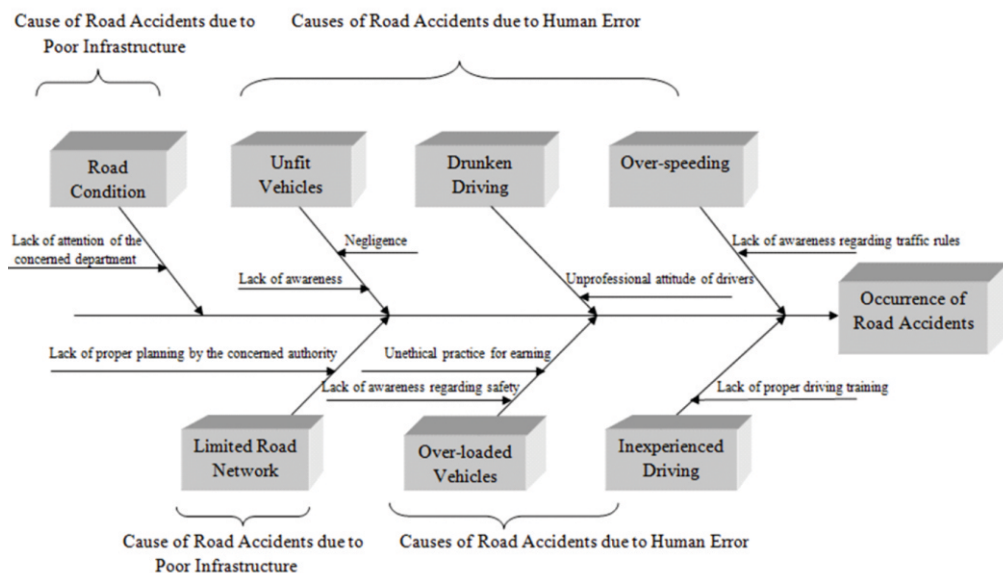


Fig 7: Fish Bone Diagram

4. In-experienced drivers.
5. Unfit vehicles.
6. Over-loaded vehicles.
7. Limited road network.

For conducting the survey a five point likert-scale type questionnaire was prepared taking into consideration the above mentioned seven causes of road accidents. The sample size considered for this survey is 35 candidates. The survey was administered by personal visits to various departments and collecting the responses of the questionnaire from the selected candidates.

The response rate of the survey from the target group was very much satisfactory and the survey result helped to capture valuable insights. The target group for this survey consists of State Govt. officials from various departments (viz. PWD, Assam Police- Traffic Branch, Silchar etc.), officials from automotive dealers, vehicle fleet owners, officials from motor vehicle associations, surveyor & loss assessor from various insurance companies etc. The survey result helped to provide a clear opinion regarding the criticality & weightage of the above mentioned

causes of road accidents on the study stretches & also helped to rank those causes of accidents. With the help of the result of the survey, as provided by the respondents, the average value of rating of each of the causes of road accidents are calculated and based on that the ranking of those causes has been done.

From Table-5, it can be observed that maximum weightage (based on ranking) regarding the causes of road accidents on the three study stretches is mainly emphasized on causes due to human error (like road accidents due to over-speeding, in-experienced driving, drunken driving, over-loading of vehicles & driving unfit vehicles) which highlights the unprofessional attitude & lack of driving skills of the drivers of North-East India.

Also, to a certain extent, the poor road condition at many places & lack of proper infrastructure for safe road transportation in this North-Eastern region of India (considering the three study stretches as a sample) are also the crucial factors responsible for many road accidents.

6. Remedial measures for prevention of road accidents

Table-5: Ranking of the causes of road accidents on the three study stretches (based on survey result).

Causes of road accidents on the study stretches	Ranking of the causes (based on criticality)
Over- Speeding	1
In-experienced Drivers	2
Drunken Drivers	3
Over-loaded Vehicles	4
Unfit Vehicles	5
Limited Road Network	6
Road Condition	7

The increase in road accidents in this region has become an awful epidemic and hence needs serious attention to reduce the number of road mishaps. Over-speeding, lack of awareness regarding traffic rules & road safety, unprofessional attitude of drivers, poor driving skills, poor infrastructure and lack of road side traffic signboards etc. are some of the crucial factors that mainly results in road accidents in the three study stretches discussed in this paper. Therefore, suitable & appropriate remedial measures have been recommended below to reduce the number of road accidents on the three study stretches:

6.1 Over-speeding: Competition on roads while driving has been a common psychological phenomenon in many drivers resulting in non-compliance of traffic rules &

regulations. Due to over-speeding on roads, mainly on the national highways, many times drivers lose control on the vehicles and therefore it is the most vital reason for the maximum number of road accidents. To reduce the number of road accidents due to over-speeding on the three national highways (viz. NH 6, NH 37 & NH 54) awareness of drivers regarding road safety, Central Motor Vehicle Rules (CMVR) 1989 norms etc need to done widely. Strict measures from the administration need to be implemented including penalty charges due to over-speeding, sudden over-taking by a vehicle at high speed ignoring lane discipline etc. Moreover, proper road side sign boards mentioning speed limits with specific range of distance should be displayed on the three

abovementioned national highways for awareness & cautiousness of the drivers and also to avoid any unfortunate incidence.

Installation of Speed Governors on Transport Vehicles: Speed controlling devices (i.e. speed governors) must be fitted in all types of transport and goods vehicles. Road accidents have been continuously increasing in the North-Eastern region of India and it has been observed that over-speeding is the most vital cause for maximum number of road accidents. Hence, to reduce the number of road accidents in the case study area and also in the national highways in the other areas of North-East India, speed governors must be installed in all transport vehicles. As per the amendments to Rule 118 of Central Motor Vehicles Rules (CMVR), 1989, speed governors should be fitted in transport vehicles with a maximum preset speed limit of 80 km per hour. In the case study area, many schools are located adjacent to the three national highways. Therefore, speed governors must be fitted on the school buses on mandatory basis with a maximum preset speed limit of 50 km per hour. Speed governors are being installed

on all transport & goods vehicles at Tamil Nadu registered since 2012 and the practice is being strictly complied since then.

6.2 In-experienced drivers: Lack of proper training to youths before driving vehicles is another major cause responsible for many road accidents. Moreover, issuing driving license to the candidates by the concerned authority without proper testing of their driving knowledge makes them (candidates) feel negligent regarding the requirement of proper training before driving a vehicle. Over-speeding, inattentiveness, aggressive driving, ignorance of traffic rules & regulations, poor knowledge regarding road signs etc. are some of the common behavioral traits among the in-experienced drivers highly responsible for large number of road accidents. For prevention of road accidents in the Case Study area, priority should be provided to 'education' and 'enforcement'. Emphasis must be provided to educate the young drivers on driving skills and also strict enforcement of completion of driving training course at authorized driving training

institutes must be made compulsory before applying for fresher's license. Also, awareness programs on road safety must be organized by the concerned departments in collaboration with motor vehicle associations, various fleet owners, educational institutions etc. Moreover, for mass awareness regarding rules & regulations on road safety, publicity through print and electronic media must be done. In addition, strict compliance of traffic rules & regulations must be ensured through proper enforcement procedures & high penalty charges must be levied in case of any non-compliance.

6.3 Drunken drivers: Drinking while driving has been a common behavior mainly among the drivers of commercial vehicles plying on the national highways. But such type of behavior of the drivers often results in road mishaps and thus has become a menace towards road safety. Strict enforcement of penalty measures (viz. huge amount of fine, license cease etc.) and stringent checking of the drivers using breath analysers at the motor vehicle check posts on the three national highways (case study

area) & also at the bus stands and taxi stands within the study area can reduce the drunken driving behavior & subsequently will also reduce the number of road accidents due to drinking driving and hence ensure safety on the roads. Also, for awareness of the drivers & to bring a change in their attitude road side sign boards displaying slogan against drunken driving must be set up adjacent to the three national highways after certain distances.

6.4 Over-loading of vehicles: Over-loading of vehicles has been a predominant practice, mainly by the heavy commercial vehicles (trucks, buses, tippers etc.) running on the national highways, and has been one of the major causes of road accidents. Apart from resulting in road accidents, over-loaded vehicles also causes significant damage to the road surface which leads to various problems for the common people dependent mainly on road transportation. To control this corrupt practice, the heavy commercial vehicles should be strictly checked for its weight in the weigh machine located at the Motor Vehicle (MV) check-posts on the national highways and heavy penalty

must be levied in case of any non-compliance of the rules.

6.5 Unfit vehicles: It has been a common practice among drivers to drive their vehicles without having its periodic fitness check-up. Fitness check-up of vehicles at regular intervals is highly essential in order to ensure safety on the roads. As per Central Motor Vehicle Rules (CMVR), 1989 norms, it is mandatory for all commercial vehicles to have a fitness check-up every year & renew their fitness certificate. It is also mandatory for all commercial vehicles to be checked for pollution emission every six months & renew the pollution certificate. But non-compliance of these practices by the drivers & vehicle owners has resulted into a peril among the common people dependent mainly on road transportation. The situation becomes even more risky when the unfit vehicle is running on national highways at a high speed. To reduce the number of road mishaps due to unfit vehicles on the three study stretches, strict enforcement is required by the administration in order to ensure compliance of the CMVR, 1989 norms. Strict checking of

fitness & pollution certificates of all commercial vehicles must be enforced at the motor vehicle check posts and penalty must be levied in case of any non-compliance of the CMVR, 1989.

6.6 Limited Road Network: With the continuous increase in vehicle population, the need for alternate roads becomes essential. Due to limited road network (considering the case study area), vehicles have to pass through a common road resulting in conflict of interest between the regional traffic and urban traffic. Urban traffic covering long distances normally used to be at high speeds whereas the regional traffic is comparatively at lesser speeds and this difference in speeds generally results in an accident. Alternate roads for the urban traffic (by-pass roads) help to prevent such road mishaps.

6.7 Road Condition: The study stretches considered in this case study does not have a separator (road markings) for free movement of both way traffic, due to which severe cases of head-collision takes place between vehicles running at high speeds. Also, the national highways in this case study have plain terrains with a cross slope of the country of 0-10 percent &

have lesser widths. Heterogeneous traffic at higher speeds in such road conditions results in accidents quite often.

6.8 Other Preventive Measures: In addition to the aforesaid preventive measures, a few more related to traffic rules & regulations are necessary and essential. Usage of helmets while driving two-wheelers should be strictly complied. Pedestrians and bicyclists should be cautious & should look both left and right while crossing on a national highway. The intersection point between a national highway and other roads should have a display board of the speed limits and which should be strictly complied by drivers in order to avoid any unfortunate incidence.

7. Conclusion

The increasing threat on the safety of the road users due to the non-compliance of traffic rules & regulations has been a matter of serious concern. Road accidents are continuously increasing & have been a menace towards the development & progress of a region. Negligence in paying attention to this serious issue will turn the situation to be more

pathetic. Therefore, to maintain a control on the situation & to ensure safety on roads, strict enforcement of traffic rules & regulations are required and also the compliance of the same by the road users should also be properly administered. In this paper, the possible causes of road accidents on the three study stretches have been derived through brainstorming by using the fish bone diagram and also with reference to the secondary data on road accidents collected from S.P office, Silchar, District- Cachar. A survey was conducted through questionnaire method on those causes of road accidents and based on the outcome of the survey, those causes are ranked and it was found over-speeding, in-experienced drivers, drunken drivers, over-loaded vehicles, unfit vehicles, limited road network and road condition according to their priority.

From the analysis, it can be seen that the number of accidents on the case study area are continuously increasing and number is much more for NH 37 and NH 54. To reduce road accidents on those study stretches necessary preventive measures have been recommended.

Moreover, for renewal of driving licenses (transport category), refresher driving training of drivers from a recognized driving training institute must be made compulsory. Drivers need to realize their responsibilities while they are driving on roads and should strictly comply with the traffic rules & regulations in order to prevent road mishaps.

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