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PERFORMANCE OF TOURISM INDUSTRY - INDIA

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ABSTRACT

A large population, rising income levels and changing consumption patterns together have created a large addressable market, observes Tourism is one of the fastest growing sectors of the Indian economy, bringing foreign exchange earnings to the country. As a matter of fact, travel and tourism industry is the second highest foreign exchange earner for India, and the government has given travel and tourism organization export house status. The tourism industry also provides employment to millions of people both directly and indirectly through its linkage with other sectors of the economy. According to an estimate, total direct employment in the tourism sector alone is around 20 million. But changes in consumer needs and the developments in travel and tourism are inextricably intertwined. The more products consumers demand the more pressure there is on tourism professionals to make them available. The more products and destinations on offer, the more consumers expect, and the quicker they tire of the old and search for the new.

Keywords: Eco tourism, Heritage, Buoyance, Adventure, Commerce, Mantras.

INTRODUCTION

Being one of the largest industries in terms of gross revenue and foreign exchange earnings, the travel and tourism sector stimulates growth and expansion in other economic sectors like agriculture, horticulture, poultry, handicrafts, transportation, construction, etc, as well as gives momentum to growth of service exports. The new millennium has given humankind more leisure, more disposable income and more information than ever before. The tourism industry in the country is well equipped and also growing very fast to offer tourists all the services needed for making their visit memorable. Varied geographical, climatic, ethnic, cultural, religious and social conditions make the Indian subcontinent one of the top tourist destinations in the world. India is probably one of the few countries that offer various categories of tourism such as history tourism, cultural tourism, adventure tourism, beach tourism, medical tourism etc. From maintenance of ancient heritage to management of tours the travels, hotels and hospitality, the scope of tourism sector is broad.

In the Union Budget 2003-04, Government of India has extended infrastructure status to tourism, thus opening the doors to long term funds through private and foreign investment to develop tourism infrastructure. The tourism industry in India is marked by considerable government presence; each state has a tourism corporation, which runs a chain of hotels, rest houses and package tours, while the Central Government runs Indian Tourism Development Corporation. The Government of India announced a new Tourism policy in the year 2002 to give boost to the tourism sector. The policy is built around the 7-s Mantra of Swagat (Welcome), Socchana (Information), Suvidha (Facility), Suraksha (Security), Sahyog (Cooperation), Sanrachana (Infrastructure) and Safaai (Cleanliness).

India's share in world tourism, hovering around 0.38 per cent for nearly a decade (1995 to 2005), has reached 0.46 percent in 2005 and 0.49 percent in 2006. The number of foreign tourist arrivals increased from 3.1 million in 2006 and 3.9 million in 2007 to 4.5 million in 2008 and foreign exchange earnings increased from Rs 16,429 crores in 2007 to 21,828 crores in 2008. Taking this optimistic growth into consideration, the government is expecting tourist arrivals to touch 9.9 million by 2011 and 15.9 by 2014. The World Travel Tourism Council (WTTC) has named India along with China as one of the fastest growing tourism industry for the next 15 years.

Present Situation and Features of Tourism in India

Today tourism is the largest service industry in India, with a contribution of 6.23% to the national GDP and providing 8.78% of the total employment. India witnesses more than 5 million annual foreign tourist arrivals and 562 million domestic tourism visits. The tourism industry in India generated about US\$100 billion in 2008 and that is expected to increase to US\$275.5 billion by 2018 at a 9.4% annual growth rate. The Ministry of Tourism is the nodal agency for the development and promotion of tourism in India and maintains the "Incredible India" campaign.

According to World Travel and Tourism Council, India will be a tourism hotspot from 2009-2018, having the highest 10-year growth potential. As per the Travel and Tourism Competitiveness Report 2009 by the World Economic Forum, India is ranked 11th in the Asia Pacific region and 62nd overall, moving up three places on the list of the world's attractive destinations. It is ranked the 14th best tourist destination for its natural resources

and 24th for its cultural resources, with many World Heritage Sites, both natural and cultural, rich fauna, and strong creative industries in the country. India also bagged 37th rank for its air transport network. The India travel and tourism industry ranked 5th in the long-term (10-year) growth and is expected to be the second largest employer in the world by 2019. The 2010 Commonwealth Games in Delhi are expected to significantly boost tourism in India further. [www.ibef.org/industry/tourismhospitality.aspx]

Moreover, India has been ranked the "best country brand for value-for-money" in the Country Brand Index (CBI) survey conducted by Future Brand, a leading global brand consultancy. India also claimed the second place in CBI's "best country brand for history", as well as appears among the top 5 in the best country brand for authenticity and art & culture, and the fourth best new country for business. India made it to the list of "rising stars" or the countries that are likely to become major tourist destinations in the next five years, led by the United Arab Emirates, China, and Vietnam. [www.ibef.org/industry/tourismhospitality.aspx]

Tourist Attractions in India: India is a country known for its lavish treatment to all visitors, no matter where they come from. Its visitor-friendly traditions, varied life styles and cultural heritage and colourful fairs and festivals held abiding attractions for the tourists. The other attractions include beautiful beaches, forests and wild life and landscapes for eco-tourism; snow, river and mountain peaks for adventure tourism; technological parks and science museums for science tourism; centres of pilgrimage for spiritual tourism; heritage, trains and hotels for heritage tourism. Yoga, ayurveda and natural health resorts and hill stations also attract tourists.

The Indian handicrafts particularly, jewellery, carpets, leather goods, ivory and brass work are the main shopping items of foreign tourists. It is estimated through survey that nearly forty per cent of the tourist expenditure on shopping is spent on such items.

Despite the economic slowdown, medical tourism in India is the fastest growing segment of tourism industry, according to the market research report "Booming Medical Tourism in India". The report adds that India offers a great potential in the medical tourism industry. Factors such as low cost, scale and range of treatments provided in the country add to its attractiveness as a medical tourism destination.

Initiatives to Boost Tourism: Some of the recent initiatives taken by the Government to boost tourism include grant of export house status to the tourism sector and incentives for promoting private investment in the form of Income Tax exemptions, interest subsidy and reduced import duty. The hotel and tourism-related industry has been declared a high priority industry for foreign investment which entails automatic approval of direct investment up to 51 per cent of foreign equity and allowing 100 per cent non-resident Indian investment and simplifying rules regarding the grant of approval to travel agents, tour operators and tourist transport operators.

The first-ever Indian Tourism Day was celebrated on January 25, 1998. The Year 1999 was celebrated as Explore India Millennium Year by presenting a spectacular tableau on the cultural heritage of India at the Republic Day Parade and organising India Tourism Expo in New Delhi and Khajuraho. Moreover, the campaign 'Visit India Year 2009' was launched at the International Tourism Exchange in Berlin, aimed to project India as an attractive destination for holidaymakers. The government joined hands with leading airlines, hoteliers, holiday resorts and tour operators, and offered them a wide range of incentives and bonuses during the period between April and December, 2009.

Market Size

India is the most digitally-advanced traveller nation in terms of digital tools being used for planning, booking and experiencing a journey, India's rising middle class and increasing disposable incomes has continued to support the growth of domestic and outbound tourism. During 2018, foreign tourist arrivals (FTAs) in India stood at 10.56 million, achieving a growth rate of 5.20 per cent year-on-year. FTAs in January 2019 stood at 1.10 million, up 5.30 per cent compared to 1.05 million year-on-year. During May 2019, arrivals through e-tourist visa increased by 21.70 per cent year-on-year to 1.23 million. The travel & tourism sector in India accounted for 8 per cent of the total employment opportunities generated in the country in 2017, providing employment to around 41.6 million people during the same year. The number is expected to rise by 2 per cent annum to 52.3 million jobs by 2028. International hotel chains are increasing their presence in the country, as it will account for around 47 per cent share in the Tourism & Hospitality sector of India by 2020 & 50 per cent by 2022.

Contribution Of Tourism In India

Tourism industry in India has several positive impacts on the economy and society. These impacts are highlighted below.

1. Generating Income and Employment: Tourism in India has emerged as an instrument of income and employment generation, poverty alleviation and sustainable human development. It contributes 6.23% to the national GDP and 8.78% of the total employment in India. Almost 20 million people are now working in the India's tourism industry.

3. Source of Foreign Exchange Earnings: Tourism is an important source of foreign exchange earnings in India. This has favourable impact on the balance of payment of the country. The tourism industry in India generated about US\$100 billion in 2008 and that is expected to increase to US\$275.5 billion by 2018 at a 9.4% annual growth rate.

4. Preservation of National Heritage and Environment: Tourism helps preserve several places which are of historical importance by declaring them as heritage sites. For instance, the Taj Mahal, the Qutab Minar, Ajanta and Ellora temples, etc, would have been decayed and destroyed had it not been for the efforts taken by Tourism Department to preserve them. Likewise, tourism also helps in conserving the natural habitats of many endangered species.

5. Developing Infrastructure: Tourism tends to encourage the development of multiple-use infrastructure that benefits the host community, including various means of transports, health care facilities, and sports centers, in addition to the hotels and high-end restaurants that cater to foreign visitors. The development of infrastructure has in turn induced the development of other directly productive activities.

6. Promoting Peace and Stability: Honey and Gilpin (2009) suggests that the tourism industry can also help promote peace and stability in developing country like India by providing jobs, generating income, diversifying the economy, protecting the environment, and promoting cross-cultural awareness. However, key challenges like adoption of regulatory frameworks, mechanisms to reduce crime and corruption, etc, must be addressed if peace-enhancing benefits from this industry are to be realized.

Heritage Tourism

Heritage tourism is a very lucrative segment in India. It is widely beloved it would emerge as the most important segment within tourism in term of revenue generation by 2010. India has a rich cultural history and reflection of its glorious past is still visible in its numerous forts, monuments, palaces, places of worship etc. heritage tourism itself can be further classified as colonial heritage, urban renewal, religious tourism, industrial heritage and ethnicity. The Indian government must show keen interest in preserving the heritage sites from a tourism perspective.

ECO Tourism

It is relatively new segment in India. It involves visiting natural areas without disturbing the fragile ecosystem. Eco tourism generates wealth for the local people, who in turn take measures to conserve and protect the environment and natural resources. India with its natural diversity is one of the pristine places in the world for eco-tourism. The Himalayan region, Kerala, Northeast, Andaman and Nicobar Islands and Lakshadweep islands the Western and Eastern Ghats are some of the hot sports for eco-tourism in India. India has some of the bet wildlife reserves in the world, rich in flora and fauna.

Adventure Tourism

India's varied geographical and climatic conditions offer excellent opportunity for adventure sports. In recent times the popularity of adventure tourism has increased. Adventure sports like river rafting, rock climbing, mountaineering trekking, skiing, snow climbing, scuba diving and angling can be undertaken in to country and the country offers multiple locations to choose from. The trans Himalayan region, the Garhwal and Kumaon mountains, the Western Ghats, deserts of Rajasthan, Andaman and Lakshadweep islands are some of the most popular destination for adventure tourism.

MAJOR FACTORS FOR BUOYANCY

This buoyancy in the tourism industry can be attributed to several factors. First, the tremendous growth of the economy has resulted in more disposable income in the hands of the middle-class, thereby prompting increasingly large number of people to spend money on vacations abroad or at home. This combined with the increasing awareness about "work life balance" and an increasing sense of adventure is driving the double-digit growth rates for domestic and outbound travel from India.

Second, India is a booming IT hub and more and more people are coming to India on business trips. Third, aggressive advertising campaign "incredible India" by tourism Ministry has played a major role in changing the image of India from that of the land of snake charmers to a hot and happening place and has sparked renewed interest among foreign travelers.

The increased disposable incomes and willingness to splurge on seeing the world has led to people taking more holidays albeit of shorter durations. This has led to the evolution of a new 'Weekend Getaway' concept. More and more travelers are opting for the lesser travelled road within the country and plan their travel to these destinations during the weekends/short breaks. A large population, rising income levels and changing consumption patterns together have created a large addressable market. In 2002, the government announced a new tourism policy to give boost to the sector.

The policy proposes the inclusion of tourism in the concurrent list of the Constitution to enable the Central and State governments to participate in the development of the sector. The policy also advocated no approvals required for foreign equity of up to 51 per cent in tourism projects and NRI investments up to 100 per cent were allowed. In addition, 50 per cent of the profits derived by hotels, travel agents and tour operators in foreign exchange are exempt from income-tax. The remaining profits are also exempt if reinvested in a tourism related project.

Table-1.1: Net commerce market size from 2007 to 2011.

Year	2013+	2014+	2015+	2016+	2017+
Total market size	8,146	14,030	19,688	31,598	46,520
Online travel industry	6,250 (77%)	10,500 (75%)	14,953 (76%)	25,258 (80%)	37,890 (81%)
Online non-travel industry	1,896 (23%)	3,530 (25%)	4,735 (24%)	6,340 (20%)	8,630 (19%)
e-Tailing	978	1,120	1,550	2,050	2,700
Digital downloads for paid content subscription	238	290	435	680	1,100
Financial services*		1,200	1,540	2,000	2,680
Other online services	680	920	1,210	1,610	2,150

Most Popular Online Activities in India:

The importance of technology innovation in tourism, especially of the world wide web, has increased tremendously over the past years and this trend will certainly continue. Early forms of technology in the travel and tourism industry were systems which linked tour operators to travel agencies via terminals and allowed travel agents to make bookings through the system. The travel industry traditionally has been associated with a high degree of opaqueness. However, the scenario has undergone a seachange with Internet penetration. Now, the entire information can be accessed by customers within 30 seconds and they can get a complete picture.

Various high-tech information and communication technologies are in use in the tourism sector around the world. They are used for tourism product development, marketing, distribution and training of tourism sector-personnel. These technologies are indispensable in order to find out and satisfy the ever-changing demand for tourism products. Gone are the days when consumers went about calling multiple travel agents for information and consumer awareness and demand was driven primarily through print advertisement. Marketing has had a huge shift since the Internet has become a household research tool. The Internet allows the average consumer to access a library of travel information 24/7 from the comfort of his/her home. Tourism and travel operators have embraced the new online marketing methods to move forward and grow. The internet allows any business, large or small, an equal playing field for the consumer. Many small business with a great online presence are making waves across the industry.

Internet Reach

Eighteen per cent of Indians book their holidays and trips on the Internet. This figure is estimated between 5 per cent and 10 per cent for British consumers. In America, it is about 30 per cent. The growth in Internet booking for flights can be attributed to the Indian Railway which through its IRCTC website, has educated passengers on how to book quickly and easily via the Internet. Given the increasing awareness about the convenience of booking online and the lower cost of operations, travel agents and tour operators are also using the internet to present their products and services online and using this as a medium to get closer to their customers. Today, the internet reach has grown beyond being an enabling communication medium.

E-commerce has been a new buzz word over the last decade but has become increasingly mainstream over the last five years and is likely to grow exponentially year-on-year in an under-penetrated country like India.

In fact, e-commerce is expected to fast catch-up with the growth in overall trade market. This can be gauged from the fact that e-commerce penetration is still quite lower even among active Internet users who look for

information regarding products. So, gradually, the conversion ratio of these users – which now stands at around 40 per cent- from being mere on-lookers to having brought any product over the internet, could have brought any product over the internet, could only rise from here.

Changes in consumer needs and the developments in travel and tourism are inextricably intertwined. The more products consumers demand the more pressure there is on tourism professionals to make them available. The more products and destinations on offer, the more consumers expect, and the quicker they tire of the old and search for the new.

Table-1.2: Growth Rate of Travel & Tourism Market

Rank	Country	2010(\$bn)	2020(\$bn)	CAGR(%)
1	China	113	501	16.1
2	India	42	111	10.2
3	U.S.	511	917	6.0
4	U.K.	89	148	5.2
5	Australia	50	80	4.8
6	Italy	90	122	3.1
7	Spain	92	124	3.0
8	France	108	143	2.8
9	Germany	79	104	2.8
10	Japan	173	216	2.2

Source: The Hindu survey of Indian industry 2011.

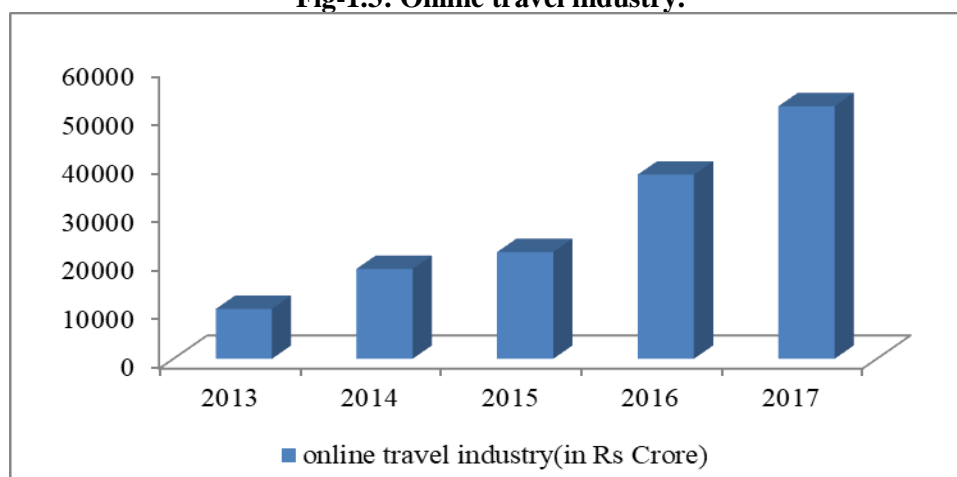
Technological Advances

Technological advances in transport and communication have made the world more accessible to more people, and aroused the desire to experience more of it. Higher incomes in the western world and increased leisure time contribute to demand. As countries develop, the desire for travel and tourism grows among the people, China and Eastern Europe are examples of the development of the freedom and means to travel not available even ten years ago.

Given the above mentioned trends, it is not surprising that the IAMAI report on online commerce indicates that almost 80 per cent market share of current online commerce industry is dominated by travel business and the remaining 20 per cent is accounted for by non-travel businesses such as eTailing (electronic retailing), digital download, paid content subscription, financial services and online classfields. Travel still tops the charts when it comes to online services in India. The data illustrates that over 84 per cent of Indians who have access to Internet, log in to search and plan their travel.

The travel boom, emergence of low-cost carriers, proliferation of Internet and the growing acceptance of e-commerce are the key factors that have contributed to the emergence of this sector. Indian travel industry will grow 13 per cent to \$23 billion next year and the \$4 billion online business is expected to grow fast, at 28 per cent. Mobile penetration has increased considerably in the past few years and people are accessing the Internet through their phones. Exploiting the mobile platform hence becomes essential and going forward, we can expect an influx of applications for mobiles.

Fig-1.3: Online travel industry.



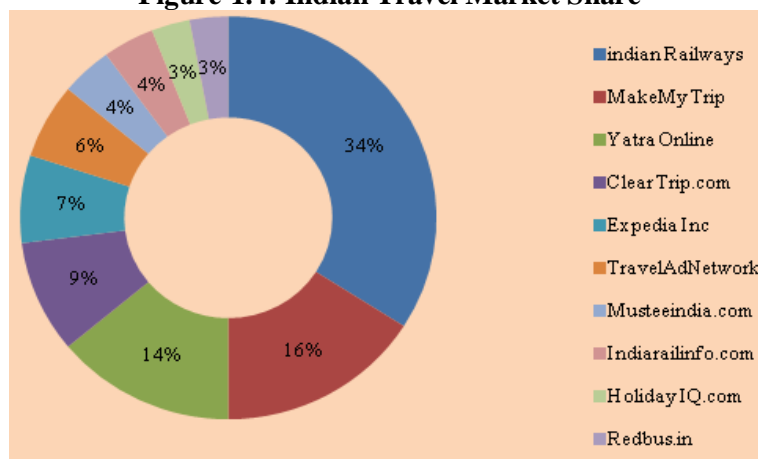
By 2015, it's estimated that shoppers from around the world will spend about \$119 billion on goods and services bought via mobile phones, according to a study by ABI research. Reaching out to consumers via social and digital marketing means will rise.

Innovation and differentiation are the key drivers of growth today. While OTAs (online travel agents) have gone beyond online travel to provide end-to-end travel and holiday planning solutions, innovation is the need of the hour. Cross selling of products is on the rise. Again OTAs have to engage with customers and listen to what they have to say. There is a need to make inroads into the customer's life, without being intrusive and understand their needs better. All this and more has contributed to India becoming the world's second fastest growing travel market globally today, with an expected compounded annual growth rate (CAGR) of 10.2 per cent over the next 10 years.

Online Travel

The online travel industry has grown smartly from Rs.12,250 crore in 2013 to Rs.56,258 crore until December 2017 on the back of conveniences of paying online. At present, domestic air travel segment constitutes 63 per cent of online travel industry followed by 28 per cent share from online Railway tickets. In April 2011, 18.5 million online users visited a travel site from a home or work location, an increase of 32 percent from the previous year. Despite being only five years old from an operational perspective, the Indian online travel market accounted for over one-fifth of industry bookings in 2015.

Figure-1.4: Indian Travel Market Share



Source: Service marketing concepts

Success of online booking can be traced back to transparency in fares and efficient procedures. By 2012, about one-third of the market transactions are expected to be transacted online due to a well-established air segment which will continue to grow at a healthy double-digit growth rate and continue nearly two-thirds of the OTA market in 2012. The growth has also been spurred by demand for domestic holiday packages where, domestic travellers accounted for 63-85 per cent of guests at four-star hotels.

India has the opportunity to create next generation models that will boost the online travel industry. We need to come up with hybrid business models to boost the online travel industry. More value creation was needed for a sustained growth of the online travel industry along with a framework for the digital commerce industry to exploit its potential. While OTAs continue to communicate through traditional platforms, it is becoming a necessity to speak to customers in a lingo they converse in. The online travel industry is certainly marked for growth in the coming years. The best is yet to come for the sector with broadband penetration just starting to take off. India is all set to become among the top three online travel markets in the world over the next decade.

Strategies for Tourism Promotion

We don't need to sit back and substantiate the presence of immense number of attractions and sights that adorn India. That would mean only to argue on what has been proved well! However, since introspection and criticism are sometimes the best ways of becoming better, we do need to sit and think how we can make our "Incredible India" more of an eye candy in the eyes of International tourism. With a number of visa and other policies that have boosted the tourism of India, this is the best time to decide how our nation can become better and more attractive for the travelers who come here:

1. To understand how tourism can change the face of our nation, This should have been the first point! The day we understand how tourism can change the face of our nation, half of the battle will be won. It can definitely

bring more value, income and an image to our nation and bring us in the top contenders for the list of travel destinations.

2. Needless to say that we absolutely lack in these, Basic amenities such as restrooms near attractions, changing rooms at the beaches and garbage bins are what we lack presently. Further, even if some of our attractions might have those, they are left in horrible conditions enough to leave visitors puking. We need to learn a lot from the west in this case! Disabled access is something that we still need to explore and fix down. When it comes to travelling within the cities of India, public transport also need to be highlighted and informed so well that the travelers should not have any problem in exploring! What about Child friendly destinations? We definitely need to come up with more.

3. Promoting Festivals to enhance Indian tradition, We recognize Christmas with west, Tomatina festival with Spain and Rio carnival with Brazil! But, a country like India has such a plethora of festivals that merely one would not be able to sum up our diversity of culture and tradition. These festivals do add a dash of color and light when it comes to defining tourism in India. So let us just make them more popular and tourist friendly to offer a quintessential Indian experience to the travelers.

4. India has yet to cover miles when it comes to offering secure adventure facilities to travelers. With more and more of people coalescing adventure and tourism, this is an essential infrastructure that we need to upgrade from its present sorry state.

5. Any other nation in this world can hardly match up the number of historical monuments that dot the landscape of India. But they can't match up the kind of creativity and inscriptions that goes into ruining those monuments! We seriously need to put punitive measures against anybody who does this. Further, our monuments also demand a lot of attention and resurrection to bring them out of obscurity.

6. Friendly Reception, A friendly smile on the face of host at times gives the best whiff to tourism. And this is one thing that we can implement at our own level to ensure a hospitable image of India before others. Security concerns also go alongside. A country that serves well, looks well.

Government Policy towards Tourism Industry.

India, a country endowed with ancient cultural heritage and natural beauty, has always been an attractive tourist destination and has great potential to become one of the leading tourism destinations in the world. In recognition of this potential, the government has been conscious of the policies framed to regulate this sector which are conducive for its growth and expansion. Among such efforts are the bilateral agreements with other countries to facilitate travel and tourism between India and other nations. In this arena, India and the United States of America have recognized each other's inter dependence and have made constant efforts to explore the potential for growth in the sector between the two nations. One of the good examples of such recognition is the year 2017, which was celebrated as the "India-US travel and tourism partnership year" in order to promote tourism between the two countries and deepen people to people ties further. The Indian government recently also conducted 'Incredible India' roadshows in various cities across the US to further promote India as a tourism destination amongst Americans. With an aim to rapidly increase the foreign tourist arrivals in India, the Ministry of Tourism has launched the Incredible India 2.0 campaign, to promote India as an ideal destination for spiritual, wellness and medical tourism. This is in furtherance to the Incredible India campaign, which the government launched in the year 2002 and through which it has been promoting tourism in India ever since. The Incredible India 2.0 campaign focuses on niche tourism products like heritage tourism, adventure tourism, cruise tourism, rural tourism, wellness & medical tourism etc.

The Swachh Bharat (Clean India) mission, which was launched by the current ruling government in the year 2014, has also led to increase in foreign tourist arrivals in India. Amongst the various achievements attributed by the government to the Swachh Bharat mission, the most significant one is perhaps the claim that rural India has now achieved 85% sanitation coverage which is a huge leap from the years before the mission was launched. This programme is recognised by the government as the largest behaviour change programme in the world. Further, in 2016, all 3,686 monuments of national importance and under the protection of the Archaeological Survey of India were declared polythene free zones to reduce waste disposal at such sites.

The safety of foreign tourists in India has been a concern owing to certain serious incidents reported in the past years. We have witnessed that the current government has taken conscious measures and made endeavours to assure security in cities of interest to tourists and travellers in the last few years.

It will take a while for India to reap the benefits of the policies and efforts being made by the government in relation to the sector, but it can be seen that India is on its way to becoming a strong player in the sector. Despite the positive trend at display, the key for growth of the sector would be sound and consistent efforts in implementation of the policies, schemes and programmes that have been designed and launched by the government.

CONCLUSION

Tourism in India has seen exponential growth in the recent years. India is one of the most preferred destinations for both overseas and domestic travelers. Tourism enables the international traveler to understand and experience India's cultural diversity first hand. According to official estimates the Indian tourism industry has outperformed the global tourism industry in terms of growth in the volume of foreign tourists as well as in terms of revenue. The main reason for the growth in tourism in India is the tremendous progress made by the Indian economy. Though it must be said that infrastructure is still a constraint to sustain the current growth the government should invest in infrastructure like transport, accommodation, better roads, health and hygiene etc. To propel growth the industry has invested in new technology like CRM tools and state of the art security systems. Apart from this, government has taken several other measures for promoting tourism. A multi-pronged approach has been adopted, which includes new mechanism for speedy implementation of tourism projects, development of integrated tourism circuits and rural destinations, special capacity building in the unorganized hospitality sector and new marketing strategy. But one factor that single-handedly led to an exponential growth is undoubtedly technology.

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SOCIAL NETWORKING SITES ADDICTION: A STUDY ON COLLEGE STUDENTS IN CHENNAI

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ABSTRACT

Social networking sites have emerged as an important leisure activity in the lives of college students. Since social networking sites contain attractive features, that has become an important pass time for college students. College students prefer to spend a lot of time on social networking sites. Social networking sites are used to establish an ideal persona, updating others activities of self, sharing photos, getting updates on activities by friends, showcasing a large social network, sending messages privately, and posting public testimonials. These activities can easily make youngsters spend hours together on social networking sites. This could lead to addiction to social networking sites. Addiction to social networking sites is harmful. This study tries to find out if college students are addicted to social networking sites. A survey method was adopted for the study. Results indicate that college students are addicted to social networking sites.

INTRODUCTION

College students use social networking sites for various reasons. Young people want to be in the company of friends. They desire to communicate, to create an identity for themselves, to increase their visibility and to maintain personal relationships. Therefore youngsters use social networking sites to a large extent. This increased usage sometimes becomes uncontrolled and leads to addiction.

REVIEW OF LITERATURE

Over the last few years, using social media has become an increasingly popular leisure activity in many countries across the world (Kuss & Griffiths, 2011). Among the services that the Internet provides, the most important service that has attracted youngsters the most is the social networking sites (SNSs). Kaplan & Haenlein (2010) explained that social media is a group of internet based applications that build on the ideological and technological foundations of Web 2.0, and allow the creation and exchange of user-generated content. Due to social networking sites people can know people, share their profiles, and track old friends. SNSs connect people irrespective of the distance. SNS's have negative side too. They make youngsters addicted to the activities on social networking sites. Addiction has severe harmful consequences that can affect the functioning of their everyday lives.

A study conducted by Lenhart & Madden (2007) among teens reported that about 55% of teens use social networks and 48% of them log on to social networking sites daily, 22% logged on to social networking sites several times per day, 26% once a day, 17% three to five days per week, 15% one or two days per week, and only 20% every few weeks or less. Another study found that college students reported using Facebook on an average of 10 to 30 min daily (Ellison, Steinfield, & Lampe, 2007).

Social networking sites are based on the premise of relationship creation and maintenance, either with existing members of a social circle or connecting people with similar or shared interests (Boyd & Ellison, 2008). Members use these sites for connecting with friends.

Social networking sites gratify various needs of college students. Membership growth in these sites stands as an evidence for the popularity of these networks. Recent studies have shown that people subscribed to more than one SNSs platform (Olufadi, 2016). The majority of college students use at least one social media platform a day, with Facebook remaining the most popular networking platform.

Uncontrolled usage of social networking sites by college students has become an apprehension. Researchers define overuse of social networking sites as an important concern (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). It has been identified that the substance use disorders, such as tolerance, withdrawal and mood modification, and impairment in functional areas such as social or academic problems has been associated from uncontrolled use of social networking sites (Marino, Gini, Vieno, & Spada, 2018).

Addiction to social networking sites is defined as excessive involvement in SNS activities and is a frequent cause of problems in everyday social functioning (Elphinston & Noller, 2011). It is also characterized by some of the features commonly observed in other addiction cases, such as tolerance, withdrawal, relapse etc (Andreassen, Torsheim, Brunborg, & Pallesen, 2012).

Studies suggest that men and women differ in their use of online environment. Extreme use of chatting and social media has been associated with young women (Kittinger, Correia, & Irons, 2012). Another study

indicates that the well-known social networking sites such as Facebook in particular has an addictive possibility, and are used by both genders and females specifically are at danger of addiction (Kuss, Griffiths, & Binder, 2013). Social networking sites addiction is identified with symptoms that include neglecting personal/work life, preoccupation, mood alteration, withdraw, inability to cut down and relapse (Tang & Koh, 2017).

Extended use of social networking sites can cause concern for individuals' physical health (Király, Griffiths, & Demetrovics, 2015). In certain cases addiction to social networking sites has said to have caused mental health problems in certain users (Kuss and Griffiths, 2011).

MEDIA DEPENDENCY THEORY

This study works from the premise of media system dependency theory (Ball Rokeach & Defleur, 1976), that assumes that the more a person depends on having his or her needs gratified by media use, the more important will be the role that media play in the person's life. This theory proposes an integral relationship among audience, media and the larger social system.

The inability to escape from social media is what makes it a psychological issue. Excessive social media use can contribute to psychological issues, whether in the short-term or later on in life. Social networking sites offer a wide range of features and opportunities for its members. Being drawn to these possibilities, college students who use social networking sites could become addicts.

METHOD

A survey method was adopted for this study. A questionnaire was distributed to the respondents who agreed to participate in the study. Data collected from 252 college students (122 male, 130 female) from Chennai was analysed for this present study. Since this study was on social networking sites, only the college students who had membership in social networking sites were chosen for the study. The data of the 252 respondents was coded and analysed to arrive at the results.

ANALYSIS

Table-1: Social Networking Sites Addiction (Male)

S. No.	Social Networking Sites Addiction	Percentage (Male)	
		Agree	Disagree
1	I ignore important things because of my interest in Social Networking Sites	79%	21%
2	My everyday life has been affected because of my use of Social Networking Sites.	85%	15%
3	Using Social Networking Sites disturbs my other activities	77%	23%
4	If I am not using Social Networking Sites, I often feel irritated	75%	25%
5	Though I try, I am unable to reduce the time I spend on Social Networking Sites	81%	19%
6	I am late for appointments because of my use of Social Networking Sites	74%	26%
7	I have arguments with others because of the time I spend on Social Networking Sites	91%	9%
8	Social Networking Sites occupies most of my time	72%	28%
9	I feel lost when I cannot access my social networking site	76%	24%

The above table shows that among male 79% agree and 21% disagree that 'I ignore important things because of my interest in social networking sites', 85% agree and 15% disagree that 'My everyday life has been affected because of my use of social networking sites', 77% agree and 23% disagree that 'Using social networking sites disturbs my other activities', 75% agree and 25% disagree that 'If I am not using social networking sites, I often feel irritated' 81% agree and 19% disagree that 'Though I try, I am unable to reduce the time I spend on social networking sites', 74% agree and 26% disagree that 'I am late for appointments because of my use of social networking sites', 91% agree and 9% disagree that 'I have arguments with others because of the time I spend on social networking sites', 72% agree and 28% disagree that 'Social networking sites occupies most of my time', 76% agree and 24% disagree that 'I feel lost when I cannot access my social networking site'.

Table-2: Social Networking Sites Addiction (Female)

S. No.	Social Networking Sites Addiction	Percentage (Female)	
		Agree	Disagree
1	I ignore important things because of my interest in social networking	81%	19%

	sites		
2	My everyday life has been affected because of my use of social networking sites	88%	12%
3	Using social networking sites disturbs my other activities	80%	20%
4	If I am not using social networking sites , I often feel irritated	78%	22%
5	Though I try, I am unable to reduce the time I spend on social networking sites	85%	15%
6	I am late for appointments because of my use of social networking sites	76%	24%
7	I have arguments with others because of the time I spend on social networking sites	92%	8%
8	Social networking sites occupies most of my time	75%	25%
9	I feel lost when I cannot access my social networking site	79%	21%

The above table shows that among female 81% agree and 19% disagree that 'I ignore important things because of my interest in social networking sites', 88% agree and 12% disagree that 'My everyday life has been affected because of my use of social networking sites', 80% agree and 20% disagree that 'Using social networking sites disturbs my other activities', 78% agree and 22% disagree that 'If I am not using social networking sites, I often feel irritated' 85% agree and 15% disagree that 'Though I try, I am unable to reduce the time I spend on social networking sites', 76% agree and 24% disagree that 'I am late for appointments because of my use of social networking sites', 92% agree and 8% disagree that 'I have arguments with others because of the time I spend on social networking sites', 75% agree and 25% disagree that 'Social networking sites occupies most of my time', 79% agree and 21% disagree that 'I feel lost when I cannot access my social networking sites'.

DISCUSSION

The study shows that college students both male and female are addicted to social networking sites. They exhibit a strong tendency of addiction to these sites. Most of them admit that they ignore important things because of social networking sites and that their everyday life is affected because of their interest in social networking sites. They confess that social networking sites disturb other activities and they are late for appointments due to their usage of social networking sites. They agree that social networking sites occupy most of their time and they are unable to reduce the time they spend on social networking sites. They have arguments with others because of the time they spend on social networking sites. But at the same time they feel irritated if they are not using the social networking sites and feel completely lost when they do not access it.

CONCLUSION

College student's addiction to social networking sites can cause problem in their daily functioning. It can cause disruptions within a user's daily life and can cause multi-faceted problems. There could be delay in completion of important tasks, problems in relationships due to the excessive usage. Many members on social networking sites clearly express that they are drawn to these sites and are unable to control the time they spend on these sites. Psychologists, counselors, and educators have been concerned about this issue. College students should be aware of these concerns and avoid becoming addicted to it.

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POLITICAL MARKETING – THE INDIAN PERSPECTIVE

Jaikishan Balkrishna Tarur

ABSTRACT

Along with the development of brands in the consumer realm and huge popularity of those brands among the people, the practise of applying the rules of marketing into the political communications and campaigns has now become a reality. The procedures involved include the analysis, development, execution and management of strategic campaigns by candidates, political parties, governments, lobbyists and interest groups that seek to drive public opinion, advance their own ideologies, win elections. Professionalization of the campaign through the use of advertising experts and campaign managers makes political communication of the performative kind, high on theatrics and rhetoric. The advent of social media has brought in the strengthening of direct channels of communication between the party and the voters and engaging enthusiastic young voters is on the rise. Agenda setting has slipped away from the authority of the traditional media into the authority of the masses on account of the social media. These principles when factored in strategically makes political marketing and branding possible and forceful. Instances of Barack Obama's 2008 US election, 2012 Gujarat Assembly elections, 2014 and now 2019 Indian parliamentary elections stands testimony to this phenomenon of political marketing and branding.

Keywords: Marketing, branding, political marketing, political branding, political communication, political campaigns, social media, social media political campaigns, advertising, voters, traditional media, 2008 US Presidential election, Barack Obama, 2014 Lok Sabha elections, Narendra Modi, Amit Shah, Prashant Kishore, public opinion, lobbyists, government, strategic campaigns.

INTRODUCTION

Brand is the impression that people have in their minds about a person, a product, a company or political entity. Politicians and political communication professionals have come to frequently rely on insights and personnel from the discipline of brand management to improve their external presentation. Political branding seems to be in vogue and is pursued as a deliberate strategy by political actors. As per Philip Kotler Marketing Guru ^[1], “political campaigns have increasingly been compared to marketing campaigns in which the candidate puts himself on the voters' market and uses modern marketing techniques, particularly marketing research and commercial advertising, to maximize voter "purchase". It is argued here that the very essence of a candidate's interface with the voters is a marketing one and always has been. Alleged differences between commercial marketing and political marketing are shown to be overstated”

^[2] Dewey, Freud Lewin, Skinner and others have said that marketers assume limited rationality in individuals. They are aware that consumer's choice decisions are complicated phenomena-‘the complex man theory’ – and are based upon emotion at least as much as on reasons. A major part of our brain is busy with automatic processes, not conscious thinking. A lot of emotions and less cognitive activities happen. The single biggest motivator in decision making is not rationality, but it is emotional response. Humans go by what makes them feel comfortable, when they feel they can trust you, when the process feels natural and reassuring. Our brains usually run on autopilot, despite making us believe we know what we are doing. People buy on emotion and justify with fact. ^[3] To assume rationality acknowledges the presence of needs but not wants and has argued that decision making, including ideas adoption, rests more importantly upon emotional phenomena, values attitudes, groups influence, and personality than on reasons.

Defining Political Marketing

Political marketing has been defined variously, Newman (1999) ^[4] says that it is the application of marketing principals and procedures in political campaigns by various individuals and organizations. The procedures involved include the analysis, development, execution and management of strategic campaigns by candidates, political parties, governments, lobbyists and interest groups that seek to drive public opinion, advance their own ideologies, win elections and pass legislation and referenda in response to needs and wants of selected people and groups in a society. Replacing the old term by the phrase ‘political marketing’ – has become a useful hold all bag of disparate entities that an earlier phase in history would have been called populism or ‘propaganda’ if used in a strictly business context the phrase would be called corporate communication or public relation.

^[5] Going a step ahead Lilleker (2002) offers a reason for not publicly using the word political marketing. He notes that commercial marketing was the background of many who advise the party on campaigning, but it appears that such tactics (targeting of voters) lead to severe disaffection within the context of political

campaigns. He further reports that MPs avoid the phrase because of its manipulative connotations and because of suspicions of association with a view of democracy. ^[6]Hesenneberg (2003) who in his defence of political marketing, also notes the active stance of the politician, he found that the dialectical interplay of market-driven and market driving behaviour characterizes successful (political) marketing management in terms of building long term relationship, like test marketing political marketing strategies may have to be modified but has to be sustained over a long period of time.

Marketing of consumer products and selling political communication as a product

One terminological inconsistency should be noted though. One can equate a company's consumer products with a political party's political communications. Such a parallel cannot be drawn, as a party's "Product" consists not of its political communications but of: a) its ideological platform and its set of policy proposals, b) the party leader, the candidates and party officials and c) party members in general. Political marketing has become an integral and vital component of political communication. Political communication encompasses the entire marketing process, from preliminary market study to testing and targeting. It should be noted that the main areas of application of political marketing are image-making campaigns and election campaigns. political marketing is concerned with communicating with party members, media and prospective sources of funding as well as the electorate and political marketing can be defined as "the party or candidate's use of opinion research and environmental analysis to produce and promote a competitive offering which will help realise organisational aims and satisfy groups of electors in exchange for their votes". The use of marketing offers political parties the ability to address diverse voter concerns and needs through marketing analyses, planning, implementation and control of political and electoral campaigns".

Central purpose of political marketing:

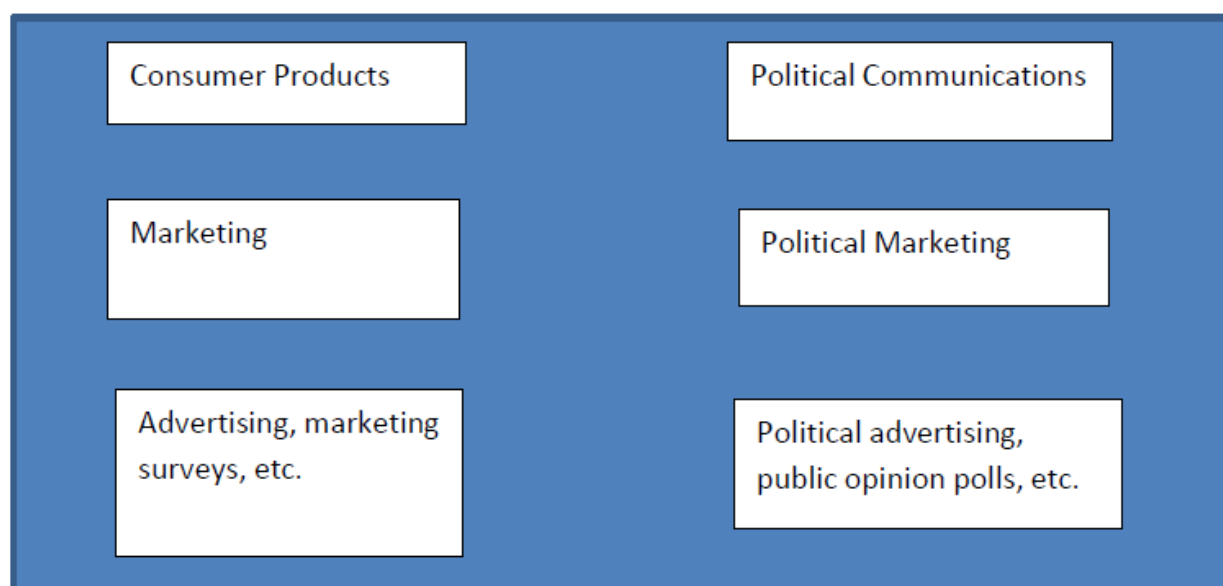
Taking this one step forward he argues that "the central purpose of political marketing is to enable political parties and voters to make the most appropriate and satisfactory decisions" An exchange model to define political marketing is also widely evident. According to it, when voters cast their votes, a transaction takes place. In return for their votes, the party/candidate offers better government and policies after election. This way, marketing can be applied to political processes as it is specifically interested in how these transactions are created, stimulated and valued. The exchange definition of political marketing is broad enough to include "everything that is conventionally regarded as political science. Political communication experts believe that due to the rapid expansion and the diversity of this field of science, there is still no consensus on the definition of political marketing. Political marketing shares with history the desire to explain political leaders' behaviour, shares with political science the desire to understand the political processes and shares with political communication an interest in the art of persuasion.

Gujarat state assembly elections of 2012 – A case study

The Gujarat state assembly elections of 2012 were very important for various reasons ^[7]. It was definitely an democratic exercise for the incumbent state government to get re elected and reinforce the public support in order to carry on what it called the pro development policies but it was also a well-orchestrated election campaign to consolidate the position of the incumbent Chief Minister Narendra Modi and establish him as a first among equals in his own party, the Bharatiya Janata Party, which was to pave way for his claim to be projected as the Prime Ministerial candidate in the 2014 Loksabha elections. Modi had successfully projected Gujarat was a role model for the elections. The entire election was fought here on the plank of development. Gujarat endorsed the plank of development and has voted accordingly. The Gujarat chief minister added that if the farmers of his state produce more food grains, it will feed the poor in the rest of the country, if a factory is built here, it will provide employment to the people from other parts. He appealed to the people that they should build pressure for good governance and development and added that politicians of the country should strive with honesty to fulfil the desires of people by moving away from the practice of giving false slogans and making empty promises. He finally succeeded in confusing his opponents and convincing his electorate. Although the Congress party won nearly a 40 percent share of the vote in Gujarat at the 2012 assembly elections, it has been structurally and perhaps more importantly psychologically eclipsed locally by the BJP and the number of seats that existed in the 2007 assembly remained more or less same. The BJP state government came to power for the third consecutive time. The 2012 elections of Gujarat state was an important milestone because Narendra Modi was the chief campaigner, lone crusader against the opposition Congress party and his communication technique was the his unique selling point. This paper is an attempt to study the communication content creation, the communication patterns and the various media employed in the political communication. The project is exploratory in nature. Many new mediums which were not available in the past were extensively put to use and exploited to the fullest extent. Social media is comparatively a new medium which did not exist in the 2007 elections but no one used it as Narendra Modi in Gujarat 2012 assembly elections. He created

facebook pages not just for himself but for his party, every minister and ensured that every good work done by the government is highlighted and awareness about the developmental work maximized. His twitter account attracted millions of followers both in Gujarat and non-resident Gujaratis. Twitter was too used to propagate messages about growth and development of Gujarat. His Google hangouts and interactive sessions with the common people too created the kind of momentum which helped him propagate his thoughts and message. He being the chief campaigner could not be present everywhere so he used the hologram technology where he would be speaking at one place but his hologram 3D image would be created at several places and people could listen to him speaking at multiple locations. This technology was being used for the first time and the innovative quotient of this technology attracted both his ardent followers and curiosity clad millions to his rallies. All the existing modes of communication too were used to its fullest capacity to propagate his ideas. Later on he was to replicate all the 2012 assembly election strategy at a much greater scale in the 2014 parliamentary elections in his capacity as the Prime ministerial candidate of the BJP. The study of political branding strategies adopted by the BJP in 2014 parliamentary elections would be incomplete and non perspective if the 2012 Gujarat assembly election strategy is not understood and analysed properly.

The visual aid to explain political marketing by Maarek (1995) is as follows



Commercial and political marketing: two parallel strategies (adapted from Maarek)

[8] **There are nine main differences between mainstream and political marketing**

1. Unlike every other purchasing decision, all voters make their choice on the same day. Moreover, although there are similarities between opinion polls and brand shares' tracking methods, the latter are based on actual purchasing decisions while the former are based on hypothetical questions
2. Voting choice, unlike any other purchasing decision, has no direct or indirect individual costs attached to it.
3. Voters have to live with the collective choice even though it may not have been their preference
4. In elections winner takes all, especially in countries such as the UK where the electoral system is "first past the post".
5. Political parties and candidates are complex intangible products which the voters cannot unbundle and thus they have to decide on the totality of the package
6. In many countries (this applies to the UK as well) it is very difficult to form a new and successful party
7. In most mainstream marketing situations, brand leaders tend to stay in front
8. Political arena, unlike the commercial world, is highly charged with ideas, emotions, conflict and partisanship.
9. The use of negative advertising does not apply to mainstream marketing.

Looking back at the political campaigns:

Looking back at the NDA's ambitious 'India Shining' campaign in 2004 which focused on India's international image instead of internal issues, it was time for the BJP to tread carefully. In 2009, the campaign's core strategy

was to divert the attention from the party's communalist image. The slogan 'Mazboot Neta, Nirnayak Sarkar' promoted the then Prime Ministerial candidate LK Advani and aimed to project him as a capable candidate in comparison to the incumbent Manmohan Singh. BJP also launched several counter campaigns to the ruling party such as 'bhay ho', a parody to INC's 'Jai Ho'. ^[9]The 2009 elections campaign largely highlighted the failures of the UPA government in addressing issues such as terrorism, unemployment and inflation. The party reached out to its voters using SMS, tapping into the then pool of 35 crore mobile subscribers.

^[10]In 2014 the scene was different. Although the BJP was promoting itself aggressively in various ways for the past few months, the opposition party did not roll out its print and television campaign. Not very different from 2009, BJP's 2014 campaign focused on its Prime Ministerial candidate, Narendra Modi. This time the slogan was more specific 'Modi for PM'. The proven credentials of Narendra Modi were being communicated to the people. The slogan also stood for an individual who has been around in terms of governance; he was a person of accomplishments and the right person to take the country forward. Since Modi was named the Prime Ministerial candidate, naturally all the campaign strategies revolved around him and his personality. BJP also launched the 'One Note, One Vote' initiative as a part of its campaign. In an attempt to assess support and reach out to at least 10 crore families, party workers were to go from door to door collecting 'one note' of denominations between Rs.10 to Rs.1000 as an official and legitimate donation. Continuing to embrace technology like no other party, BJP also launched their 272+ app, available for free on Android's play store, which was an open forum for volunteers, enabling discussions and exchange of ideas. The campaign and its initiatives surely point towards a party that is very confident of achieving the 272+ number in the parliamentary elections. All the communication that the BJP did was just not a piece of communication but it was designed to effectively communicate with the desired audience / target group. The content, the packaging of the message and the medium chosen was meticulously planned to solicit the precise emotive response from the target audience. This designs the desired impression in the minds of the electorate. Designing of impression in the minds of target audience is branding and since this is a political arena, hence political branding.

CONCLUSION

The inference of this study is to understand the fundamental difference in the way political communication happens in the present times and to clearly understand how it differs from what it used to be in the past. Also factor in the reasons for this change. To better understand, let us understand this difference by a 'then and now' perspective.

Then and Now – A perspective: Earlier in any election, the political parties in India used to go to every voter's house. It was ensured that at least four such visits should happen to ascertain that the messages are communicated with required impact. A) First was to distribute pamphlets informing the voters who the candidate was, B) then it was to inform them about meetings, C) then to distribute the voting cards and D) final visit was on the voting day to ask them to come out and vote. Now it is possible to stay in touch with the voters through SMS and WhatsApp on a regular basis in addition to all the conventional and the new mediums that have emerged.

Direct Debate initiatives seen for the first time: While rallies are a one way discussion and news channel debates barely a discussion, there is no other way for the common people to interact directly with a politician. Changing this trend are video chats that several politicians have adopted as a means to reach out to supporters without any middle man. There has been several first-time initiatives which has become a standard to be followed in direct communication. The concept of direct debate is in its nascent stage now and every effort that produces results is worth looking into and gives more insight into the direct communication during the elections.

Chai pe charcha with Namo: Seated at a tea stall in Ahmedabad, Modi connected with lakhs of supporters on February 12, 2014 as he answered questions about governance. ^[11]The discussion over tea was relayed to 1000 other tea stalls, set up with large TV screens and projectors, in 300 cities across the country. The event was also broadcast live on the party's YouTube channel. It was a good example of effective on ground and online integration. The party also launched two of the 'Chai pe charcha' on the International Women's Day to discuss issues relating to women's empowerment. This experimentation if compared to the conventional marketing strategy then it can be concluded that this direct debate was an effective way to allow the voters to get a first-hand experience of the leader whom the BJP had named the Prime Ministerial candidate. It was a mass communication experience with the personal touch experienced by many. It also showcased how different and innovative the leader was in his approach. The point of differentiation was clearly established with this kind of exercise and people responded with full enthusiasm and this event was reported, discussed and debated in all the conventional mediums and platforms.

Google Hangouts: Another medium that candidates were tapping into was Google Hangouts. The two main parties and few others held hour long discussions with people watching across the globe. While Modi's Hangouts session was moderated by Hindi film star Ajay Devgan, others were a modest version in the early hours as the aim was to interact with NRI's from USA and Canada.

Facebook Talks Live: In its first of its kind initiative, the social network has come together with newslaundry.com and NDTV to present a platform to Facebook users enabling them to ask questions to leading politicians such as Narendra Modi, Arvind Kejriwal, Mamata Bannerjee, Akhilesh Yadav and Lalu Prasad Yadav and few others. This was called 'Facebook Talks Live', the multi platform, multiscreen initiative was moderated by eminent journalist Madhu Trehan. These new modes of communication were never heard of before but the interesting thing is that as soon as a possibility was seen, the medium of communication was analysed, explored, the pros and cons weighed and then put to use. This was one of the many firsts that was witnessed in the 2014 general elections.

Digital Elections: What has changed the face of these elections is the large role that the digital medium has come to play. It's almost as if the elections are taking place in the virtual world than in reality. When it comes to digital campaigning, the first party that comes to mind is the BJP. This was not the first time that the BJP was capitalizing on the internet as a medium to reach out to the voters. BJP had attempted an online campaign even in 2009 as well but that was little too soon for a country which was just being introduced to the 3G. Five years later, the BJP did not give up on internet instead it had mastered it. Visible on social networking sites as early as one year before the elections was a well calculated move, which gave a lot of positive PR value to the party. Most of the political parties have recognised that a majority of their potential voter base is to be found on this platform and the identification is very rightful. It is helping the parties in targeting audiences with the exact message meant for them. With the traditional media, there is one common message that goes out and anybody who is reading or watching, irrespective of demography and location, receives the same message. From a content perspective, the BJP was ahead of others in disseminating their political agenda categorically and methodically. They have strategic messages that address the youth, the regional level and messages that address national accountability.

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STUDENTS' PERCEPTION TOWARDS USE OF WHATSAPP FOR HIGHER EDUCATION: A STUDY WITH REFERENCE TO UDUPI CITY

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ABSTRACT

The WhatsApp application instant messaging platform has become the most popular mobile device application regarding one of the teaching and learning styles that facilitates collaborative learning as students are becoming with own smartphone. We investigate the usage of WhatsApp in the Udupi city. Researcher conduct the internet based mobile survey to know the students perception towards use of WhatsApp for higher education. The participants perceived the integrating WhatsApp into their education to be easy fun and useful. They have positive feelings and intention about use of WhatsApp for their higher study.

Keywords: E- learning, Social Media, WhatsApp, Mobile application

INTRODUCTION

WhatsApp is a messenger application .it is a freeware cross platform messaging and it is owned by Facebook. WhatsApp was founded in 2009 by Jankoum and Brain Acton. WhatsApp launch in India Between 2009 to 2014. The first version of WhatsApp was launched for iPhone users on May 3, 2009. In May 2014 WhatsApp crossed 15 million active users in India. In January 2018 WhatsApp has 1.5 billion and 60 billion messages sent per day and 1 billion daily active users. WhatsApp is the means of informing technology as well as influencing the general public relationship.it is help for sending messages, voice calls as well as video call images, other media, document. More than 1 billion people in over 180 countries use WhatsApp to stay in touch with friends and family etc. use the group chats, to create learning and study groups. Create audio lessons that can be sent directly to students', stay in contract with students outside the classroom.

RESEARCH OBJECTIVE

- To analyze the students perception on use of WhatApp for their Higher Education

RESEARCH METHODOLOGY

The study is based on primary and secondary data. Secondary data was collected from internet, books, and journals. Researcher has collected primary data through structured Questionnaire with sample size of 106, covering an area of 2 sections that were designed to collect the following data

1. Student's use of WhatsApp for education purpose
2. Student's perception of the formal use of WhatsApp for educational purpose. For study we use random sampling method. Tabular and diagrams are used for presenting the data and for testing hypothesis chi-square test has been used.

HYPOTHESES

H₀: There is no significant relationship between use of WhatsApp and higher education.

H₁: There is significant relationship between use of WhatsApp and higher education.

NEED FOR THE STUDY

In the rapidly growing economy, WhatsApp is widely used by almost all the students. It acts as a helping hand to many students to raise their marks. Thus, there is a need to study the role of WhatsApp that benefits the higher education students. Moreover, many studies conducted the positive impacts of the WhatsApp application in education such as it included effective information, sharing and the students' perception of WhatsApp towards higher education.

LITERATURE REVIEW

Maheswari (2014) conducted a study to analyze the frequency of using WhatsApp Messenger by college students in Salem District, Tamil Nadu. It was found from the study majority of respondents using WhatsApp Messenger usually send images, videos and do group chatting with minimum number of friends and long-time users usually send images, videos and do group chatting with maximum number of friends. The study identified that majority of respondents using WhatsApp Messenger usually do chatting through WhatsApp messenger. It is recommended that, awareness could be created between all the people irrespective of their age, educational

surroundings, sex, profession etc. If this could be done, not only the college going students but all the people could reap the benefit of using WhatsApp Messenger.

Alsalem (2014) carried out a study to find out the effect of WhatsApp electronic dialogue journaling on writing development as marked in a rubric specifically scoring vocabulary word choice and voice of undergraduate students at Allmam Mohammad Ibn Saud Islamic University in Saudi Arab. This study point out that WhatsApp electronic journaling showed significant improvement towards writing. The results of this study indicates that university EFL instructors need to be alert that WhatsApp electronic dialogue journaling methodology could be an useful method of helping their students to improve their writing scores. The study suggested that initiating training programs for less experienced teachers that Centre primarily on ways of using new applications such as WhatsApp successfully in students' classrooms.

FINDINGS OF THE STUDY

The finding focused on the students' perception on the use of WhatsApp as a tool in the classroom and whether or not WhatsApp is significance for future use in helping the students to enhance their language learning. The research was able to identify the components that respondents were able to improve on by using WhatsApp to learn mandarin. Thus the findings indicate that using the WhatsApp application allows respondents to learn the language even when they are away from the classroom as the instructor may upload items or tasks at any time of the day and students are still able to answer those questions no matter where they are.

Table 1: Personal profile of the respondents

Age	Frequency
Up to 15	1
16 - 25	98
26 - 35	7
Total	106

Source: Primary data

Gender	Frequency	Percentage (%)
Female	71	67%
Male	35	33%
Total	106	100%

Source: primary data

Inference: The survey was conducted on 106 students out of which 1 were from the age group of upto15, 98 were from the age group of 16 - 25, and 7 were from the age group of 26 - 35.

In this study 67% of students were female and 33% were males.

Table 2: Number of students use WhatsApp for study purpose

Age	Yes	No	%
upto15	1	-	1
16 - 25	98	-	92
26 - 35	7	-	7
Total frequency	106	-	100%

Source: Primary data

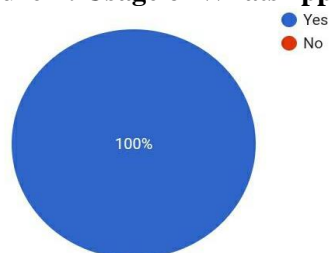
Inference: Table 2 indicates that use of WhatsApp for study purpose is very useful for every grouped student likewise upto15, 16 - 25, 26 - 35.

Table 3: Familiarity with WhatsApp usage

WhatsApp user	No.of students	Percentage (%)
Yes	106	100
No	0	0
Total	106	100%

Sources: Primary data

Inference: Table 3 indicated that out of the 106 all the respondents specified they are familiar with WhatsApp messenger

Figure-1: Usage of WhatsApp

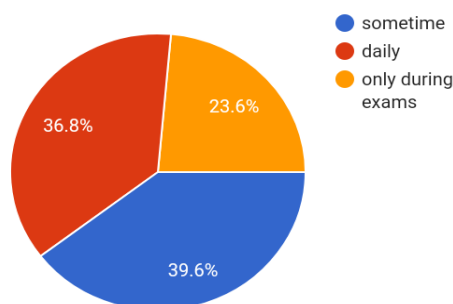
Source: primary data

Table-4: Perception on: use of WhatsApp for study purpose

Usage	No.students	Percentage (%)
Sometime	42	37%
Daily	39	39%
Only during exam	25	24 %
Total	106	100%

Sources: primary data

Inference: Table 4 indicates that use of number of students 106. In 42 students use WhatsApp for study purpose sometimes and likewise 39 students use daily and 25 students use only during exam time.

Figure-2: preferences of WhatsApp for study purpose

Source: primary data

Table-5: Perception on students groups in WhatsApp

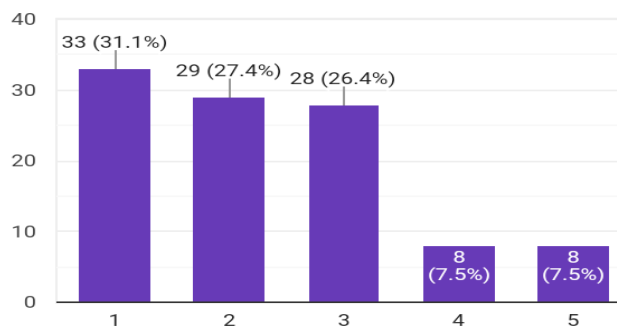
Student groups in WhatsApp	No. of students	Percentage (%)
Strongly agree	33	31.1%
Agree	29	27.4%
Neutral	28	26.4%

Disagree	8	7.5%
Strongly disagree	8	7.5%
Total	106	100%

Sources: primary data

Inference: Table 5 indicated that separate WhatsApp group for study purpose, number of 33 students has strongly agree.

Figure-3: Formation of groups in WhatsApp for study purpose



Source: primary data

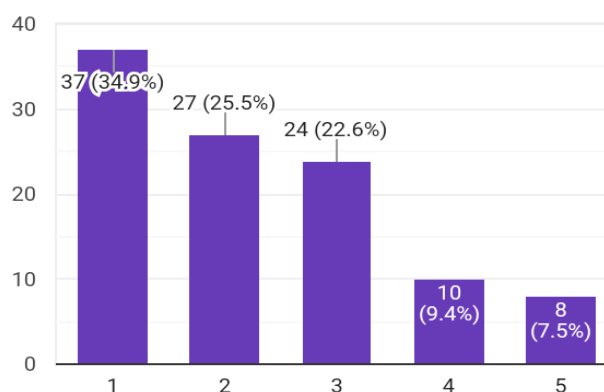
Table 6: Perception on share education link in WhatsApp

Share education link in WhatsApp	No. of students	Percentage (%)
Strongly agree	37	34.9%
Agree	27	25.5%
Neutral	24	22.6%
Disagree	10	9.4%
Strongly disagree	8	7.5%
Total	106	100

Sources: primary data

Inference: Above table 5 and figure 1 inferred that 35% of students are strongly agree with the share education link in WhatsApp, 25% of student's are agree with share education link in WhatsApp, 22% of students are neutral with share education link in WhatsApp, 10% students are disagree and 8% students are strongly disagree with statement.

Figure-4: Sources of sharing educational link



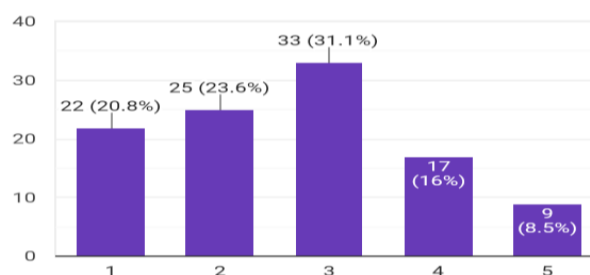
Source: Primary data

Table-7: Perception on WhatsApp is more beneficial for students than other apps

Serial number	WhatsApp is more beneficial than other app	No. of students	Percentage (%)
1	strongly agree	22	20.8%
2	agree	25	23.6%
3	neutral	33	31.1%
4	disagree	17	16%
5	strongly disagree	9	8.9%
10	total	106	100%

Sources: Primary data

Inference: The above table indicates that 20.8% of the respondents strongly agree that WhatsApp is more beneficial than other apps 23.6% are agree, 31.1% are neutral ,16% are disagree and remaining 8.9% are strongly disagree.

Figure-5: Comparison of WhatsApp with other apps

Source: Primary data

TESTING OF HYPOTHESIS

H₀: There is no significant relationship between use of WhatsApp and higher education.

H₁: There is significant relationship between use of WhatsApp and higher education.

Table 8: Significance difference between use of WhatsApp and higher education

Usage	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Sometime	19	10	3	3	4	39
Daily	11	10	10	5	5	41
Only during exam	7	6	10	2	1	25
Total	37	26	23	10	10	106

Source: primary data

Table 9: Chi square analysis

Chi square test	Table value	Significance
9.36	9.49	No.significance

Source: primary data

Since the calculated value is less than the table value, the alternative hypothesis "there is significance difference between use of WhatsApp and higher education " is rejected and the null hypothesis is accepted.

CONCLUSION

This paper has found out that WhatsApp is an effective and affordable platform for higher educational student. Most importantly educational institution also created WhatsApp group for communicating with their peer group and students. Students used WhatsApp for informal learning activities. New ways of communication has been laid by WhatsApp which is helping students share content of their use in a limited spam of time. Contribution of medium like video, pictures and voice notes along with constant availability of facilitators and learning anytime, anywhere has made WhatsApp a new and convenient tool for teaching learning activity. Though there is significance relation between WhatsApp and education. Enabling a Wi-Fi in the college campus can make its use cost effective, learning via WhatsApp, that's what's up!

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UNDERSTANDING THE ROLE OF SELF EFFICACY, GOAL VALUATION AND ENVIRONMENT PERCEPTIONS IN GIFTED UNDERACHIEVERS

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ABSTRACT

Many of us continue to believe that "If a child is truly exceptional, s/he will 'make it' on their own." As years of research and practice in countries with gifted education programmes demonstrate, we simply cannot expect a gifted child to realise his potential without support from parents, teachers, schools, and the wider community. A gifted child is above all a child, with a child's needs and vulnerabilities. If we accept that children in general have a right to appropriate education, it is unjust for us to deny as much to gifted children. So in the present document, a qualitative multi-case study approach was used to understand the role of self efficacy, goal valuation and environment perception in gifted underachievement. For investigation five government secondary schools were drawn from Chandigarh by employing random sampling. From the selected schools gifted students will be identified by using APM and teacher's nomination form. Then, by using regression equation and standard error of estimate gifted underachievers were identified. Researches in the fields of educational psychology and gifted education can enhance our efforts to create positive achievement environments for gifted children.

Keywords: Environment perception, Gifted underachievement, Goal valuation, and Self efficacy

INTRODUCTION

Why one gifted student achieves whereas other does't remains an enigma. Although there have been much inquiry and debate in the field of underachievement of gifted students (Dowdall & Colangelo, 1982; Reis & McCoach, 2000; Whitmore, 1986), very few controlled studies have demonstrated the effectiveness of specific interventions designed to reverse that underachievement. The national educational agenda of the 21st century confirms "students' achievement is the top priority to national policy framers because it is closely related with the productive skills of the students who bring them to the industrial market" (Office of Educational Research and Improvement, 2000, p. 50). The underachievement of gifted students presents a great loss of human resources for the nation, as well as a threat to the unrealized fulfillment for the child. Assessing why some high-ability students demonstrate low levels of achievement is difficult because there prevails many reasons for underachievement among gifted students (Rimm, 1995).

What is Giftedness?

Giftedness may demonstrate in one or more domains such as; academic, creative, artistic, leadership, or in a specific intellectual field such as language, arts or science. Giftedness is often stated as an intellectual ability related with an IQ score of 130 or above. Although, not all gifted students perform well in the academic area. Some may display high creative, artistic, musical and/or leadership qualities as compare to their peers.

Table-1: Showing scale of human intelligence

Binet scale of human intelligence		
IQ Score	Original Name	Modern Term
Over 145	Genius	
130-144	Superior	
120-129	Bright of Smart	
110-119	High Average	
90-109	Low Average	
80-89	Average or Normal	
70-79	Borderline Impaired	Delayed
55-69	Mildly Impaired	
40-54	Moderately Impaired	Severe
Below 20	Mental Retardation	Profound

Source: https://en.wikipedia.org/wiki/Stanford-Binet_Intelligence_Scales

Unique characteristics of gifted individuals

While discussing characteristics of gifted children, we must understand that many of these characteristics may be present or not present in one individual.

There are always other elements which have deeper impact on giftedness of the individual. Cognitive attributes which are common in gifted children are:

- Above-average general intellectual ability
- Ability to find and solve difficult and unusual problems
- Ability to process and learn information quickly
- Ability to see connections, relationships, and multiple perspectives
- Ability to understand abstract and complex concepts
- Extensive and detailed memory
- Intense love of reading
- Advanced vocabulary and communication skills
- Curiosity in many areas
- Desire to ask a lot of questions
- Intense, sustained passion in one area, which may change over time
- Ability to concentrate for long periods of time on projects of interest

Underachievement in Gifted Children

One of the greatest frustrations for parents of gifted children is the assumption that giftedness means performing well in traditional school environments. Gifted students may not be intrinsically motivated by academic achievement; they are more passionate about the acquisition of knowledge than performing rote tasks. This creates a problematic situation as the school structure and grades rely on repetition and memorization. Although there are many reasons gifted students underachieve, the most common are:

- A mismatch between students and their classroom environment
- Disinterest in content
- Poor self-concept
- Fear of failure
- Learning disabilities
- Lack of self-regulation
- Lack of study skills

Causes of Underachievement

Reis and McCoach (in press) suggested that the underachievement of bright students occurs for one of three basic reasons:

1. An apparent underachievement problem masks more serious physical, cognitive, or emotional issues such as learning disabilities, attention deficits, emotional disturbances, psychological disorders, or other health impairments (Busch & Nuttall, 1995; Dowdall & Colangelo, 1982; Lupart & Pyryt, 1996; Silverman, 1991).
2. The underachievement is symptomatic of a mismatch between the student and his or her school environment (Emerick, 1992; Siegle, 2000).
3. The underachievement results from a personal characteristic such as low self-motivation, low self-regulation, or low self-efficacy (McCoach & Siegle, 2001; Reis & McCoach, 2000; Siegle, 2000; Whitmore, 1980).

Self-Efficacy

Self-efficacy is the individual's judgment about being able to do a particular activity. It is the child's "I can" or "I cannot" belief. Self-efficacy is specific to the task being attempted. For example, a student may be very efficacious about her algebra skills, but not so efficacious about her geometry skills. Confidence can be developed among children in many ways, and those who are confident about their abilities are more likely to engage in various activities. The perceptions children have about their skills have great impact on the types of activities they select, how much they challenge themselves in those activities, and the persistence they show when they are totally engaged in those activities (Ames, 1990; Bandura, 1977, 1986; Schunk, 1981). The

statement stands true for activities ranging from participation in sports and music, to school achievement. Although research has shown that gifted students hold higher academic self-perceptions than their nongifted peers (Dai, Moon, & Feldhusen, 1998), much of the research literature on gifted underachievers suggests that they demonstrate low self-efficacy or poor self-concepts (Reis & McCoach, 2000; Supplee, 1990; Whitmore, 1980).

Environmental Perception

Environmental perceptions concern the level of support students perceive from those around them i.e. Teachers, Parents, Peers. Students' perceptions of their environment have a significant effect on the achievement motivation. Students who perceive their environment as friendly and reinforcing may likely to exhibit achievement-oriented behaviors. Phrases such as, "My teacher doesn't like me," or, "I can't learn this way," show that children consider their learning environment as unfriendly and also perceive that their efforts do not result in effective outcomes (Rathvon, 1996). Gifted underachievers often have negative views regarding their school (McCoach & Siegle, 2001). They often view that they don't fit into the education system, and some times, giftedness actually present a stigma in the schools (Cross, 1997).

Goal Valuation

Valuing the goals of school was more highly related to motivation than were students' attitudes toward school, attitudes toward teachers, or their academic self-perceptions. Children's goals and achievement values affect their self-regulation and motivation (Ablard & Lipschultz, 1998; Wigfield, 1994) because goals influence how children approach, engage in, and respond to achievement tasks (Hidi & Harackiewicz, 2000). Students find their school tasks meaningful for a variety of reasons. Students' motivated behaviour to achieve well results from the attainment value, utility value, and intrinsic value of the task. Attainment value is the importance or value which the students attach to the task, as it leads to the conception of their own identity. Providing students with role models who value academic achievement can enhance their attainment value. Utility value is how the task is associated with future goals. Although students may not enjoy the task, they may value a later reward or outcome it provided (Wigfield, 1994). Teachers should answer the common query, "Why do we have to study this topic?" Intrinsic value results from the happiness that the task provides for mere participation (Wigfield, 1994). When students enjoy scholastic tasks, they are intrinsically motivated to do well. Interests and personal attachment associated with the task result in the intrinsic value for a student.

Purpose of the study

The present study investigates the role of self efficacy, goal valuation and environment perception in gifted underachievement. For decades researchers have studied this phenomenon in an effort to help gifted students achieve their full potential and prevent potentially devastating consequences like school failure, dropping out, delinquency, etc. The major factor in the development of under achievement patterns is lack of motivation. It is important to study the different factors of motivation. Self Efficacy, goal valuation and environmental perception influence motivation, which in turn leads to academic achievement.

Phase 1: Identification of the gifted students.

For the identification of the intellectually gifted students from the general population, the following criterion will be used:

1. Teacher's nomination form (Parke, 1989) will be used to identify gifted students.
2. The advanced progressive matrices (APM) by Raven, Raven and Court (1998) will be used to measure the intelligence levels of the students.

Phase 2: Identification of gifted underachievers (Identification of the underachievers from the gifted population)

In this phase, the investigator will identify the underachievers from the population of gifted students. For identification of underachievers, the regressed scores will be predicted from intelligence scores by using the following regression equation:

$$\bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - M_x) + M_y$$

$$\text{Where } r = r \frac{\sigma_y}{\sigma_x} = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - (\sum X)^2}$$

N- Number of students

X- Scores of students on an intelligence test

Y - The results obtained in the VIIth class examination will be considered to represent the academic achievement of the gifted students

M_X - Mean of Intelligence scores.

M_Y - Mean of Achievement scores.

σ_X -Standard deviation of intelligence scores

σ_Y -Standard deviation of achievement scores

Standard error of estimate for predicting Y (achievement scores) for X (intelligence scores).

$$\sigma_{yx} = \sigma_y \sqrt{1 - r^2_{xy}}$$

Where σ_{yx} standard error of estimate predicting Y and X

An underachiever is one whose actual achievement score will be below his/ her predicted score by one standard error of estimate of predicted score.

Sample

Five government secondary schools were drawn from Chandigarh by employing random sampling. From the selected schools gifted students will be identified by using teacher's nomination form and APM. Then, by using regression equation and standard error of estimate gifted underachievers were identified.

Table-2: List of identified gifted underachievers

Code	X (Intelligence Score)	Y (Actual Achievement)	\bar{y} (Predicted achievement)	$\bar{y} - \sigma_{yx}$	$\bar{y} + \sigma_{yx}$	Status
Student A	27	555	735.895	651.4345	820.3555	Gifted underachiever
Student B	18	512	614.72	530.2633	699.1843	Gifted underachiever
Student C	24	435	633.47	560.5561	729.4771	Gifted underachiever

PHASE II: IDENTIFICATION OF CAUSES OF UNDERACHIEVEMENT AMONG GIFTED STUDENTS

Researchers and theorists have suggested various reasons for underachievement (broad patterns or combination of factors), some based on sound research, and others based on clinical observation or theory.

These tools were administered on students in order to know factors which may be the reasons of students' underachievement.

1. School Attitude Assessment-Revised/ Adopted (McCoach & Siegle, 2003b)
2. Challenges to Scholastic Achievement Scale (McCoach, Picho, & Baslanti, in press).
3. Engagement vs. Disaffection with learning (Skinner, Kindermann, & Furrer, 2009)

Measurement

Since task meaningfulness, environmental perceptions, self-efficacy, self-regulation, achievement, and engagement are latent variables, data that directly measure these constructs were collected. Subscale items from the School Attitude Assessment-Revised (SAAS-R), Challenges to Scholastic Achievement Scale (CSAS) and Engagement vs. Disaffection with Learning Support-student report (EvsD) was used to measure engagement.

Table-3: Showing factors of Underachievement among Gifted Underachievers

Name Factors	Student A	Student B	Student C
Self-Efficacy	Very Low	Medium	Medium
Goal Valuation	Low	Very Low	Low
Environmental Perceptions	Medium	Medium	Negative

Quantitative analysis was done from the data collected from three students. Student A showed very low self-efficacy and goal valuation. Student B showed very low goal valuation and student C showed negative environmental perceptions and low goal valuation.

Strategies to improve Self Efficacy, Goal Valuation and Environment Perception

For those who suffer from poor self-efficacy, Siegle (1995) suggested the following strategies to increase self-efficacy. Students who have been successful in the past are more likely to believe they will be successful in the future. The popular proverb "Success breeds success" very often holds true for self-efficacy. Parents and teachers should help gifted underachievers to recognize their successes and growth in specific areas for enhancing self-efficacy.. A specific compliment, such as, "You really know how to calculate area," provides more information to a student than a general comment, such as, "Good job." Rewards also increase students' self-efficacy when they are attached to specific accomplishments (Schunk, 1989). By giving the work to revise, teachers provide opportunities to the students and promote efficacious behavior. Students should understand that any task, even if it is well executed, can be enhanced with practice. If in first attempt, the task is fraught with mistakes, still it can be learned with practice. Maintaining portfolios of the student's work is an effective method to document student's growth and improvement over time (Schunk, 1998). Providing students with challenging assignments, giving specific praise for students' achievements, and granting opportunities to students to revise their work leads to promote self- efficacious behaviour among gifted underachievers.

Students' perceptions of their environment can spur them to work hard. They must believe that those around them value them and want to see them succeed. Students need caring teachers and parents who believe they have the ability to do well. They need peers who support academic excellence. Students' attitudes toward school and achievement orientation influence their achievement behaviors and motivation (Ford, 1996).

When the goals of the school are valued by the children, they engage themselves more in academics, expend more effort to the schoolwork, and become academic achievers. Emerick (1992) stated that gifted underachievers were able to reverse the academic underachievement when they understand and value goals that were both personally motivated and have direct association with academic achievement. Students' motivated behaviour to achieve well results from the attainment value, utility value, and intrinsic value of the task. To increase attainment value encounter students with role models who value academic achievement. As goals can play a key role in achievement, educators and parents should help students see beyond the immediate activity to the long-term benefits it produces. When scholastic tasks provide happiness to students, then they are intrinsically motivated to perform well. Educators should create an enriching environment and providing opportunities for students to explore their interests.

CONCLUSION

Education and nurturance of our gifted children is a responsibility we must undertake as a nation. In the current scenario, a few private institutions and government schemes exist that tend to cater primarily to children from already educated and privileged backgrounds. The article attempts to find out the answers for why do so many learners of high ability fail to perform to their potential? It highlights the role of self efficacy, goal valuation and environment perception in gifted underachievement and needs to develop educational programmes to optimize their social and emotional adjustment, academic performance, and ability development. Importantly, it also clearly shows that gifted children, like any other children, are vulnerable to limitations in their socioeconomic circumstances. They pose obstacles in our educational system by the fact that their own cognitive development often outstrips their emotional development. So, self efficacy, goal valuation and environment perceptions are some of the areas that must address in its effort to develop a national, accessible, and comprehensive gifted education programme.

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A STUDY OF CUSTOMER PREFERENCE TO TATA NANO: WITH REFERENCE TO MEHSANA DISTRICT

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ABSTRACT

Many international automobile companies are trading & manufacturing in India because of Liberalization, Privatization and Globalization Policy. The availability of many brands in Mehsana District provides different options to the customer. These manufacturers represent the same value proposal and provide highly modified products. Present study was conducted on 100 Nano car users from 200 customers of Mehsana District of Gujarat. The purpose of this paper is highlighting customer preference toward Tata Nano cars.

Keywords: customer preference, Car Market, Automobile Industry, Personality Theory, Customer Satisfaction

INTRODUCTION

It is difficult to please existing customers. Market conscious society became smarter and more valuable conscious and more demanding and less forgiving. They give competitors equal or often good offers. So it's not a challenge to produce for customers, any company can do it. The real challenges are to create happy customers and more important loyal customers.

Customers are the king and without their satisfying needs corporate competitive world in none. Customer perception is a marketing concept that encompasses a customer's impression, awareness and consciousness about a company on its offerings. Customer perception is typically affected by advertising, personal experience, reviews, social media, public relation and other channels.

By way of analyzing customer preferences, we can clearly understand how much a firm treats its customers, what is the quality of their products, is it able to serve the dynamic needs of customers, what will they need to make changes.

The Study reports relates to customer selection analysis done among Tata Nano customers, who have bought various brands of Tata Nano.

REVIEW OF LITERATURE

"A Study on Consumer Preference on Users of Car in Krishnagiri Town" Conducted by D.Lakshmanan. K. Gayathri, M.Phil, Research Scholar, Sacred Heart College, Thirupattur. Main objectives of the study are, to know general preference and awareness about NANO

A STUDY ON CONSUMER PERCEPTION AND EXPECTATIONS FOR TATA NANO" Conducted by Dr. Garima Malik Asst. Prof in Amity Business School- Noida. Main objectives of the study are, to know general perception and awareness about NANO, factors influencing purchasing decision and customer expectations from NANO, etc... The study reveals that long waiting period, bad word of mouth and reports in the market like "Auto-rickshaw", etc. have negative impact on the products demand. Customers are satisfied in price and fuel efficiency, effective sales promotion activities with the theme of 'Young-car' and steps to solve complaints from customers are necessary to improve customers' satisfaction.

OBJECTIVES OF THE STUDY

- To find out the attitude of young generation towards Tata Nano.
- To find out the factors influencing in selection of Tata Nano.
- To study whether there is any change in preference of new generation towards Tata Nano.
- To analyze the level of preference for models of Tata Nano.

Important of the Study: The present research study will be helpful to the new researcher in this area, contribute significant knowledge about LMV in Mehsana district of Gujarat and at the same it provides new knowledge to manufacturers of LMV to frame efficient marketing strategy.

RESEARCH METHODOLOGY

The main purpose of present chapter is to provide details of various methods / techniques applied in the research work. In addition to the methods used, data collection and statistical techniques applied for the analysis is also discussed in detail. The methodology includes collection primary and secondary data.

RESEARCH DESIGN

Research design is basis frame work, which provides guidelines for the rest of research process. The research design specifies the method of study. Research design is prepared after formulating the research problem and need to be most suitable to solve the problem.

POPULATION

Here the researcher selected 200 customers who purchased different brands of Tata Nano.

SAMPLE SIZE

Present study is selected 100 respondents from 200 customers of Mehsana District of Gujarat

DATA COLLECTION

This study based on Primary and secondary data. Primary data are collected directly by way of using questionnaires as well as by meeting the company managers, store keeper, service head and also few sales executives of different agencies. Whereas secondary data is collected from secondary source vie-various journal, magazine, library books, newspaper and annual reports and website of regional rural banks and through various search engines. The methodology of this study involved collection of the primary data and the secondary data.

STATISTICAL TOOLS USED**➤ PERCENTAGE ANALYSIS**

This is the simplest way to analysis different types of data in this method. With the help of the percentage rate the analyzing the data was carried out.

➤ CHI-SQUARE TEST

Chi square test is the important type of non parametric tests. Non parametric tests are used when assumptions required by the parametric counterpart tests are not met are questionable. All test involving ranked data are non parametric. In non parametric tests no assumptions are made about the parameters of population from which we draw our samples are made. These tests are distribution free.

It explains the magnitude of difference between observed frequencies and the theoretical or expected frequencies under certain assumptions. With the help of chi square test we are able to find out whether such differences are significant or insignificant and could have arisen due to sampling fluctuations.

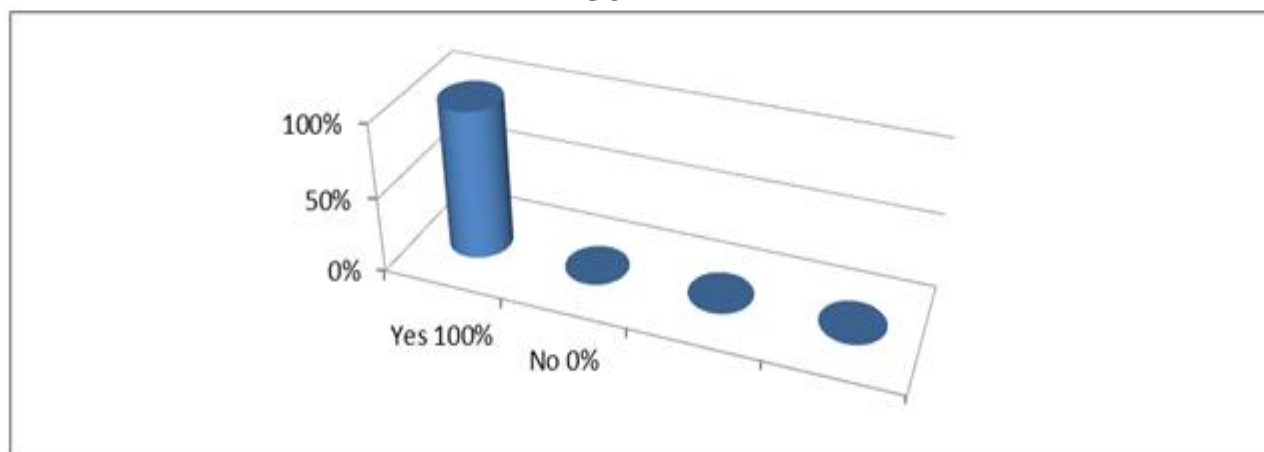
ANALYSIS OF DATA

Table and figure showing the respondents' knowledge about the Tata Nano.

Table-1

SL NO	OPTIONS	NO.OF RESPONDENTS	PERCENTAGE
1	Yes	100	100%
2	No	0	0%
	Total	100%	100%

Source: Primary Data

FIGURE-1

INTERPRETATION: The above table shows that the whole respondents under the study had already heard about the Tata Nano.

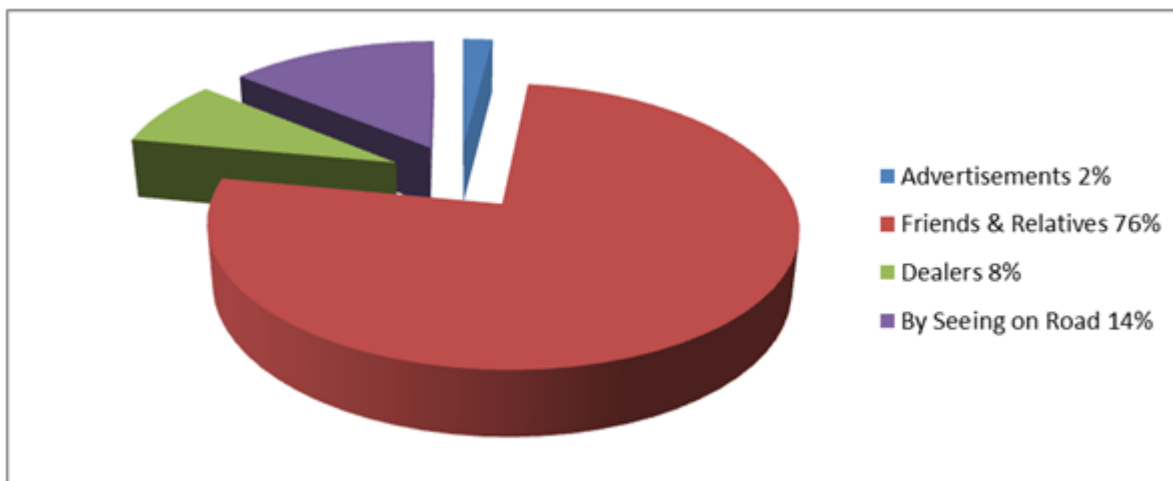
Table and Figure showing respondents' source of information about Tata Nano.

Table-2

SL NO	OPTIONS	NO.OF RESPONDENTS	PERCENTAGE
1	Advertisements	2	2%
2	Friends & Relatives	76	76%
3	Dealers	8	8%
4	By Seeing on Road	14	14%
	Total	100	100%

Source: Primary Data

FIGURE-2



INTERPRETATION: From the above table and figures it is clear that 76% of customers had heard about Tata Nano from their friends and relatives, 14% by seeing on road, 8% from dealers and rest of 2% from advertisement.

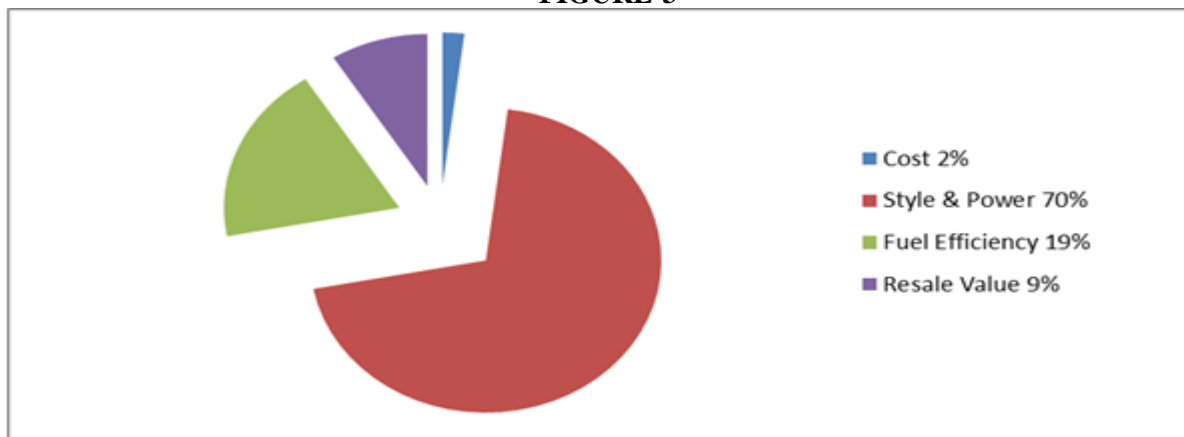
Table and Figure showing the most required feature for respondents while purchase a Car.

Table-3

SL NO	REQUIRED FEATURE	NO.OF RESPONDENTS	PERCENTAGE
1	Cost	2	2%
2	Style & Power	70	70%
3	Fuel Efficiency	19	19%
4	Resale Value	9	9%
	Total	100	100%

Source: Primary Data

FIGURE-3



INTERPRETATION: It is clear from the study that 70% of respondents provide importance to style & power, 19% provide importance to fuel efficiency, 9% provide importance to re-sale value and only 2% of respondents provide importance to cost.

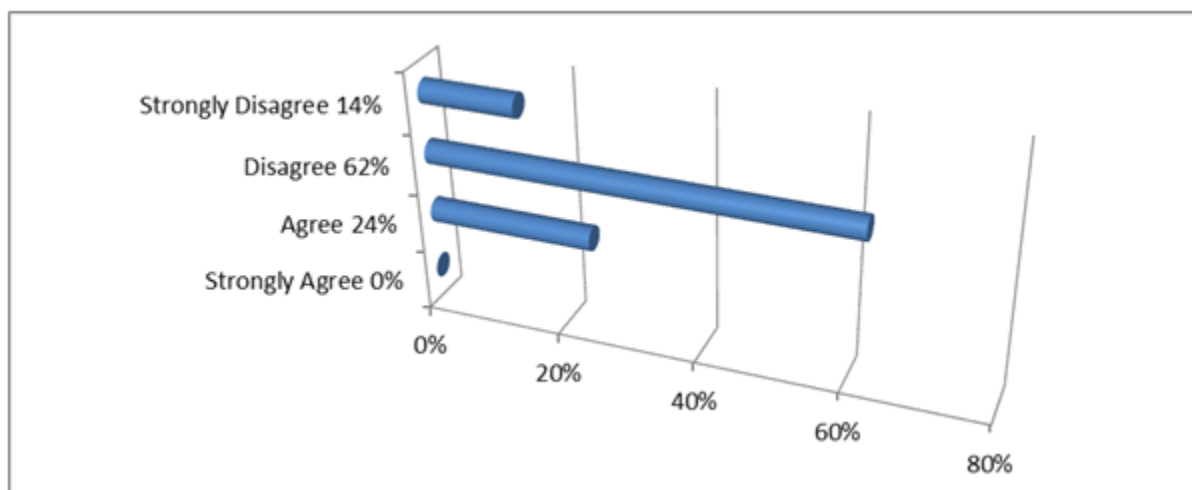
Table and Figure showing the respondents' opinion about the reduction in use of Tata Nano among Elders.

Table-4

SL NO	OPINIONS	NO.OF RESPONDENTS	PERCENTAGE
1	Strongly Agree	0	0%
2	Agree	24	24%
3	Disagree	62	62%
4	Strongly Disagree	14	14%
	Total	100	100%

Source: Primary Data

FIGURE-4



INTERPRETATION: The above table shows that none of respondents strongly agree, 24% are agree, a majority of 62% are disagree and 14% are strongly disagree that there is a reduction in use of Tata Nano among Elders.

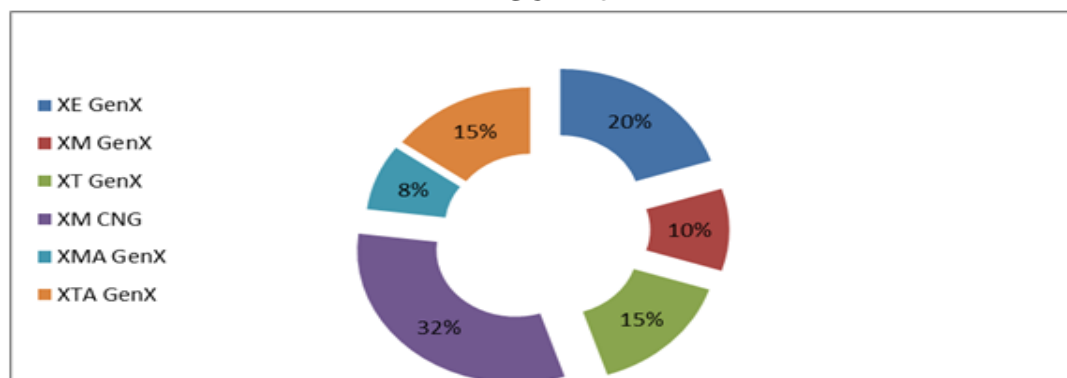
Table and figure showing the model of Tata Nano which are used by respondents

TABLE-5

SL NO	MODEL	NO.OF RESPONDENTS	PERCENTAGE
1	XE GenX	20	20%
2	XM GenX	10	10%
3	XT GenX	15	15%
4	XM CNG	32	32%
5	XMA GenX	8	8%
6	XTA GenX	15	15%
	TOTAL	100	100%

Source: Primary Data

FIGURE-5



INTERPRETATION: It is clear that 32% of respondents are using XM CNG, 20% are using XE GenX, 15% are using XT GenX and XTA GenX, 10% are using XM GenX, 8% are using XMA GenX.

CHI-SQUARE**RELATIONSHIP BETWEEN FACTORS INFLUENCING THE BUYING DECISION AND MAIN ATTRACTION OF TATA NANO**

This test is done to find out the significant relationship between the factors influencing the four-wheeler buying decision the main convenience of Tata Nano

<i>Factors of buying decision</i> <i>Main convenience</i>	FUEL EFFICIENCY	COST	STYLE & POWER	RESALE VALUE	TOTAL
power steering	6	7	5	8	26
Air Conditioner with Heater	4	3	7	10	24
Fuel Reminder Control System	9	8	8	4	29
Minimal Engine Noise	8	4	4	5	21
TOTAL	27	22	24	27	100

NULL HYPOTHESIS(H₀)

There is no significant relationship between the factors of buying decision and the main convenience of Tata Nano.

ALTERNATIVE HYPOTHESIS(H₁)

There is significant relationship between the factors of buying decision and the main convenience of Tata Nano.

Level of significance of $\chi^2 = 0.05$ choose to test

Degree of freedom = 9

Table value of Chi-square at 5% level of significance at 9 degree of freedom (Chi square value) = 8.880

P Value = **0.448**

Inferences

Since the calculated value is greater than the table value, we accept the alternative hypothesis (H₁) that there is significant relationship between the factors of buying decision and the main convenience of Tata Nano.

FINDINGS

- It is clear from the study that a majority having 76% of respondents had heard about Tata Nano from their friends and relatives.
- Advertisement is rare in case of Tata Nano.
- Majority of Tata Nano customers are giving importance to style and power. Style and power is the main attraction of Tata Nano.
- Whole customers are satisfied in the resale value of Tata Nano.

CONCLUSION

By the Study entitled "*A Study of Customer Preference to Tata Nano: With Reference to Mehsana District*" was undertaken with the objective of finding out customer's preference level on Tata Nano cars. Here adopted suitable methodology for data collection and analysis. It is clear from the study that the most customers of Tata Nano are highly satisfied in almost all areas offered by Tata Nano. And most majorities among the satisfied customers are delighted customers. This study reveals that by way of reducing the lead-time, improving fuel efficiency, service and advertisement and by introducing new models capable to compete with the fresher's in the market, Tata Nano can easily make the whole customers into highly delighted customers.

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AN ANALYSIS OF THE FINANCIAL PERFORMANCE OF SELECTED INDIAN COMMERCIAL BANKS

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ABSTRACT

Today, the Indian banking sector is facing many challenges to implement the capital regulations specified under III Basel norms. For implementing the new capital regulations under this norm, financial stability of banks plays a vital role. Banks which are financial sound can easily implement the new regulations, but it becomes difficult for the financially weaker banks to find out and maintain the required capital as per international norms. Thus, financial analysis of banks has become imperative today to identify their financial position.

Basically the financial position of banks are the function of combination of multiple factors like assets quality, management efficiency, earning capacity, liquidity and sensitivity to market risk. The objective of paper is to evaluate financial position of selected Indian Commercial Banks. The paper is analytical in nature and used secondary data from the year 2012-13 to 2016-2017 for analysis. The study comprised ten banks for study in which five from public sector and remains from private sector. Paper analyze the performance of banks based Altman's Z score model (B) where 4 ratios (X1, X2, X3 & X4) are assigned weights by coefficients. These ratios' are working Capital to Total Assets; Retained Earnings to Total Assets; Earnings before Interest and Taxes to Total Assets & Equity to Total Liabilities. Using Z Score model quantitative analysis of financial performance of Indian commercial banks was carried out and qualitative factors were ignored and interpretations drawn. The paper concluded that all banks included in the sample have sound financial position, though private bank's Z score value is better than public ones.

Keywords: Financial Position; Altman's Z Score model; Liquidity; Commercial Banks

INTRODUCTION

Sound financial health of a banks acts as a guarantee not only to its depositors but it is also significantly important for the various stake holders like shareholders, employees and economy as a whole. Therefore we can say that banking industry plays a crucial role in ensuring the stability of an economy as banks are regarded as the central of any countries financial system. The stable and sound position of banks creates an environment of high growth and leads to the development of an economy. Nowadays, the assessment of financial performance of banks has become serious issue due to the failure of businesses, scams & frauds, increasing risk, high competition and liability to fulfill the regulatory requirements; all these factors affect the banking operations and therefore the financial performance of banks.

According to RBI, (as per a Report on Trend and Progress of Banking in India for the year ended June 30, 2017 submitted to the Central Government in terms of Section 36(2) of the Banking Regulation Act, 1949), "Developing Robust Accounting Standards (IFRS converged Ind AS) is the need of the hour. International Financial Reporting Standards (IFRS) draw upon the lessons learned from the global financial crisis and attempt to close gaps in accounting practices. In India, the need for uniformity in identification of nonperforming assets (NPAs) at the system level has imparted urgency to the institution of the IFRS converged Indian accounting standards (Ind AS). Banks are required to make provisions for expected credit loss (ECL) from the time a loan is originated, rather than waiting for 'trigger events' to signal imminent losses. Recognising and providing for actual and potential loan losses at an early stage in the credit cycle could potentially reduce procyclicality and foster financial stability. As overall provisions are expected to increase significantly on initial application of Ind AS effective April 1, 2018, the Reserve Bank has introduced a transitional arrangement, consistent with the Basel Committee provisions, to give banks time to build their capital. The Reserve Bank has adopted Basel III norms for implementation in a phased manner. Apart from an improved capital framework and liquidity ratios like the liquidity coverage ratio (LCR) and the upcoming net stable funding ratio (NSFR), the Reserve Bank has also been aligning the regulatory and supervisory frameworks for NBFCs, all India financial institutions (AIFIs) and co-operative banks with that of commercial banks with the objective of eschewing regulatory arbitrage.³ Moreover, the Ind AS standards prescribed for commercial banks, have been made mandatory for both AIFIs and NBFCs from April 2018".

Further the report said, "Although among the fastest growing large economies of the world, the Indian economy has been undergoing some slowdown by its own historical record during 2017-18, partly reflecting the transitory effects of the implementation of the goods and services tax (GST) from July 2017. Macroeconomic

stability remains entrenched though, with inflation remaining moderate, the current account deficit contained well within sustainable limits and the fiscal deficit on the path of consolidation.

During the first-half of 2017-18, however, a modest pick-up in bank credit has occurred alongside the improvement in transmission that was observed post-demonetisation. Growth in gross advances of scheduled commercial banks (SCBs) improved to 6.2 per cent at end September 2017 from 5.0 per cent at end-June 2017 due to improved credit delivery by both PSBs as well as private sector banks (PVBs)".

Although the central bank of the country is playing its part to create a safe banking network by strengthening the regulatory structure of banking in the country amidst the growing banking operations it becomes crucial to carefully watch the financial performance of banks to promote stability, profitability and efficiency in the banking sector. The present study analyzes the financial position of large public sector and private sector banks by calculating the Z- values, which predict the financial status of the banks.

LITERATURE REVIEW

Sanesh (2016) analysed the Altman Z-score of NIFTY 50 companies excluding banks and financial companies. The score predicted the probability of default by the companies based on the financial distress as per the current financial statistics of the company.

Mizan and Hossain's (2014) study was conducted to assess the financial health of cement industry of Bangladesh. The study revealed that amongst the five firms, two firms were financially sound as they had higher Z score than the benchmark (2.99). Another firm was in the grey area i.e. the firm was financially sound, but management was required to pay special attention to improve the financial health of the organization. The remaining two firms were at serious risk of financial crisis.

Vikas Tyagi (2014) in his study investigated the financial health of logistic industry in India using Z score analysis. It revealed that Indian logistic industry was satisfactorily healthy industry. Further it found that it is good that average Z score value increased from 2006 to 2010 (2.54 to 3.01) when global recession hit the Indian economy indicating the overall performance of Indian logistic industry to be good.

Kumari's (2013) in her paper predicted the bankruptcy for MMTC based on Altman's model of the Z score and concluded that the overall financial health of MMTC was good, and it can be said as an investor friendly company.

Ramana Reddy and Hari Prasad Reddy (2013) in his study using Z score analysis showed the poor financial performance and bankruptcy of Chittoor co-operative sugars Ltd. Comparatively the financial performance of Sri Venkateswara Sugars Factory Ltd. was better.

Alkhatib and Al Bzour (2011) studied to report the effect of financial ratios in bankruptcy prediction in Jordanian listed companies through the use of Altman and Kida models. Among others, corporate bankruptcy prediction model developed by Altman in 1968 is the most accepted and widely used tool and this model is used in different countries for predicting bankruptcy. They concluded that the Jordanian listed companies should at least apply one of these models with high credibility for predicting corporate bankruptcy.

Mizan, Amin, and Rahman (2011) conducted a study for the prediction of bankruptcy of the pharmaceutical industry in Bangladesh. They applied Altman Z-score Model for this purpose on a sample of six leading companies of this industry. Their study revealed some valuable findings like, two firms were found financially sound having no possibility of bankruptcy in the near future and other companies were found to be unsatisfactory and they had a significant chance of facing financial crisis in the near future. They also declared that market value of equity of most of the firms is not reflected in the fundamentals of the respective companies.

Ramaratnam and Jayaraman (2010) measured financial soundness of Indian steel industry by using Z score model. The study was based on a period of five years (2006-2010) of five firms of the Indian steel industry. Their study reported that all the selected companies were financially sound during the study period.

Gerantonis Vergos and Christopoulos (2009) examined whether Z-score models can predict bankruptcies for a period up to three years earlier. Study concluded that the Altman model performed well in predicting failures and its results can also be used by company management for financing decisions, by regulatory authorities and by portfolio managers in stock selection.

Chowdhury and Barua (2009) applied Z score model to the Z category shares traded in DSE to analyse the financial distress risk of shares of each of 53 companies' for the years 2000-2005 to calculate Z-score. They

remarked that the Altman's Z score model, though may not be fully applicable for companies in Bangladesh, yet proves its strong validity and correctness in predicting distressful status of the Z category companies.

Al-Rawi, Kiani and Vedd (2008) applied Altman z-score analysis to predict a firm's insolvency. They have remarked that since the firm has increased its debt quotient it may be facing bankruptcy in the near future.

ALTMAN Z-SCORE MODEL

The Z-score formula was published in 1968 by Edward I. Altman for predicting bankruptcy. This formula for Altman Z-Score is helpful in calculating and predicting the probability that a company will go into bankruptcy within two years. The Altman Z-Score is characterized as a linear combination of 4-5 common business ratios which are weighted by coefficients.

The Altman Z-Score is a linear financial model that is used to predict the likelihood of corporate bankruptcy has three variation of the model. The original version, created in 1968, was intended for only large public manufacturing companies. In 1983, two other models were developed for private manufacturing companies (model A) and private general firms and service companies (model B)

FORMULA FOR Z-SCORE

Original for Large Public Manufacturers

$$Z\text{-score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.64X_4 + 0.999X_5$$

Model A for Private Manufacturers

$$Z\text{-score} = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$$

Model B for Private General Firms and Services

$$Z\text{-score} = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

4-factor model of the Altman Z-score (for a private non-manufacturer):

$$Z\text{-score} = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Where,

X_1 = Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings Before Interest and Taxes / Total Assets

X_4 = Equity / Total Liabilities

X_1 = Current Assets minus Current Liabilities to Total Assets ratio estimates company's ability to cover financial obligations.

X_2 = Retained Earnings to Overall Assets Ratio measures how much part of profit is invested in the business as compared to Total Assets.

X_3 = Earnings before Interest & Taxes (EBIT) to Total Assets ratio depict the managerial efficiency in terms of profitability of the business.

X_4 = The market value of capital to Total Liability ratio expresses the financial leverage i.e., how many equity and liability are used to finance the asset of the company

ZONES OF DISCRIMINATION

$Z > 2.6$ – "Safe" Zone

$1.1 < Z < 2.6$ – "Grey" Zone

$Z < 1.1$ – "Distress" Zone

The Altman's Z score model shows that institutions that have Z score value lesser than 1.1 obviously will drop in non-insolvent segment. Banks having Z score less than 2.6 will fall in the Grey segment, which is also known zone of ignorance and finally the value above 2.6 is the safe zone.

METHODOLOGY

Present study is an exploratory one in which analysis of the financial performance and prospective bankruptcy of five large public sector banks and five large public sector banks based on assets held has been done.

Secondary data covering a period of five year from (2013-2017) has been used for the study. The data was collected from annual report of banks, online publications, moneycontrol.com website and valueresearch.com website.

The five public sector banks viz., Bank of Baroda (BOB), Punjab National Bank (PNB), Canara Bank, State Bank of India (SBI) and Union Bank of India (UBI) and five private sector banks included Axis Bank, Yes Bank, HDFC Bank, ICICI Bank and Kotak Mahindra Bank. The analysis has used Z – Score (model B) for service industry given by Altman to analyze the financial health of the banks and based on this model financial interpretations have been done of the respective banks individually.

DATA ANALYSIS AND INTERPRETATION

The present paper attempted to assess the financial performance and health of selected Indian Public and private sector banks using Altman's Z score model. Z score values have been computed for a period of 5 years from 2013 to 2017 (shown in the Appendix at the back). Further, average of 5 years Z score values has been calculated to determine the financial health of the selected public and private banks. Table -1 below shows that average Z Score value of all the selected public and private sector banks of the sample is above the safe zone value of 2.66, so it can be said that there is no threat to the banks landing in financial distress zone in immediate future and all the banks enjoy sound financial health. The below table also shows that ICICI bank scored highest Z- score value as compared to all other selected banks, therefore it enjoys healthiest financial position.

Table -1

Z-score(2013-2017) of Average Public and private banks	
SBI	4.953281904
BOB	5.377846057
PNB	5.377846057
UBI	5.011088052
CANARA	4.83528836
ICICI	6.761718259
HDFC	4.946856798
AXIS	6.75698877
KOTAK	4.985757057
YES	4.327881335

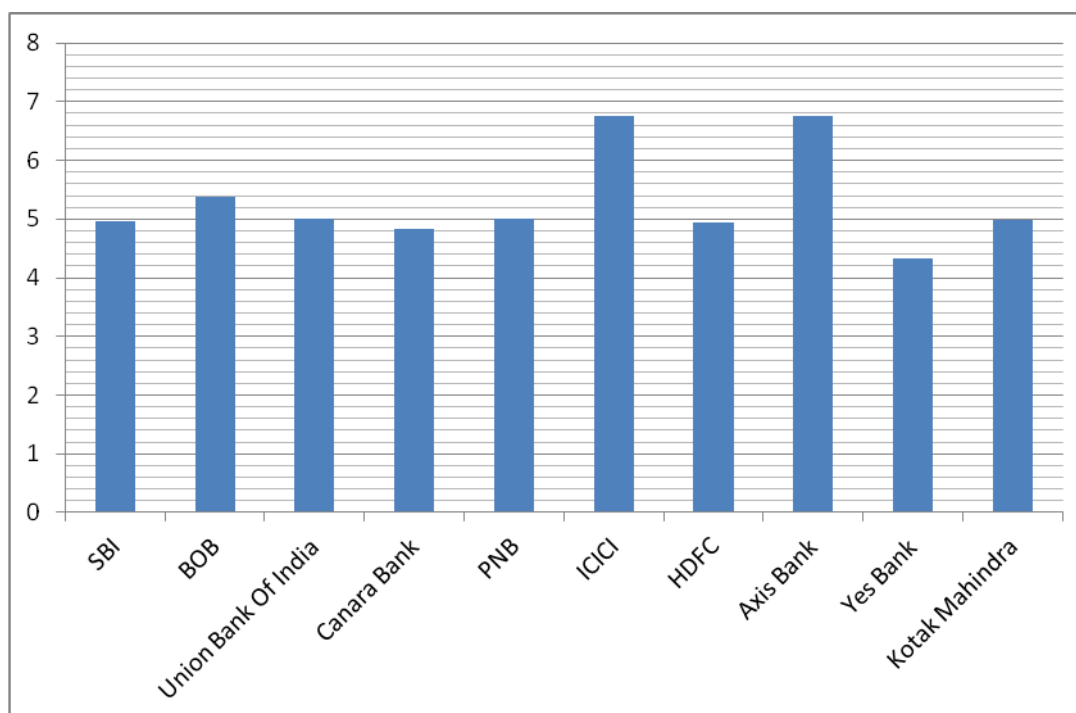


Table 2 below presents the Z-score of public sector banks and predicts that banks are not going to become insolvent because their Z score value is more than 2.60 and therefore their financial position is sound.

Over the last five years, it can be said that the Z-score value of public sector banks does fluctuate but these fluctuations are not very high much. Further, SBI showed a dip in the Z score value followed by Punjab National Bank in 2017. In case of SBI, it may be because of its merger with its small associated banks, and reported a big jump in its bad assets in June quarter, though lowest Z score value amongst public sector bank is of Canara bank. Higher Z score value indicates that bank is holding a strong and healthy financial position.

Table-2

Z-score (2013-2017) for Public Sector Banks					
YEAR	2017	2016	2015	2014	2013
SBI	4.537061335	5.016269753	4.834812775	5.054538451	5.323727207
BOB	5.365217953	5.372627936	5.479919315	5.472420674	5.199044408
PNB	4.993610449	5.106023205	5.032389804	4.975832408	4.902731237
UBI	5.02212765	5.194012523	4.998651627	4.884347652	4.95630081
CANARA	4.90944028	4.883026194	4.810667897	4.875841906	4.697465523

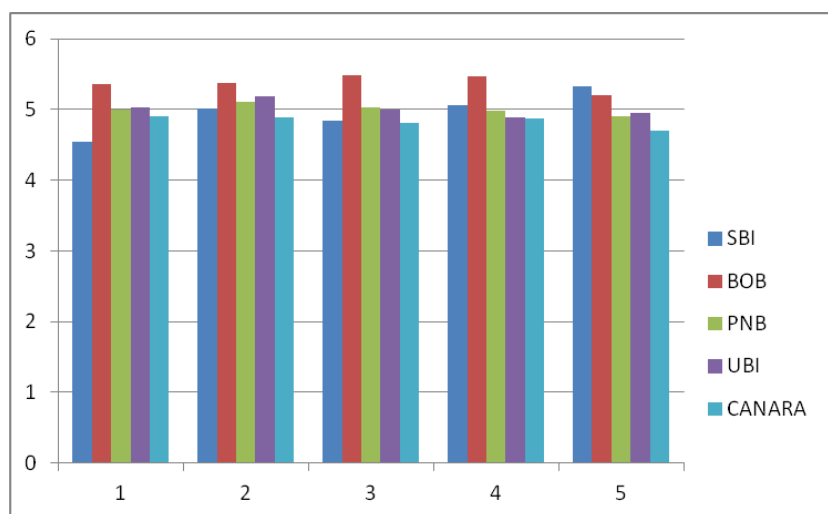


Table-3

Z-score (2013-2017) for Private Sectors Banks					
YEAR	2017	2016	2015	2014	2013
ICICI	6.888532547	6.827546833	6.795656536	6.674972265	6.621883115
HDFC	5.062245855	5.248111111	4.897761339	4.878272996	4.647892691
AXIS	6.689086044	6.845951323	6.765788819	6.744862039	6.739255623
KOTAK	5.474218153	4.998863474	4.919081576	4.963545664	4.573076417
YES	4.791180218	4.722537466	4.390880929	4.065130896	3.669677165

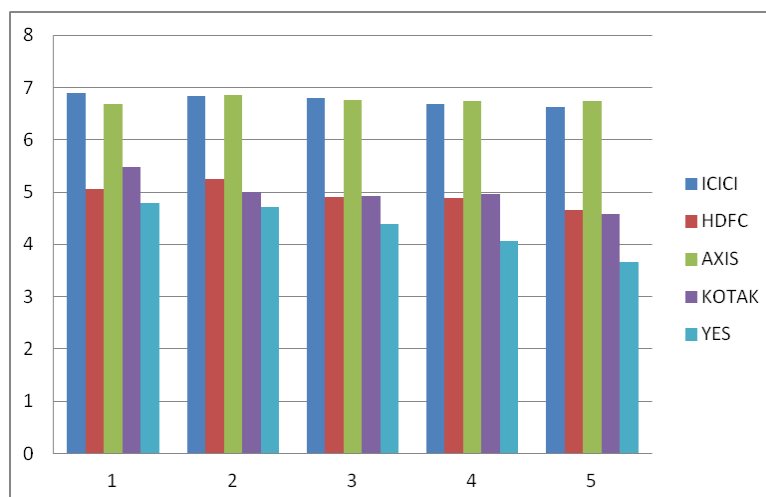


Table 3 above shows that no private banks would going to be insolvent as banks scored Z-score value more than 2.6. It can be seen above that ICICI bank Z score value followed by Axis bank Z score value. Therefore it can

be said in the private bank sector ICICI banks enjoys sound and healthy financial position. Lowest Z score value is of Yes Bank, but over the period of 5 years it is also seen to improve. Currently it can also be seen that in case of all banks included in the sample, the Z score is showing a improving trend showing that financial health of these banks is also improving.

Table-4

Ranking of Banks on the bases of Z-Score value					
S. No.	BANKS	Average Z-score 2017	Z-score Rank 2017	Average Z-score 2016	Z-score Rank 2016
1	SBI	4.953281904	7	5.05733	4
2	BOB	5.377846057	3	5.3811	3
3	PNB	5.002117	5	5.0042	6
4	UBI	5.011088052	4	5.02478	5
5	CANARA	4.83528836	9	4.8697	7
6	ICICI	6.761718259	1	6.7301	2
7	HDFC	4.946856798	8	4.1981	10
8	AXIS	6.75698877	2	6.7614	1
9	KOTAK	4.985757057	6	4.8636	8
10	YES	4.327881335	10	4.4924	9

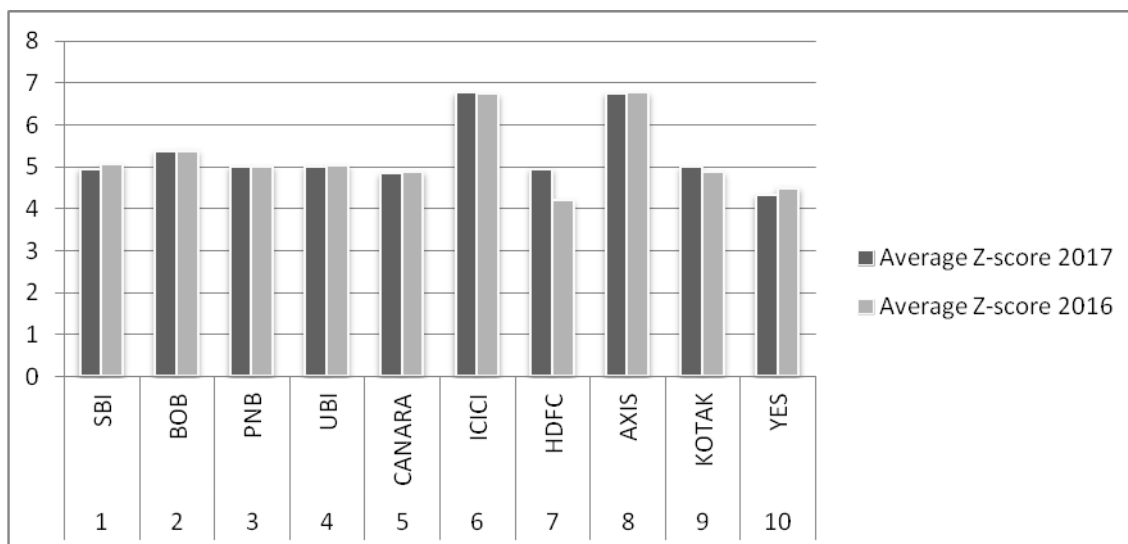


Table 4 shows the comparative analyses of Z-score of selected Indian commercial banks in 2016 and 2017. A Comparative analysis of 2016 and 2017 the Z-score values of all banks (both public sector and private sector) had increased except SBI bank, Canara bank and Yes bank. The highest Z- Score of 2017 is ICICI bank (6.76) followed by 2016 is Axis bank (6.75). The lowest Z-Score value of 2017 is YES Bank (4.32) and 2016 is HDFC Bank (4.19). It can also remarked that public sector banks have lower Z-score value as compared to private banks.

CONCLUSION

In the present study, attempt has been made to find whether the financial performance of selected Indian commercial bank is sound and healthy or not. The analysis of financial position of banks is necessary for bankers, financial analysts and other stakeholders. As seen in the previous studies too, Z-score model is helpful in predicting the financial status of companies and the level of risk of insolvency faced by firms. Nobody can deny the fact that stronger financial position can make banks more stable financially and establish a safe position that acts as a base for long term survival, best possible utilization of resources and earning, and ensure optimum capital for absorbing risk and financial crisis. The present study is undertaken to provide an effective framework to bankers and other stakeholders or users in making investment in banks.

In the study, amongst the sample of 10 banks it is observed that ICICI bank's financial position is better than all selected banks. This means that the financial status of private bank is strong and healthy as compared to their public counterparts. In 2016 AXIS Bank had highest Z- score value and lowest Z-score value was of HDFC Bank. In 2017 ICICI Bank had highest Z- score value and lowest Z-score value was of YES Bank. In this study

we can also conclude that the overall trend of Z-score for SBI bank is decreasing whereas other banks in the sample are showing increasing position. It can also be observed that retained earnings to overall assets ratio which measures how much part of profit is invested back in the business, in case of public sector banks has reduced with the exception of very slight increase in case of PNB and Canara bank in 2017 as compared to the previous year, whereas in case of private sector banks this ratio has increased in all banks except for a very slight dip in case of Axis bank. This shows that private banks are relying more on retained earnings and less on borrowings for funding new investments as their ratio has increased from previous whereas in case of public sector banks the ratio has reduced or shown not much change from previous year showing more reliance on borrowed money. Private sector banks generally are seen to have higher retained earnings to total asset ratio than public sector banks for the research period showing their dependence more on retained earnings rather than borrowed money. As lower the ratio, the more a business is funding assets by borrowing instead of through retained earnings which, again, increases the risk of bankruptcy if the firm cannot meet its debt obligations.

Further we can also conclude that by applying the Altman Z-score tool for the last five years, all the banks have been found to be solvent and enjoying a sound and healthy financial position. The financial performances of private sector banks have been observed financially stronger and healthier as compared to public sector ones. The EBIT to Total Assets ratio that shows the overall profitability of the bank has increased in all the selected banks from previous year in 2017, except in case of SBI and Axis bank, depicting increase in managerial efficiency in terms of profitability of the bank. Working capital to total asset ratio is also highest of Bank of Baroda in the public sector banks and Axis bank in case of private sector banks. The market/book value of capital to total liability ratio shows does the company has the ability to pay off its interest charges and other obligations from the prevailing market value of capital. Basically it determines that, if a firm would be becoming insolvent, how much the company's market value can decline before liabilities exceed assets on the financial statements. In other words, a robust market capitalization can be interpreted as the market's confidence in the company's concrete financial position. In the selected sample of banks, it is seen that private banks has a better ratio of capital to total liabilities than public banks. Kotak bank has the highest ratio indicating sound solvency position of the bank.

The Z-score can be used in predicting the risk and level of distress in various sectors. This study can be extended in future, as the financial performance of banks is a matter of concern because it affects the other operations too indicating the high liquidity position or ability to fulfill short term obligations of the banks. This ratio is important for the managers and owners, as a low ratio indicates possible lack of funds to continue normal day today operations.

In the light of the findings it can be said that public banks should make more efforts for strengthening their financial position, rather Indian banks should focus on profit-generating activities for better financial performance because only banks with high earnings/profit can be easily capable of absorbing the risk and can compete with other banks. The Indian bank should follow BASEL capital regulation norm more strictly as it may help in increasing the efficiency of operation of banking sectors along with strong capital base. In order to enhance the financial position of bank, banks need to regularly analyze its financial statement and take steps towards presenting the statement more truly and fairly.

LIMITATIONS

- The data for this study is mostly collected from company annual reports and websites like money control.com and is secondary data in nature, so the chances of error in published may hold true to this study.
- The period of study is limited to 5 years may also act as a constraint, and due to continuous change in environment, what is relevant today may be irrelevant tomorrow.
- The data for this study has only considered 5 public sector and 5 private sector banks based on the assets held by them. Therefore it can be said that this study has mainly considered the big banks only and have not analyzed the financial health of smaller banks, which may be facing financial crunch.

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APPENDIX

TableA1: FINANCIAL DATA OF BANKS (Taken from balance sheet and trading account)					
Table A1 (Cont.)			(IN CR.)		
	2017	2016	2015	2014	2013
SBI					
Current Assets	1897057.75	1771576.48	1543723.2	1385924.3	1208328.8
Current Liabilities	155235.19	159875.57	137698.05	96412.96	95455.07
Total Assets	2705966.3	2259063.03	2048079.8	1792234.6	1470806
Net Sales/Revenue	175518.24	163685.31	152397.07	136350.8	119657.1
EBIT	50847.9	43257.81	38913.5	32109.24	31081.72
Shares	797.35	776.28	746.57	746.57	684.03
Reserves and Surplus	155903.06	143498.16	127691.65	117535.68	98199.65
Total Liabilities	2705966.3	2259063.03	2048079.8	1792234.6	1470806
WC	1741822.56	1611700.91	1406025.15	1289511.34	1112873.73
Z-Score	4.537061335	5.016269753	4.834812775	5.054538451	5.323727207
X1= Working Capital/Total Assets	0.643697063	0.713437779	0.686508968	0.719499188	0.756642093
X2= Retained Earnings/Total Assets	0.057614561	0.063521096	0.062347009	0.065580522	0.066765875
X3= Earnings before Interest and Taxes/ Total Assets	0.018791032	0.019148563	0.018999992	0.017915757	0.02113244
X4= Value of Equity/Total Liabilities	0.000294664	0.000343629	0.000364522	0.000416558	0.000465072

Table A1 (Cont.)		(IN CR.)			
	2017	2016	2015	2014	2013
Bank Of Baroda					
Current Assets	559486.51	544672.18	589793.9	540657.7	423288.6
Current Liabilities	22285.56	23667.92	22329.4	17811.5	14703.38

Total Assets	694875.42	671376.48	714988.55	659504.53	547135.44
Net Sales/Revenue	42199.93	44061.28	42963.56	38939.71	35196.65
EBIT	10975.07	8815.57	9915.1	9353.22	9073.78
Shares	462.09	462.09	443.56	430.68	422.52
Reserves and Surplus	39841.16	39736.89	39391.79	35555	31546.92
Total Liabilities	694875.42	671376.48	714988.55	659504.53	547135.44
WC	537200.95	521004.26	567464.5	522846.2	408585.22
Z-Score	5.365217953	5.372627936	5.479919315	5.472420674	5.199044408
X1= Working Capital/Total Assets	0.773089585	0.776023998	0.793669353	0.792786366	0.746771622
X2= Retained Earnings/Total Assets	0.057335688	0.059187194	0.055094295	0.053911684	0.057658338
X3= Earnings before Interest and Taxes/ Total Assets	0.015794299	0.013130591	0.013867495	0.014182192	0.016584157
X4= Value of Equity/Total Liabilities	0.000664997	0.000688273	0.000620374	0.000653036	0.00077224

Table A1 (Cont.)		(IN CR.)			
	2017	2016	2015	2014	2013
Punjab National Bank (PNB)					
Current Assets	527331.86	504321.83	448499.77	403214.66	345623.17
Current Liabilities	16016.21	16273.94	17204.89	15093.44	15019.15
Total Assets	720330.55	667390.46	603333.6	550419.92	478877.04
Net Sales/Revenue	47275.99	47424.35	46315.36	43223.25	41893.33
EBIT	15973.05	12216.35	11954.75	11384.45	10907.37
Shares	425.59	392.72	370.91	362.07	353.47
Reserves and Surplus	41421.39	37917.42	38708.61	35533.25	32323.43
Total Liabilities	720330.55	667390.46	603333.6	550419.92	478877.04
WC	511315.65	488047.89	431294.88	388121.22	330604.02
Z-Score	4.993610449	5.106023205	5.032389804	4.975832408	4.902731237
X1= Working Capital/Total Assets	0.709834742	0.731277894	0.714853076	0.70513658	0.690373504
X2= Retained Earnings/Total Assets	0.057503309	0.056814447	0.064157889	0.064556621	0.067498392
X3= Earnings before Interest and Taxes/ Total Assets	0.022174611	0.018304652	0.019814494	0.020683209	0.022776974
X4= Value of Equity/Total Liabilities	0.000590826	0.000588441	0.000614768	0.000657807	0.000738123

Table A1 (Cont.)		(IN CR.)			
	2017	2016	2015	2014	2013
Union Bank of India					
Current Assets	336661.06	311547.68	284841	257449.25	228551.35
Current Liabilities	9110.79	8127.33	9625.15	8313.29	7005.77
Total Assets	452704.44	404695.9	381615.93	353780.9	311860.81
Net Sales/Revenue	32659.98	32198.8	32083.96	29349.39	25124.7
EBIT	7430.09	5722.02	5823.47	5218.1	5582.7
Shares	687.44	687.44	635.78	741.31	707.7
Reserves and Surplus	22747.76	22203.77	19125.1	17734.05	16588.39
Total Liabilities	452704.44	404695.9	381615.93	353780.9	311860.81
WC	327550.27	303420.35	275215.85	249135.96	221545.58
Z-Score	5.02212765	5.194012523	4.998651627	4.884347652	4.95630081

X1= Working Capital/Total Assets	0.723541103	0.749749009	0.721185434	0.704209752	0.710398912
X2= Retained Earnings/Total Assets	0.05024859	0.05486532	0.050116094	0.050127212	0.053191647
X3= Earnings before Interest and Taxes/ Total Assets	0.016412673	0.014139061	0.015260029	0.014749524	0.017901255
X4= Value of Equity/Total Liabilities	0.001518518	0.001698658	0.001666021	0.002095393	0.002269282

Table A1 (Cont.)		(IN CR.)			
	2017	2016	2015	2014	2013
Canara Bank					
Current Assets	426085.23	403453.38	395704.93	358452.04	288347.06
Current Liabilities	15055.1	14692.7	16629.66	14348.29	11325.45
Total Assets	583519.44	552960.78	548000.56	491921.85	412342.61
Net Sales/Revenue	41387.64	440022.14	43750.04	39547.61	34077.94
EBIT	8913.89	7146.65	6950	6796.19	5890.01
Shares	597.29	542.99	475.20	461.26	443
Reserves and Surplus	33088.25	31060.21	31384.04	29158.85	24434.79
Total Liabilities	583519.44	552960.78	548000.56	491921.85	412342.61
WC	411030.13	388760.68	379075.27	344103.75	277021.61
Z-Score	4.90944028	4.883026194	4.810667897	4.875841906	4.697465523
X1= Working Capital/Total Assets	0.704398349	0.7030529	0.691742487	0.699508977	0.671823875
X2= Retained Earnings/Total Assets	0.056704623	0.056170729	0.057270087	0.059275371	0.059258465
X3= Earnings before Interest and Taxes/ Total Assets	0.015276081	0.012924334	0.012682469	0.013815589	0.014284262
X4= Value of Equity/Total Liabilities	0.001023599	0.000981968	0.000867152	0.000937669	0.001074349

Table A1 (Cont.)					
	2017	2016	2015	2014	2013
ICICI					
Current Assets	602479.69	552706.39	454823.74	412941.64	360754
Current Liabilities	34245.16	34726.44	31719.86	34755.55	32133.6
Total Assets	771791.45	720695.1	646129.29	594641.58	536794.68
Net Sales/Revenue	54156.28	52739.43	49091.14	44178.15	40075.6
EBIT	26486.74	23863.53	19719.91	16594.57	13199.23
Shares	1165.11	1163.17	1159.66	1155.04	1153.64
Reserves and Surplus	95737.57	85748.24	79262.26	72051.71	65547.84
Total Liabilities	771791.45	720695.1	646129.29	594641.58	536794.68
WC	568234.53	517979.95	423103.88	378186.09	328620.4
Z-Score	6.888532547	6.827546833	6.795656536	6.674972265	6.621883115
X1= Working Capital/Total Assets	0.943159644	0.937170185	0.930259005	0.915834233	0.910926559
X2= Retained Earnings/Total Assets	0.124045906	0.118979913	0.122672445	0.121168301	0.122109705
X3= Earnings before Interest and Taxes/ Total Assets	0.043962876	0.043175781	0.043357257	0.040186236	0.036587896
X4= Value of Equity/Total Liabilities	0.001509618	0.001613956	0.00179478	0.001942414	0.002149127

Table A1 (Cont.)					
	2017	2016	2015	2014	2013
HDFC Bank					
Current Assets	645750.11	541616.64	420922.31	367708.51	286015.22
Current Liabilities	56709.32	36725.13	32484.46	41344.4	34864.17
Total Assets	863840.19	708845.57	590503.07	491599.5	400331.9
Net Sales/Revenue	69305.96	60221.45	48469.9	41135.53	35064.87
EBIT	32624.81	25732.39	21363.55	17404.47	14360.09
Shares	512.51	505.64	501.3	479.81	475.88
Reserves and Surplus	88949.84	72172.13	61508.12	42998.82	35738.26
Total Liabilities	863840.19	708845.57	590503.07	491599.5	400331.9
WC	589040.79	504891.51	388437.85	326364.11	251151.05
Z-Score	5.062245855	5.248111111	4.897761339	4.878272996	4.647892691
X1= Working Capital/Total Assets	0.681886299	0.712272929	0.65780835	0.663882103	0.627357075
X2= Retained Earnings/Total Assets	0.10297025	0.101816437	0.104162236	0.087467176	0.089271577
X3= Earnings before Interest and Taxes/ Total Assets	0.037767182	0.036301828	0.036178559	0.035403759	0.035870461
X4= Value of Equity/Total Liabilities	0.000593293	0.000713329	0.000848937	0.000976018	0.001188714

Table A1 (Cont.)			(IN CR.)		
	2017	2016	2015	2014	2013
Axis Bank					
Current Assets	468927.41	399938.24	327075.25	267286.2	224467.5
Current Liabilities	26295.47	15108.77	15055.67	13788.89	10888.11
Total Assets	601467.67	525467.62	461932.39	383244.89	340560.66
Net Sales/Revenue	44542.16	40988.04	35478.6	30641.16	27182.57
EBIT	17584.52	16103.61	13385.44	11456.09	9303.13
Shares	479.01	476.57	474.1	469.84	467.95
Reserves and Surplus	55283.53	52688.34	44202.41	37750.64	32639.91
Total Liabilities	601467.67	525467.62	461932.39	383244.89	340560.66
WC	442631.94	384829.47	312019.58	253497.31	213579.39
Z-Score	6.689086044	6.845951323	6.765788819	6.744862039	6.739255623
X1= Working Capital/Total Assets	0.943924221	0.962222242	0.953968789	0.948411515	0.951493602
X2= Retained Earnings/Total Assets	0.091914383	0.100269432	0.095690216	0.098502657	0.095841692
X3= Earnings before Interest and Taxes/ Total Assets	0.029236019	0.030646246	0.028977054	0.029892349	0.027317101
X4= Value of Equity/Total Liabilities	0.000796402	0.000906945	0.001026341	0.001225952	0.001374058

Table A1 (Cont.)			(IN CR.)		
	2017	2016	2015	2014	2013
Kotak Mahindra Bank					
Current Assets	167978.14	139447.98	74384.28	60993.85	54355.84
Current Liabilities	8450.68	8678.96	4857.97	3333.82	2789.81
Total Assets	214589.96	192259.79	106012.07	87585.34	83693.69

Net Sales/Revenue	17698.93	16384.18	9719.87	8767.12	8042.4
EBIT	5984.81	4041.09	2997.46	2577.15	2156.61
Shares	920.45	917.19	386.18	385.16	373.3
Reserves and Surplus	26695.62	23041.87	13754.91	11889.93	9073.65
Total Liabilities	214589.96	192259.79	106012.07	87585.34	83693.69
WC	159527.46	130769.02	69526.31	57660.03	51566.03
Z-Score	5.474218153	4.998863474	4.919081576	4.963545664	4.573076417
X1= Working Capital/Total Assets	0.743405982	0.680168328	0.655833906	0.658329693	0.61612805
X2= Retained Earnings/Total Assets	0.124402931	0.119847577	0.129748528	0.135752513	0.108414983
X3= Earnings before Interest and Taxes/ Total Assets	0.027889515	0.021018904	0.028274705	0.029424445	0.025767892
X4= Value of Equity/Total Liabilities	0.004289343	0.004770576	0.003642793	0.00439754	0.004460312

Table A1 (Cont.)		(IN CR.)			
	2017	2016	2015	2014	2013
Yes Bank					
Current Assets	151811.2	115954.23	89246.21	67771.96	55898.54
Current Liabilities	11525.33	8098.3	7094.18	6387.75	5418.72
Total Assets	215059.92	165263.41	136170.41	109015.79	99104.13
Net Sales/Revenue	16424.64	13533.44	11572.01	9981.35	8294
EBIT	5837.52	4302.5	3249.58	2687.97	2141.68
Shares	456.49	420.53	417.74	360.63	358.62
Reserves and Surplus	21597.57	13366.07	11262.25	6761.11	5449.05
Total Liabilities	215059.92	165263.41	136170.41	109015.79	99104.13
WC	140285.87	107855.93	82152.03	61384.21	50479.82
Z-Score	4.791180218	4.722537466	4.390880929	4.065130896	3.669677165
X1= Working Capital/Total Assets	0.652310621	0.652630428	0.603303096	0.563076321	0.509361416
X2= Retained Earnings/Total Assets	0.100425826	0.08087737	0.082707029	0.062019548	0.054983077
X3= Earnings before Interest and Taxes/ Total Assets	0.027143691	0.026034196	0.023864069	0.024656703	0.021610401
X4= Value of Equity/Total Liabilities	0.002122618	0.002544604	0.003067774	0.003308053	0.003618618

ANALYSIS OF EARLY ATTRIBUTES IDENTIFICATION IN BIOPSY EXECUTION USING MACHINE LEARNING APPROACH

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ABSTRACT

In this paper, while classifying the Breast Cancer we have studied the performance criterion of machine learning Algorithms in classifying breast cancer. We have used various machine learning algorithms like as Logistic Regression, Naïve Bayes, Support vector machines, Decision trees, and Random Forest. We used multi class data sets i.e , WDBC and Breast tissue from UCI machine learning repository. For evaluating the experiments, we have created a web based tool developed using Python and Django. The focus of this research is to identify the best classifier concerning precision, correctness and specificity while recognising at the early stages of breast cancer

Keywords: Logistic Regression, Naive Bayes, SVM, Decision Tree, Random Forest, WDBC.

INTRODUCTION

Breast cancer has been found one of the prime causes of deaths among women. The main aim of this report is that one can ensure that the result set is of highest accuracy provided by the machine learning classifiers, using various cross sampling validation method on WDBC datasets. Methods which are taken into consideration are Naive Bayes, Random Forest, Logistic Regression, Support Vector Machine and Decision Tree. In the case of diseases like cancer it is very important that the accuracy of the result should be high and one cannot predicted as benign but in actual it is a case of malignant. Cancer is the principal cause of death worldwide, It is estimated by the WHO that 9.6 million deaths occurs in 2018. Breast cancer is considered as the most usual invasive women's cancer, with approximately 20,00,000 cases and nearly 627,000 deaths occurring worldwide every year.[1]

In many countries, with the arrival of the 20th century the breast cancer reports across the globe have increased tremendously. Resulting in the worldwide differences in Reproductive pattern Breast Cancer Ranking have been increasing prominently risking women's health concern. [5]. The methods used by Data mining in medical field is hitting the roof as a result of the various decision made by doctors. let us say if a doctor is having two years of physical experience and get 50 years of experience from the tool then that doctor will surely make the best decision. This is how this tool will help the medical practitioner Breast Cancer Wisconsin (Diagnostic) Data Set (WDBC) Features are computed from a digitized image of a fine needle aspirate (FNA) of a breast mass. They describe characteristics of the cell nuclei present in the image. The target feature records the prognosis (B for benign or M for malignant) If the cells are not cancerous, the tumor is benign. It won't invade nearby tissues or spread to other areas of the body. The tumor is a Malignant tumor that may invade its surrounding tissue or spread around the body. This tool will help us to find the benign and malignant result from the Fine Needle aspirate (FNA)reports the feature extraction and feature selection are done already and are available in the form of datasets at UCI Machine learning depository.[3]

RELATED WORK**A. MACHINE LEARNING ANALOGY**

There has been tremendous research and achievements in Machine Learning. One of the key concepts and technology of ML is used to uncover mammography images .This imaging technique provides a procuring and rigorous approach in classification of determining of breast cancer .In more specific terms it uses genome or phenotype for its processes. But the major drawback is that some of the images tends to leave 15% of breast cancer[3].Furthermore Softmax discriminant Classifier (SDC),Fuzzy C Means Clustering and Linear discriminant Analysis (LDA) [7] are best techniques for detection of breast cancer. In machine learning there are various algorithms used classifying means first comparison should be made with other elements using the same parameter. If we want to know different parameter concerned with Breast Cancer then we generally used Naive bayes.

Now, NBC are used with many model especially with different classifier to detect stages of forecasting. This prognostic technique for detecting Breast Cancer, the accuracy of which is predicted with the help of various sets of data from WDBC (Wisconsin breast cancer database). For example, in [9] the optimized learning vector method's performance was 96.7%, big LVQ method reached, SVM for cancer diagnosis accuracy is 97.13% is the highest one in the literature.

B. DATASETS

WDBC data set is having 569 instance consisting 32 attributes. First column contains the ID number, 2nd one is class to which that particular record has been diagnosed (M for malignant, B for benign). Rest columns contains information retrieved from computation of following 10 real valued features,

- a. Radius (Mean of distances from center to points on the perimeter)
- b. Texture (Standard deviation of grayscale values)
- c. Perimeter
- d. Area
- e. Smoothness
- f. Compactness ($\text{perimeter}^2 / (\text{area} - 1)$)
- g. Concavity
- h. Concave points
- i. Symmetry
- j. Fractal Dimension ("Coastline Approximation"-1)

**Note: Radius is mean of all the radii of a single FNA (Fine Needle Aspirate), Radius_se is standard error of radii, Radius_max is maximum radius.*

PROPOSED METHODOLOGY

Machine learning models:

C. NAIVE BAYES

It can be defined as probabilistic classifiers based upon bayes Theorem, It is examined as a strong independent assumption to the probability of a fixed decision. Considering the characteristics of the elementary Probability model. In supervised Learning Naive bayes classifier can be trained very productively, working a lot better in In situation of complex real world naive bayes is working very efficiently. One might used Naive bayes in the computer-aided diagnosis procedure [5]

D. SVM- SUPPORT VECTOR MACHINE

Support vector machine can be described as a critical classifiers generally known as Separating Hyper planes, It is a supervised learning algorithm that helps in analyzing the data which is used for classification and regression analysis. In two dimensional space, hyper planes is a line which divides one line in two parts, each of the classes will lay on either side.[6] Let us take an example and understand the separation of hyper planes, suppose we are having a plot of two label graph as shown below.

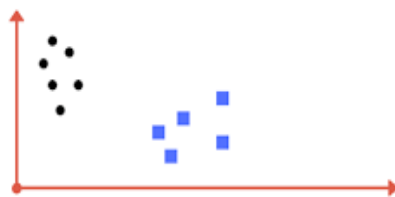


Fig 1: Draw line to separates blue square and black circle

Is this possible for me to construct a single line and make separation of classes, here we can see it is fairly distinguishes the two classes. Any point that is left of the line falls into black circle class and on the right goes to blue square class, that is separation of classes

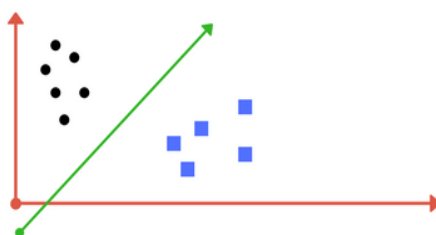


Fig 2: Sample cut to Separate into two classes

E. LR-LOGISTIC REGRESSION

The model is fitted using the logistic function, and used as a predictive analysis. It is used for explaining the relationship existing among dependent binary variables. Like all regression, logistic regression is a predictive analysis. The coefficient vector A is estimated using maximum-likelihood estimate [4].

F. DECISION TREES

Decision Tree can be described as a decision support rule which is shown in the flow chart like structure, which is similar to tree model of decisions and their possible results. Notably, decision tree classifier works sufficiently for both categorical and continuous dependent variables. Let us see detail into the workings of this algorithm, what we do in this algorithm is that we split the whole population into two homogeneous sets. All of this is performed on the basis of most dominant attributes/independent variables to make as many unique groups as possible.

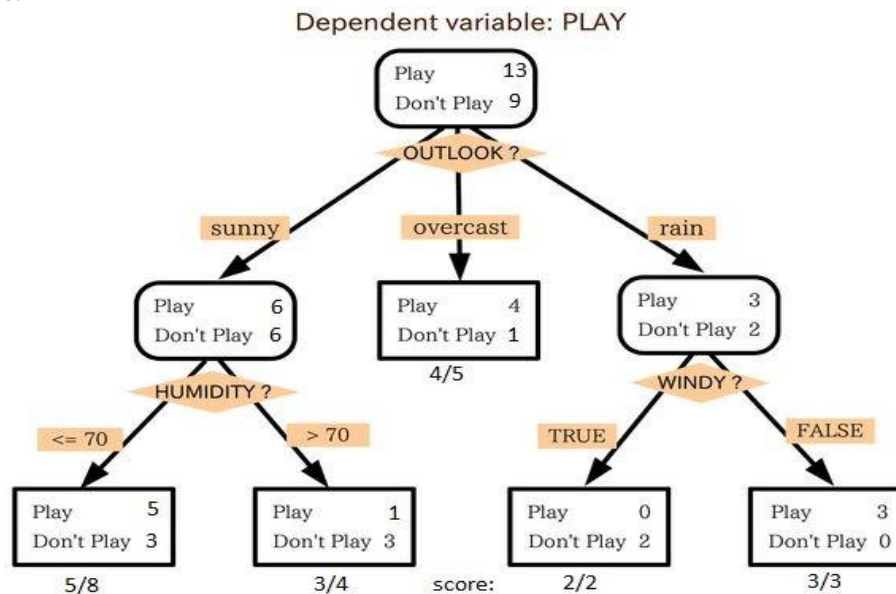


Fig 3: :Decision Tree Simplified

G. RANDOM FOREST

A Random Forest is built up of many decision trees, now we will understand how a single decision tree will classify on a simple problem. In random forest we are having result of many decision trees that is why this is known as forest. To classify a new object construct on attributes, every individual tree gives a classification for a particular, Or we can say that a tree votes for a specific class. Ultimately the forest will choose a tree with the highest number of votes among all the trees within the forest.

TOOLS & LIBRARIES

A. Main Libraries used:

Python Scikit-learn library has been used to train and test models:

- Scipy
- Pandas
- NumPy

B. Framework

The Python web server has been developed using Django Framework

Frontend: The web frontend has been developed using JavaScript library ReactJS.

C. LAYOUT

For layout purpose, Bootstrap CSS library has been used.

D. GRAPH PLOTTING

Javascript graph plotting library Plotly.js has been used to plot the precision-recall curve.

To Prepare the training and test datasets, original data has been split using random sampling. Method used for this purpose is train_test_split of the module model_selection provided by the S Scikit-learn library

DATA SAMPLING

Splitting of Original Datasets into Training and Test dataset. The size of Test Dataset is 20% i.e 114 of total dataset and rest 455 Dataset i.e 80% used for Training purposes. This ratio is Fixed for all five algorithms of machine learning and similarly we will change the ratio for Testing Purpose.

VARIABLES TAKEN

Radius	Texture	Perimeter	Area	Smoothness
Compactness	Concavity	Concave_points	Symmetry	Fractal_dimension
Radius_se	Texture_se	Perimeter_se	Area_se	Smoothness_se
Compactness_se	Concavity_se	Concave_points_se	Symmetry_se	Fractal_dimension_se
Radius_max	Texture_max	Perimeter_max	Area_max	Smoothness_max
Compactness_max	Concavity_max	Concave_points_max	Symmetry_max	Fractal_dimension_max

CONFUSION MATRIX TABLE

ML Algo.	True Negative	False Negative	False Positive	True Positive	Average Precision Score
NV	65	6	2	41	0.992
SVM	66	9	1	38	0.985
LR	65	4	2	43	0.985
DT	64	5	3	42	0.878
RF	66	5	1	42	0.989

True Negative= Predicted Benign+Actual Benign

False Negative= Predicted Benign+Actual malignant

False Positive=Predicted Malignant +Actual Benign

True Positive=Predicted Malignant+Actual Malignant

RESULTS

In the Results section we are selecting the 20% of the total datasets as you can see the training dataset and the testing datasets are split into two parts with different ratios. And implemented on all the five machine learning algorithms that i was described earlier. In this case training datasets are 455 that is 80% of total and testing datasets are 114 that is 20% of the total split using random sampling.

Average Precision Score** Average Precision is described as the mean of precision score after appropriate document is recovered, It is an estimation that combines recall and precision for ranked retrieval results.

For Naive Bayes

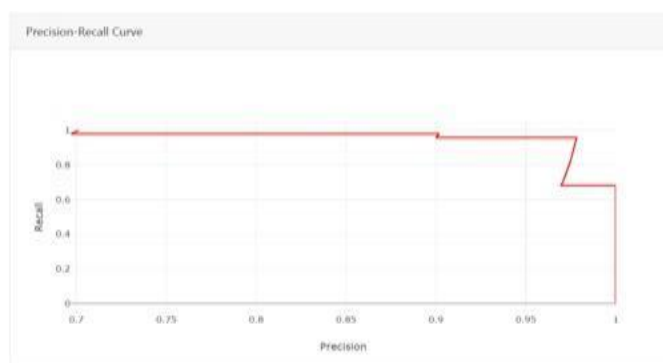


Fig 1.4: Precision recall Graph

For Random Forest:

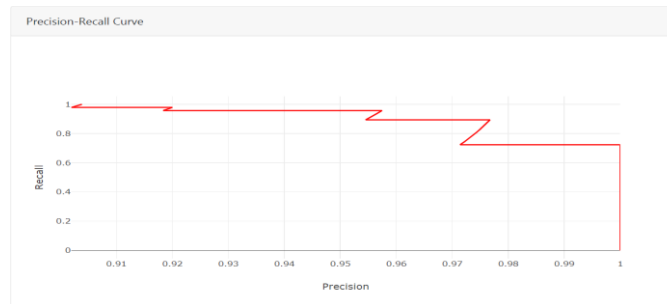


Fig 5: Precision recall Graph

For SVM

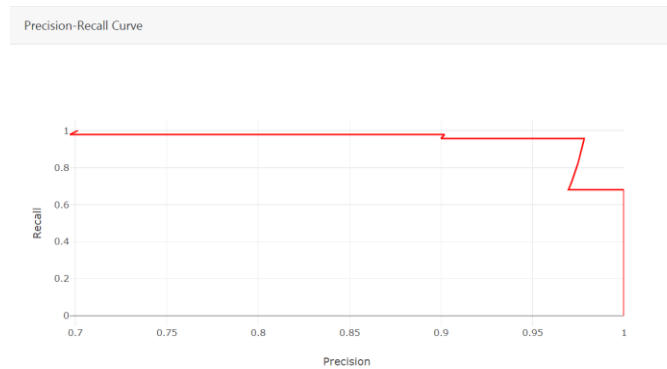


Fig 6: Precision recall Graph

For Decision Tree

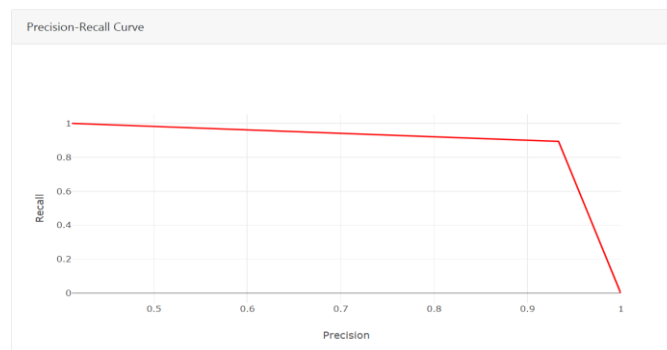


Fig 7: Precision recall Graph

For Logistic Regression

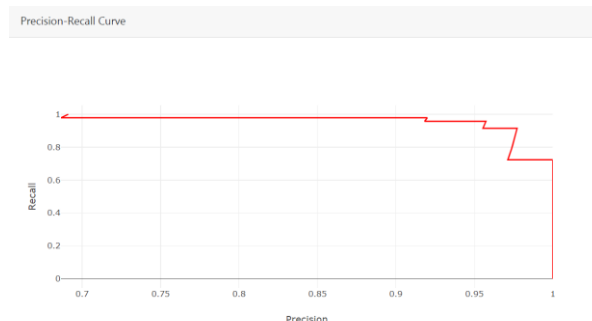


Fig 8: Precision recall Graph

RESULT AND CONCLUSION

We need development of more tools to leverage the power of Machine Learning by healthcare professionals, The community needs work to enable Professionals(not only from health care) improving their methods and consequently improving humankind. In this section we are going to conclude the whole project by taking in mind the confusion matrix The confusion matrix will tell the average precision score and this matrix will give result about the predicted benign , actual benign and predicted malignant, actual malignant. Here the main aim is that not a single person is left as if a person is malignant and it is predicted as benign then this tool is not so

efficient for the medical practitioner or for patient. To get rid of this problem, in the future we are going to implement this project in deep learning for high accuracy in the result as in this tool the detection of breast cancer using machine learning algorithms. In future we will use any of the architecture of deep learning for best accurate result.

Deep Learning is build on neural network, It is a part of wider family of machine learning methods, In deep learning the amount of data are the same but the performance of the deep learning is double than that of other learning Algorithms. That is why deep learning is also called hierarchical learning and the learning can be supervised, semi-supervised or unsupervised.

Deep learning architectures like deep belief networks deep neural networks, convolutional neural networks and recurrent neural networks. Deep learning is used in different fields namely social network filtering, computer vision, natural language processing, speech recognition, audio recognition, bioinformatics, material inspection, machine translation, board game programs drug design and medical image analysis, where the results set produced are comparable to and in few cases superior to human experts.[8]

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BLOCK CHAIN ENCRYPTION SCHEME FOR INTERNET OF THINGS

Arshi Fahim and Mohammed Danish

ABSTRACT

In the IoT networks, IoT gateways are considered an important component. The conventional gateway or router transferred the packets to the destination node which is the main functionality of the conventional gateway. The main purpose of the IoT gateways are similar to that of a conventional gateway but it contains some extra features. It guaranteed the connectivity of the heterogeneous network. In order to provide connectivity to small sensors or devices, short-range communication technology is necessarily required. Packets are transferred to the IoT gateway first by the nodes by which all short-range communication protocols are maintained by the IoT gateway. It is essential for the IoT gateway to provision wired communications and high-performance communication protocols such as Wi-Fi and LTE. Also support ZigBee, Bluetooth, and Z-wave which are existing short-range communication protocols. For the IoT gateways, network manageability is slightly bit difficult. The nodes in the subnet are managed by the conventional gateway. The gateway nodes are not controlled by the central controller which reduces network security. The scheme of blockchain encryption is implemented in this work which increases the security of IoT sensor nodes. The proposed typical model is implemented in MATLAB and outcomes are analyzed and examined in terms of various parameters.

Keywords: IoT, Internet of Things, Blockchain, Encryption, chaotic map.

1. INTRODUCTION

1.1 Introduction of IoT: The connection of large numbers of devices through public or private Internet protocols for sharing necessary information with each other is termed: Internet of Things (IoT). The Radio Frequency Identification (RFID) development community originally designed the connectivity IoTs in 1999. With the increase in usage of embedded and omnipresent communication, data analytics, mobile devices as well as cloud computing, several applications are adopting IoT lately. Billions of objects which can sense, forward and share information are deployed over the public or private networks to generate an integrated large-scale network [1]. There is a continuous collection of data came from the interconnected devices. Planning, managing and decision making can be performed after the analysis of collected data. In the near future, almost all the applications will be utilizing the IoT platform somehow due to its various benefits. For all kinds of devices of various shapes, sizes, home appliances, cameras, and smartphones, it is not necessary to use the internet. A network can be developed as well, across which all these appliances can be interlinked. Several advance software and communication services are provided along with Internet by the IoT applications.

To ensure networking and efficient computing IoT has been deployed in several applications. The interconnection of all the objects available in the self-configuring wireless network is the major aim of this technology. The most important device of IoT is RFID. A wireless layer available on the top of Internet architecture helps in designing the global infrastructure of RFID tags. The interconnected things and objects communicate with each other in this network design [2]. The objects which are deployed in certain complex environments use a different Internet Protocol (IP) location. The sensors which help to collect the sensitive information involved to temperature and pressure of surroundings are deployed in such complex situations.

For processing the information based on the requirements of current applications, the information collected from surroundings is processed further by transferring it to other sensors of the connected network.

1.2 blockchain Technology: Blockchain technology provides a new way of recording transactions which is designed to be very efficient, highly secure, and very transparent.

The blockchain is a distributed database in nature which maintains a continuously growing set of data records. which means that there is no master system or machine which holds the entire chain. All the participating nodes have a copy of that chain.

A blockchain contains two important types of elements:

Transactions: are the actions or activities created by the participant nodes in the network.

Blocks record: it ensures that these transactions are in the correct sequence and have not been tampered.

1.3 Blockchain in IoT: The Internet of Things and Blockchain are two separate different technologies which are used to revolutionize the broader aspects of the business. But the concept of putting them together in one platform can make and produce something different even greater.

Combining Internet of Things and Blockchain really make a lot of functionality and more features as IoT devices growing and taking a rapid increase of data collecting devices into our personal lives' operation control while Blockchain encryption schema enables the creation of real-time records with proof of work.

A future of trillions of devices communicating and interacting with each other in very effective manner requires that their interactions and transactions recorded and managed on an immutable database of securely sharable, and highly permission access.

1. BACKGROUND WORK

Byung-Yoon Sung, et.al (2018) explained the architecture of AES-GCM authenticated encryption (AE) cryptosystem [3]. This approach was appropriate for IoT security applications. The proposed approach provided privacy with the help of Counter (CTR) mode of block cipher AES. The proposed approach provided reliability and genuineness as well through the GHASH scheme.

Y Chandu, et.al (2017) proposed a novel hybrid and safe algorithm for the forwarding and accumulation of the information in the cloud system [4]. The proposed approach enabled the edge mechanism for the encryption of information. This information was produced with the help of the Advanced Encryption Standard (AES) prior to its transmission to the cloud.

Dai Long Hoang, et.al (2018) proposed two novel encryption techniques for the physical layer of IEEE 802.11ah [5]. In this study, a simulation exemplary was constructed. With the help of this model, the performance of presented techniques on the basis of BER and PER values was evaluated in AWGN noisy tunnel. The simulation outcomes demonstrated that the proposed second technique of encryption was appropriate for 802.11ah benchmark. The second technique was a Sign-bit encryption technique. This technique was relevant for the internet of things sensors due to its low complication, high functionality, and high safety.

AfsoonYousefi, et.al (2017) proposed a novel hybrid encryption algorithm. This approach was presented for the reduction of security threats and computational intricacy [6]. This algorithm enhanced the rapidity of encryption as well. Data reliability, privacy, non-refutation in information sharing for IoT were the main objectives of this proposed hybrid algorithm. MATLAB tool was used for the simulation of the ultimately recommended encryption algorithm.

Syed Farid Syed Adnan, et.al (2016) offered an investigation of AAE crypto method on the basis of time utilized in encryption and decryption process and clock cycles [7]. The execution on embedded Linux provided 99% enhancement on the encryption time period and enhancement of 94% on the decryption time period for 2048-bit primarily. The analytical outcomes demonstrated that the proposed approach was able to explore the potential of AAE in IoT because of the developments achieved in encryption time with respect to lesser processability and lesser memory obtainable for the transmission of encrypted information over the internet.

Vijay Dahiphale, et.al (2017) proposed a novel lightweight encryption model named as ANU-II. The proposed approach supported block length of 64 bits with a key size of 80/128 bits [8]. The proposed approach was the advanced and competent version of accessible lightweight cipher ANU. Several metrics such as memory size, latency, throughput, and energy made the proposed encryption model proficient in comparison with existing ANU.

2. METHODS AND METHADODOLOGY

Chaos means the unpredictable behavior or a state which is not of order. The behavior of dynamical systems is of major focus within the chaos theory which was established in the mid-70s [9]. When designing the cryptographic primitives, chaos theory and nonlinear dynamic techniques are used. Steganography, watermarking, block ciphers, and generators are among some of these techniques. Two operations named confusion and diffusion are merged to generate the chaotic cryptographic primitives. The chaos theory helps in modeling chaotic cryptographic primitives. Till a certain security level is achieved, both of the operations are performed repeatedly. For defending various attacks like brute-force attack, plain-text attack and differential attack, the quality of security is tested by its capability.

A function that exhibits certain kind of chaotic behavior is known as a chaotic map in mathematics. The form of the iterated function is taken here and the study of dynamical systems includes it. A continuous time or discrete-time parameter is used to parameterize the chaotic maps [10]. A chaotic map is identified to be a function of its own domain. The initial condition is termed to be the starting point of the trajectory. Various characteristics of the chaotic behavior are illustrated clearly by the chaotic maps.

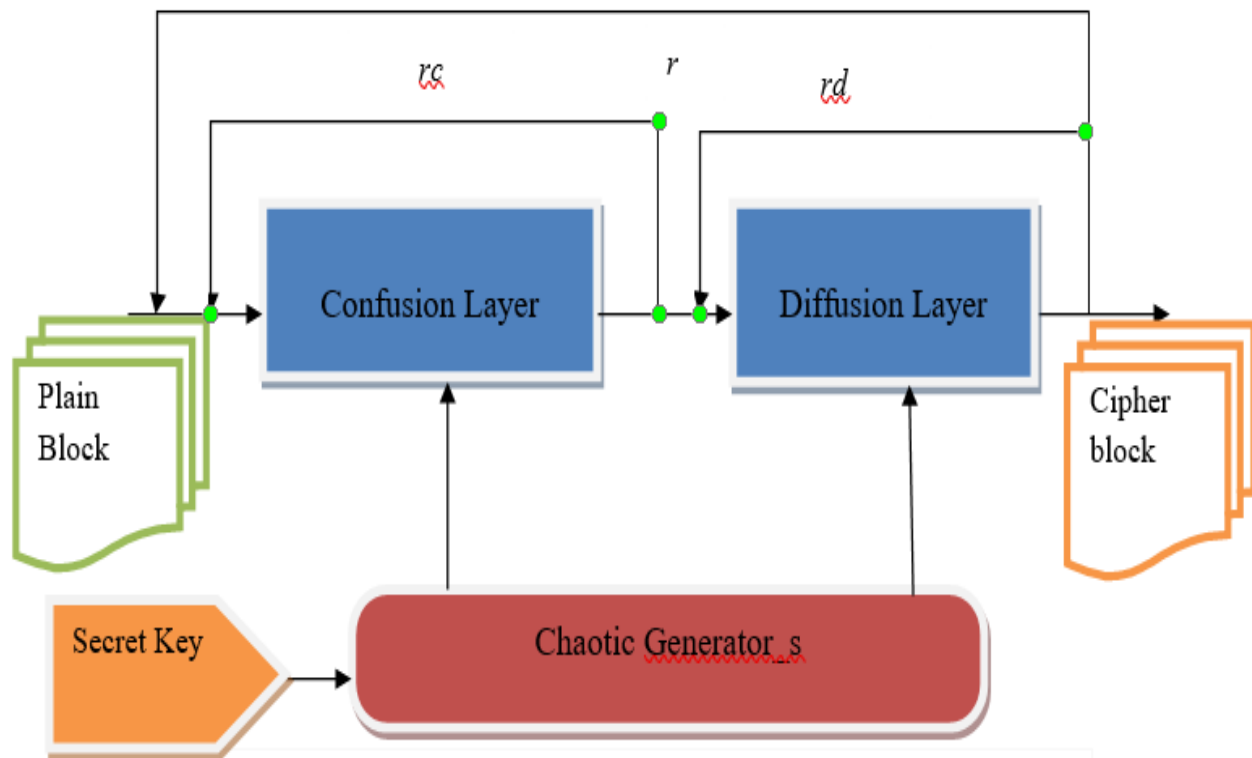


Fig 3.1 Diagram of Chaos-based Block Cipher

As shown in the above figure, confusion and diffusion layers work in a separate manner. The confusion process is applied rc times initially, in the confusion process. Further, on the output of confusion process, the diffusion process is applied rd times. Finally, r repetitions are performed for the two processes. Image scanning is performed in both layers. The substitution operation is performed by the confusion process. The relocation of image pixels is done but the values remain unchanged in the permutation case. The chaotic generator(s) supply the dynamic keys called Kc and Kd .

3. RESULT AND ANALYSIS

The proposed method is based on the blockchain encryption in IoT. The scheme of block-wise encryption is applied in MATLAB for the simulation. The MATLAB is the tool which is used to perform complex mathematical computations. The MATLAB has various inbuilt tool boxes like computer vision, neural network, etc. The simulation tables of this research work are described in table4.1

Parameters	Values
Area	150 *100 meters
Number of sensor nodes	100
Probability of cluster head	0.1
Queue	Priority queue
Queue Length	50
Base station	Middle of network
Mobility Model	Random

Table 4.1: Simulation Table

Figure 4.1: LEACH Protocol

Fig 4.1, shows the finite number of sensor nodes present in the IoT. All the available sensor nodes are divided into number of clusters and each cluster with a fixed number of sensor nodes. every cluster has its own cluster head and that transmits the data to sink or the base station.

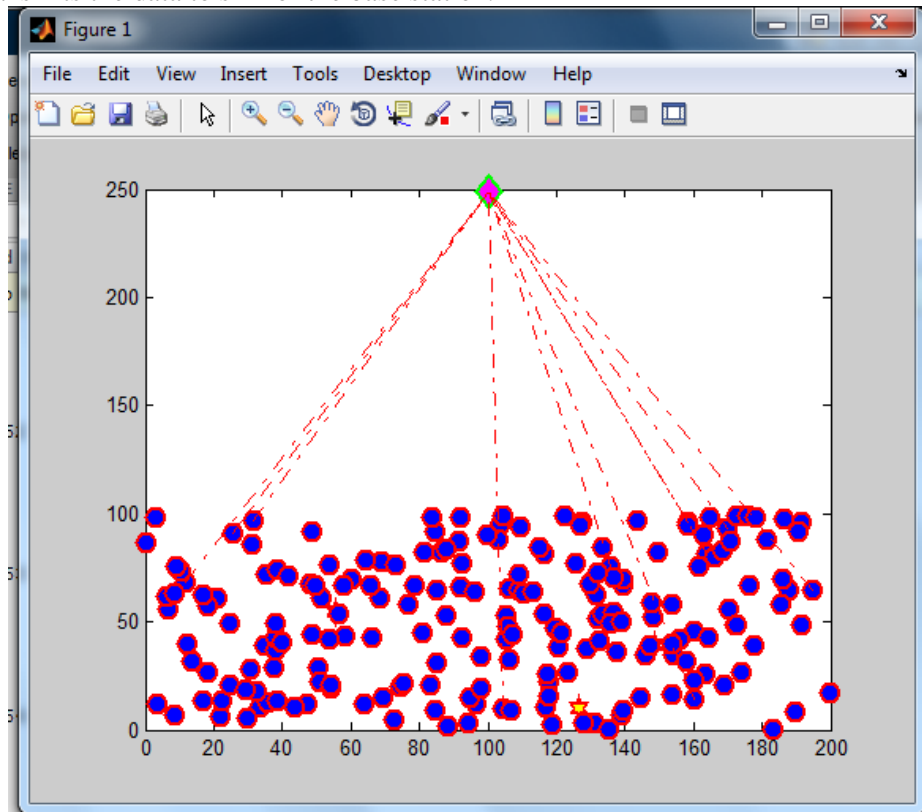
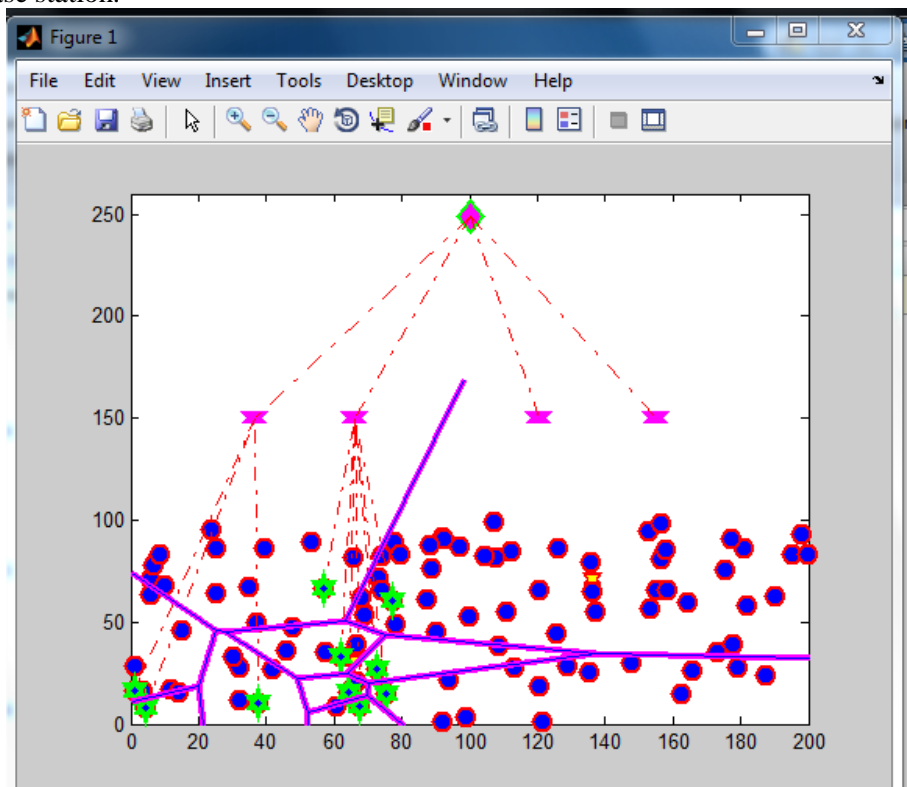

Figure 4.2: Proposed Scenario

Fig 4.2, shows that the whole network infrastructure is divided into clusters and these clusters are represented by the purple color. Green color denotes the cluster heads and sends the data to the cache node. The data which is transmitted to the cache nodes are encrypted with block-wise encryption. Further, the cache nodes will send the data to the base station.



PERFORMANCE ANALYSIS

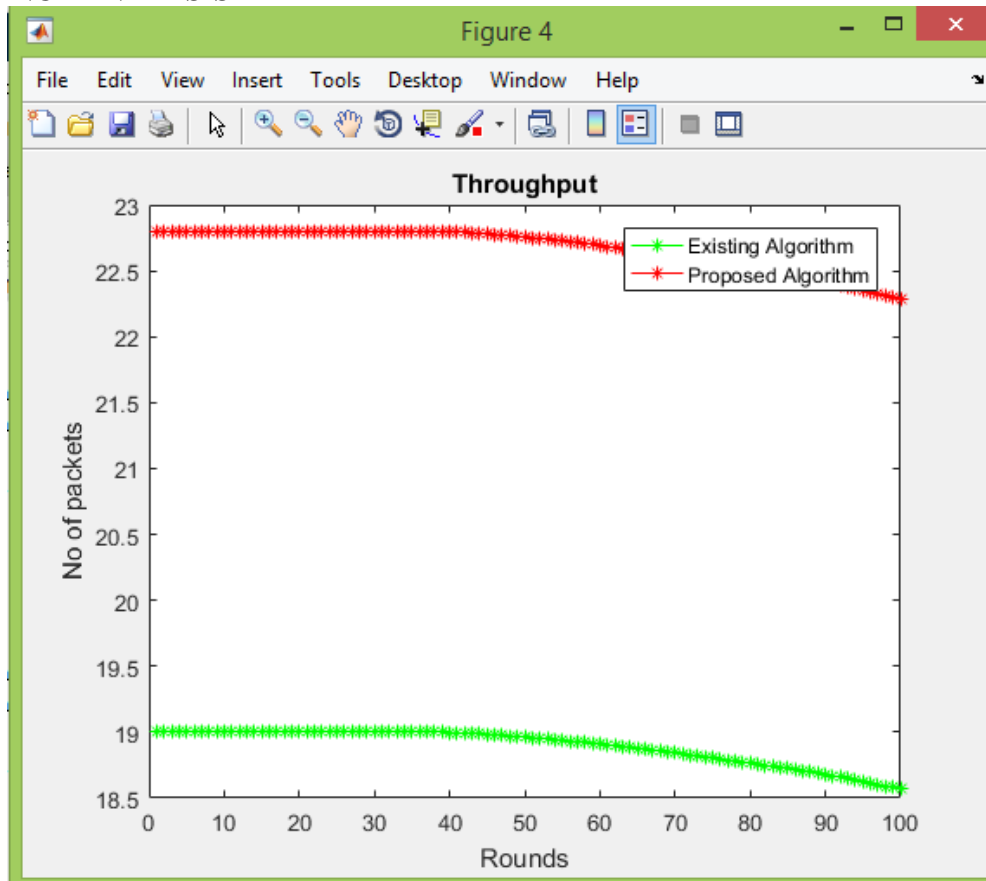


Figure 4.3: Throughput Comparison

As shown in fig 4.3 the throughput of the proposed technique in which threshold is applied for the secure channel is analyzed. It is analyzed that throughput is increased at a steady rate.

Round Number	Existing Approach	Proposed Approach
10	19 packets	22 packets
50	18.5 packets	22.7 packets
100	18.3 packets	22,4 packets

Table 4.2: Throughput Comparison

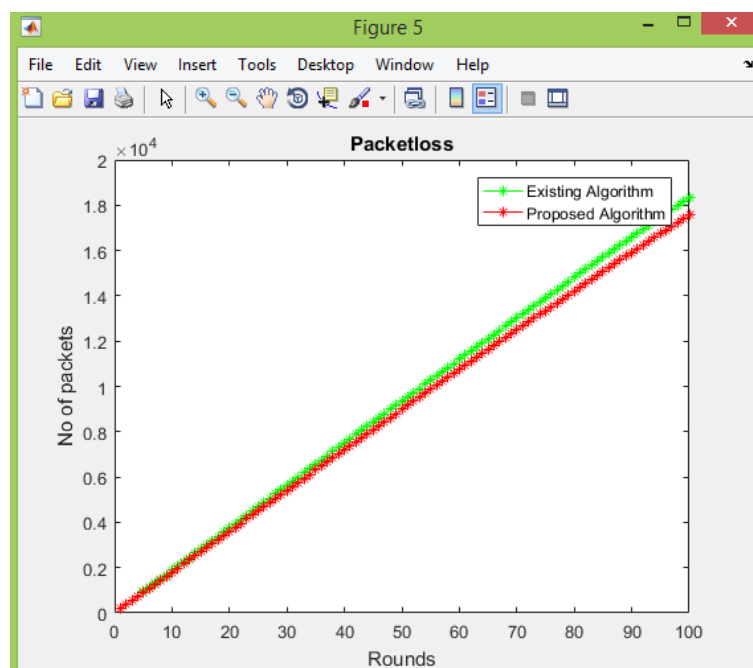


Figure 4.4: Packet loss Comparison

As shown in fig 4.4, When the threshold technique is applied, the malicious node is detected from the network which reduces packet loss. In the figure, the x-axis shows a number of rounds and the y-axis shows the number of packets.

Round Number	Existing Approach	Proposed Approach
10	0.2 packets	0.3 packets
50	1.3 packets	1 packet
100	1.8 packets	1.4 packets

Table 4.3: Packet loss Comparison

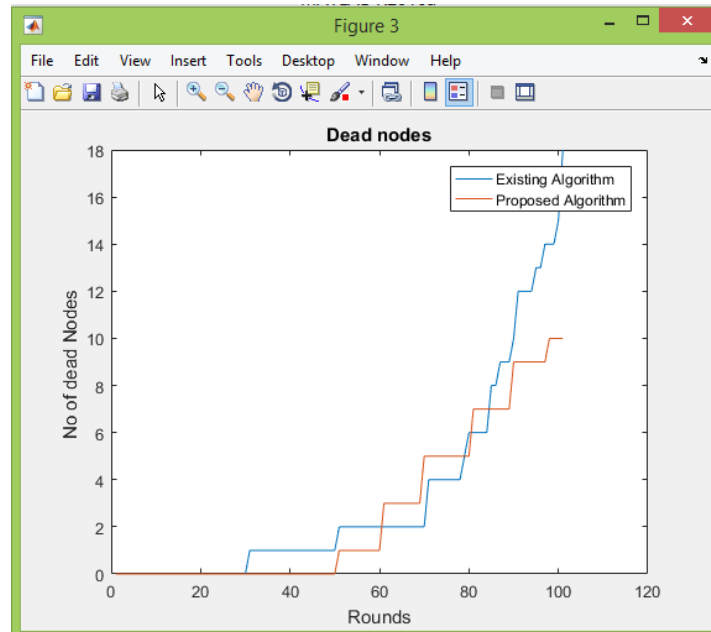


Figure 4.5: Comparison of Dead Node

As shown in fig 7, the graph is shown in which a number of dead nodes are shown versus a number of rounds. On the x-axis, the number of rounds is shown and on the y-axis, the number of dead nodes is illustrated. The proposed technique has less number of dead nodes as compared to the existing technique.

Round Number	Existing Approach	Proposed Approach
30	1 node	0 node
50	3 nodes	1 node
100	18 nodes	10 nodes

Table 4.4: Dead Nodes Comparison

4. CONCLUSION AND FUTURE WORK

The connection of large numbers of devices through public or private Internet protocols for sharing necessary information with each other is known the Internet of Things (IoT). To guarantee networking in IoT and efficient computing several applications has been deployed. The interconnection of all the objects available in the self-configuring wireless network is the major aim of this technology [11]. The most important device of IoT is RFID. A wireless layer available on the top of Internet architecture helps in designing the global infrastructure for RFID tags. The sensors which help in collecting sensitive information correlated to temperature and pressure of surroundings are deployed in such complex situations. For processing the information based on the requirements of current applications, the information collected from surroundings is processed further by transferring it to other sensors of the connected network. provisioning security in IoT network is very low which affect network performance. In this research work, blockchain encryption is implemented to improve the security of the network. The proposed methodology is implemented in MATLAB and results are examined and analyzed in terms of dead nodes, packet loss and throughput.

Following are the various future prospective of this work: -

1. The proposed scheme can be further improved to encrypt the real-time data on the Internet of things.
2. The proposed scheme can be further compared with security techniques to test reliability.

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DEBT MATURITY STRUCTURE IN INDIAN COMPANIES: A PANEL DATA ANALYSIS

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ABSTRACT

The debt maturity literature establishes that the agency cost hypothesis, signalling hypothesis, liquidity risk hypothesis, matching hypothesis, and tax hypothesis jointly determine debt maturity in corporate sector. Using panel OLS regression methodology on panel data of 308 firms drawn from BSE 500 for 10 years spanning 2007 to 2017, this research examines comprehensively the determinants of debt maturity in the Indian corporate sector. The growth option, firm size and leverage have significant impact on the debt maturity decisions. However, the research finds that the firm quality, corporate tax rate and asset variance are not important determinants of corporate debt maturity. The regression results establish that the debt maturity decisions are influenced by agency cost hypothesis and maturity matching hypothesis. Conversely, the research findings fail to establish that the debt maturity principles such as the signalling hypothesis, liquidity risk hypothesis and tax hypothesis determine the debt maturity in the Indian corporate sector.

Keywords: Corporate finance, Debt maturity, capital structure, leverage, information asymmetry

1. INTRODUCTION

Debt maturity - the composition of short-term and long-term debt in the capital structure of a firm, is a significant financial decision, which can magnify the risk-return profile of the shareholders and market value of the firm. The debt maturity choice is not only a device for magnifying the market value of the firm by increasing the interest tax shield of debt but also a strategic tool for mitigating agency conflicts, information asymmetry and liquidity risk. Therefore, the extant literature on debt maturity establishes that agency cost hypothesis, signalling hypothesis, liquidity risk hypothesis, matching hypothesis, and tax hypothesis rationally determine the debt maturity decisions in corporate sector.

Agency cost hypothesis suggests that debt maturity is one of the instruments that firms extensively exploit to mitigate the agency problems caused by conflicts of interest between shareholders and bondholders over exercising growth option including underinvestment and risky asset substitution. (Jensen and Meckling (1976), Myers (1976), Smith and Warner (1979)) The modern financial markets are characterized by the information asymmetry, which creates informational differences between markets and corporate managers. If the managers are systematically informed about the quality of the firm, they will issue the type of securities that market overvalues most. Hence, the debt maturity choice is a signalling mechanism and insider's valid signal to the asymmetrically informed market about the quality of firms. (Flannery (1986), Diamond (1991), Barnea, Haugen, and Senbet (1980))

The liquidity risk hypothesis establishes that debt maturity choice of a firm is the result of a trade-off between the borrowers' preference for short-term debt due to asymmetric information and liquidity risk. Therefore, debt maturity is non-monotonically related to credit risk; borrowers with highest and lowest credit rating prefer short-term debt than the borrowers with intermediate ratings. (Diamond (1991), Flannery (1986), and Goel and Wang (2009)) The matching hypothesis is based on the conventional maxim of matching maturity of assets and liabilities, where long-term assets are financed with long-term debt and short-term assets are financed with short-term debt. The maturity matching is a hedging and risk management mechanism that reduces the cost of financial distress and bankruptcy risk due to the non-synchronization of cash inflows and outflows from the assets. The empirical literature also establishes that the maturity matching is a strategic device for mitigating agency cost problems, information asymmetry and liquidity risk. (Morris (1976), Myers (1977))

The trade-off theories envisage that optimum debt maturity of a firm is determined by the trade-off between the tax advantages of debt, and the cost of bankruptcy and financial distress. (Brennan and Schwartz (1984), Kane, Marcus and McDonald (1985), and Brick and Ravid (1985)) The tax hypothesis proposes that the market value of the firm can be augmented by adopting appropriate recapitalization strategies during high asset volatility by harnessing the prevailing corporate tax rate and term structure of interest rate. As a result, the corporate tax rate, term structure of interest rate and asset variance are important determinants of corporate debt maturity.

The debt maturity literature postulates that the agency cost hypothesis, signalling hypothesis, liquidity risk hypothesis, matching hypothesis, and tax hypothesis determine the debt maturity decisions in organizations. However, these theoretical models and empirical evidences on debt maturity principles are largely based on the

corporate experience of developed economies. Since, the magnitude of the economic parameters varies from developed to developing and under developed economies, the generalization of the debt theories and models have become meaningless and irrelevant. Hence, the main objectives of this research is to find out the determinants of debt maturity and empirically verify the debt maturity principles in Indian corporate sector.

This research paper is organized into six sections. The first section gives an over view of the research. The second section provides review of literature. The third section explains the objectives and research methodology. The fourth section empirically investigates the determinants of debt maturity. Fifth section discuss the findings of the study and the Sixth section concludes the research.

2. REVIEW OF LITERATURE

This section presents a review of the major research works on the debt maturity, which brings out the theoretical explanations and empirical evidences on corporate debt maturity.

2.1 DEBT MATURITY

The debt maturity may be broadly defined as the composition of short-term and long-term debt in the debt capital structure of firms. This paper has adopted balance sheet approach as suggested by Barclay and Smith (1995), Johnson (2003), Deesomsak, Paudyal, Pescetto (2005) for measuring the debt maturity. The debt maturity (DEBTMAT) has been defined as the ratio of long-term debt (LTD) to total debt (TD). The long-term debt is the debt that maturing in more than one year, excluding that portion of long-term debt matures in current year.

$$DEBTMAT = \frac{\text{Long Term Debt (LTD)}}{\text{Total Debt (TD)}} \quad (1)$$

2.2 AGENCY COST HYPOTHESIS

The corporations are characterized by agency principal relationship among various stakeholders. The separation of ownership and management in corporations lead to conflict of interests between managers and shareholders, and bondholders and shareholders, Jensen and Meckling (1976). The conflict of interests between the stockholders and bondholders over the exercise of growth options are greater for smaller firms with more growth option in the investment opportunity set. Hence, the empirical literature has identified two proxies, growth options (GROWTH) and firm size (SIZE) for representing agency cost problems. Myers (1977) suggests that the conflicts of interest between bondholders and stockholders over the exercise of the growth option can be mitigated by employing low level of leverage or shortening the maturity of debt. The agency cost hypothesis predicts that debt maturity and growth option are inversely related. The growth option is proxied to the ratio of market value of assets to book value of assets (MV/BV). The market value of the assets is estimated as the book value of the assets plus the difference between the market value and book value of the equity shares.

$$GROWTH = \frac{\text{Market Value of Asset (MV)}}{\text{Book Value of Asset (BV)}} \quad (2)$$

H1: Debt maturity is inversely related to growth options

The empirical hypothesis suggests that debt maturity is directly related to firm size. The firm size is measured as the natural logarithm of the sales value.

$$\text{Firm Size (SIZE)} = \text{Natural Log of Sales} \quad (3)$$

H2: debt maturity is positively related to firm size

2.3 SIGNALING HYPOTHESIS

The financial markets across the world are subjected to asymmetric information and the information asymmetry results in moral hazard problems, adverse selection, and high transaction cost. Leland and Pyle (1977) and Ross (1977) suggest that the managers would adjust the firm's debt maturity to signal their assessment about the true firm quality in an asymmetrically informed financial market. Flannery (1986) establishes that the debt maturity choice of a firm is an appropriate and valid signal of the insiders' information about the firm quality to the asymmetrically informed market. The empirical research hypothesis is that the debt maturity is inversely related to firm quality. The abnormal future earnings or the firm QUALITY is the proxy for insiders' information about the firm quality. Firm quality is estimated as the difference between the earnings per share in current year (t+1) and previous year (t), and divided by previous year's (t) share price.

$$\text{Firm Quality} = \frac{EPS_{t+1} - EPS_t}{SP_t} \quad (4)$$

H3: Debt maturity is inversely related to firm quality

2.4 LIQUIDITY RISK HYPOTHESIS

Diamond (1991) argues that the choice of debt maturity trades-off the borrower's preference for short-term debt due to private information about future credit ratings and liquidity risk. The short-term debt creates liquidity risk to the borrower because the lender may refuse to rollover the debt if bad news arrives and forces them into inefficient liquidation. The liquidity risk prevents borrowers from using short-term debt because under the premature liquidation borrowers would lose control over the future cash inflows. The good borrowers with high liquidity risk choose long-term debt even though they expect favourable information about the quality at the time of refinancing. The low rated borrowers may have no option but to choose short-term debt, despite the incentives for inefficient liquidation that it gives to lenders. Diamond establishes that debt maturity and credit risk are non-monotonically related and firms with highest and lowest credit ratings prefer to issue short-term debt and firms with intermediate ratings issue long-term debt. The empirical prediction is that debt maturity is inversely related to liquidity risk. Liquidity risk is measured as the ratio of current asset (CA) and Current Liabilities (CL)

$$\text{Liquidity risk} = \text{LIQUIDITY} = \frac{\text{Current Asset (CA)}}{\text{Current Liabilities (CL)}} \quad (5)$$

H4: Debt maturity is inversely related to Liquidity risk

2.5 MATCHING HYPOTHESIS

Morris (1976) argues that firms adopt matching strategy by which the maturity of the debt is approximately matched to the maturity of the assets in the expectation that the cash flows generated by the assets will be sufficient to service debt and retire debt at the end of asset's life. The maturity matching is like a hedging policy by which debt maturity is approximately matched with the life of the asset. Myers (1977) argues that maturity matching is an effective strategy to mitigate agency cost problems due to the conflict of interests between debtholders and stockholders by ensuring the debt repayments are scheduled corresponding with the decline in the value of asset in place. The matching principle ensures that the debt repayments shall be due according to the decline in the asset value. Thus, the maturity matching can reduce the risk of non-synchronization of cash outflows and inflows and it is a form of hedging that reduces the expected cost of financial distress.

The empirically testable research hypothesis is that debt maturity is directly related to asset maturity. The asset maturity (ASSETMAT) is the proxy to represent matching hypothesis. The ASSETMAT is equal to the value of net property, plant, and equipment (PPE) divided by annual depreciation expense (DEP).

$$\text{Asset Maturity} = \frac{\text{Plant, Property, Equipment (PPE)}}{\text{Depreciation (DEP)}} \quad (6)$$

H5: debt maturity is directly related to asset maturity

2.6 TAX HYPOTHESIS

Corporate Tax Rate (TAXRATE): Kane, Marcus, and McDonald (1985) suggest that the optimum debt maturity involves a trade-off between the tax advantage of debt, bankruptcy cost, and flotation cost. As the higher transaction cost associated with the debt issue, the firm requires more time to amortize the debt flotation cost that gives greater optimum maturity structure. Because at lower corporate tax advantage, longer maturity is required to amortize flotation cost incurred in issuing debt. Thus, the firms lengthen debt maturity as the tax advantages of debt decreases to ensure that remaining tax advantage of debt and net bankruptcy costs is not less than amortized flotation cost. The empirical hypothesis that tax rate and debt maturity are inversely related. The tax rate is measured as the ratio of the tax paid to taxable income.

$$\text{Tax Rate} = \frac{\text{Tax Paid (TP)}}{\text{Pre Tax Income (PTI)}} \quad (7)$$

H6: Debt maturity is negatively related to tax rate

Asset Variance (ASSETVAR): Kane, Marcus, and McDonald (1985) demonstrate that the optimum debt maturity is inversely related to the volatility of firm value. The decreasing firm value volatility reflecting the fact that with less volatile the asset variance the firms rebalance their capital structure less frequently. A low variability in firm value causes firms to avoid rebalancing their capital structure frequently due to the concerns about expected bankruptcy costs. (Ju and Yang (2006)) The empirically testable research hypothesis is that debt maturity is inversely related to asset variability. The asset variability (ASSETVAR) is proxied to the standard

deviation of the earnings before interest and taxes and depreciation and amortization (EBITDA), scaled by the average book value of asset (BV).

$$\text{Asset Variance} = \frac{\sigma \text{ EBITDA}}{\text{Average Book Value of Assets (BV)}} \quad (8)$$

H8: Debt maturity is negatively related to asset variance

2.7 LEVERAGE

The capital structure theories establish that the optimal capital structure and optimal leverage of a firm is determined by the trade-off between the interest tax shields of debt and the higher bankruptcy cost. The empirical studies on the determinants of debt maturity have treated leverage as control variable while determining the debt maturity. This is especially important when dealing with tax effect, because cross-sectional differences in leverage and associated debt tax shields may accompany cross sectional difference in debt maturity, Stohs and Mauer (1996). Hence, researchers control for this effect by including measure of leverage in the empirical studies. The empirically testable research hypothesis is that debt maturity is positively related to leverage. Leverage is measured as the ratio of total debt to market value of the firm.

$$\text{Leverage} = \frac{\text{Total Debt (TD)}}{\text{Market Value of Firm (MV)}} \quad (9)$$

H5: Debt maturity is directly related to leverage

3. OBJECTIVES AND RESEARCH METHODOLOGY

The main objectives of this research is to find out the determinants of debt maturity and empirically validate the debt maturity principles such as the agency cost hypothesis, signalling hypothesis, liquidity risk hypothesis, matching hypothesis, and tax hypothesis in Indian corporate sector. The empirical investigation of the determinants of corporate debt maturity is purely based on secondary data.

The data have provided by the PROWESS - Centre for Monitoring Indian Economy (CMIE). The sample is drawn from the BSE 500 index, which represents nearly 93% of the total market capitalization on Bombay Stock Exchange (BSE) and represents 20 industries. The financial firms and firms with missing observations during the sample period are excluded. The actual span of the study is confined to 10 years from 2007 to 2017. The research is primarily based on panel data and the panel data has been created by pooling cross-section and time series data. The final sample has 308 observations for cross section and 3080 observations for panel data.

The Ordinary Least Square (OLS) regression methodology is adopted for the econometric modelling of the determinants of debt maturity in Indian corporate sector. The fixed effect regression method is used for data analysis and interpretation of the result of the determinants of debt maturity. The general formulation of the within effect fixed effects linear panel data model is given below:

$$Y_{it} = \alpha_i + \beta_1 X_{it}^t + \varepsilon_{it} \quad i = 1, 2, \dots, N. \quad t = 1, 2, \dots, T. \quad (1)$$

where,

Y_{it} = dependent variable,

α_i = unobservable time invariant individual fixed effects,

X_{it} = explanatory variable,

β_1 = regression parameter,

ε_{it} = disturbance term.

This research has identified 8 explanatory variables for studying debt maturity in the Indian corporate sector. The dependent variable is debt maturity (DEBTMAT). The explanatory variables are the growth option (GROWTH), firm size (SIZE), firm quality (QUALITY), liquidity risk (LIQUIDITY), asset maturity (ASSETMAT), tax rate (TAXRATE), term structure (TERM), asset variance (ASSETVAR), and leverage (LEVERAGE).

The basic regression model is given below:

$$DEBTMAT = \alpha + \beta_1 \left(\frac{MV}{BV} \right) + \beta_2 (SIZE) + \beta_3 \left(\frac{EPS_{t+1} - EPS_t}{SP_t} \right) + \beta_4 (LIQUIDITY) + \beta_5 \left(\frac{PPE}{DEP} \right) + \beta_6 \left(\frac{TP}{PTI} \right) + \beta_7 \left(\frac{\sigma EBITDA}{MV} \right) + \beta_8 \left(\frac{TD}{MV} \right) + u_i \quad (2)$$

OR

$$DEBTMAT = \alpha + \beta_1 (GROWTH) + \beta_2 (SIZE) + \beta_3 (QUALITY) + \beta_4 (LIQUIDITY) + \beta_5 (ASSETMAT) + \beta_6 (TAXRATE) + \beta_7 (ASSETVAR) + \beta_8 (TERM) + \beta_9 (LEVERAGE) + u_i$$

where,

$DEBTMAT$ = debt maturity,

α = intercept,

β = coefficients for independent variables,

u_i = disturbance term.

The presence of autocorrelation, heteroscedasticity and cross sectional dependence in panel data are tested by applying Wooldridge test, modified Wald test and Pesaran Cross-sectional dependence (CD) test respectively. This paper has used a non-parametric covariance matrix estimator Driscoll and Kray standard errors that produce heteroscedasticity consistent standard errors, which are robust to very general forms of spatial and temporal dependence. (Hoechle and Basel (2008)) The Hausman test is used for deciding between the random effect regression and fixed effect regression for analysis of data. The Hausman test concludes that the fixed effect regression is the appropriate method for data analysis.

4. ANALYSIS OF RESULTS

This section is designed to test the empirical research hypothesis on determinants of debt maturity in Indian corporate sector through the panel OLS regression analysis. This section is divided into descriptive statistics, correlation analysis, regression analysis and discussion of empirical findings.

4.1 DESCRIPTIVE STATISTICS

The descriptive statistics, such as mean, median, standard deviation, minimum, and maximum are used to explain the basic characteristics of both dependent variable and independent variables. Table 1 contains descriptive statistics for panel data on dependent variable and independent variables for 323 firms for 10 years during the period 2007 to 2017.

Table-1: Descriptive Statistics of Corporate Debt Maturity for the period 2007-2017

Variables	Mean	Std. Dev.	Minimum	Maximum
DEBTMAT	.3492878	.3153512	0	0.9998
GROWTH	3.857062	4.477306	-6.1	50.72
SIZE	10.06702	1.44307	5.17	15.43
QUALITY	.1088734	.356203	-.89	3.69
LIQUIDITY	1.555029	1.099624	.05	13.24
ASSETMAT	11.18119	5.985381	.38	55.95
TAXRATE	.2400422	.2887715	-5.11	9.48
ASSETVAR	.6820405	.1743616	0	1.2928
LEVERAGE	.2041623	.1816446	0	1.59

Source: Centre for Monitoring Indian Economy (CMIE) 2007-2017

Table 1 reveals that the debt maturity recorded mean value of 0.349 with a standard deviation of 0.315 during the period 2007 to 2017. The debt maturity has recorded high volatility across the firms. This reflects the fact that approximately 32% of the debt has maturity more than one year and the debt maturity has recorded high volatility across the firms. Indian corporate sector is characterized by moderate level of debt maturity. The mean and standard deviation of growth option (GROWTH) are 3.85 and 4.47 respectively. The high dispersion around the mean growth option explains that Indian firms have valuable investment options and subject to potential underinvestment problems as predicted by the agency cost hypothesis. The mean and median values of firm size (SIZE) are 6.86 and 6.79, with a standard deviation of 1.50, show the low dispersion of firm size around the mean.

The firm quality (QUALITY) has recorded mean and standard deviation 0.1088 and 0.356, respectively. This indicates the incidence of high variation in the future abnormal profit across the firms. The mean value of asset maturity (ASSETMAT) is 11.18 with a standard deviation of 5.985 explain that asset maturity varies widely across the sample companies. Since, the sample is composed of small, medium, and large companies representing 19 different types of industries a wide disparity in the asset maturity across the firms is not a surprise.

The mean tax rate (TAXRATE) is 0.2400 with a standard deviation of 0.2887. The result establishes that the Indian companies are subjected to high rate of taxation. The mean and standard deviation of asset variance (ASSETVAR) are 0.682 and 0.174, respectively. The low levels of dispersion around the mean asset variability reflect the fact that Indian corporate sector uses more long-term debt in the capital structure as compared to short-term debt. The value of mean for leverage (LEVERAGE) is 0.204 and standard deviation of 0.181. This shows the existence of large variation in the proportion of debt in the capital structure of sample firms.

4.2 CORRELATION ANALYSIS

Table 2 presents Pearson's correlation coefficients, which establishes the nature of relation between the debt maturity and the independent variables, growth option (GROWTH), firm size (SIZE), firm quality (QUALITY), bond ratings (BOND and SQBOND), asset maturity (ASSETMAT), tax rate (TAXRATE), term structure (TERM), and asset variance (ASSETVAR).

Table-2: Pearson's Correlation Matrix of dependent variable and independent variables for the period 2007-2017.

VARIABLES	DEBTMAT	GROWTH	SIZE	QUALITY	LIQUIDITY	ASSETMAT	TAXRATE	ASSETVAR	LEVERAGE
DEBT MAT	1.00								
GROWTH	-0.1658*	1.00							
FIRM SIZE	0.1647*	0.0502*	1.00						
QUALITY	-0.0057	-0.0160	-0.1225*	1.00					
LIQUIDITY	-0.2035*	0.0173	-0.0781*	-0.0243	1.00				
ASSETMAT	0.1873*	-0.1490*	0.0691*	-0.0183	-0.1673*	1.00			
TAX RATE	-0.0323	0.0382*	0.0604*	-0.0035	0.0205	-0.0484*	1.00		
ASSET VAR	0.1873*	-0.1601*	0.0743*	-0.0406*	-0.0852*	0.0565*	0.0019	1.00	
LEVERAGE	0.3553*	-0.2942*	0.0376*	0.0418*	-0.0614*	0.2400*	-0.0614*	0.1013*	1.00

Source: Centre for Monitoring Indian Economy (CMIE) 2007-2017

*Significant at 5% level

Table 2 shows the correlation coefficient on DEBTMAT and GROWTH (-0.1658*), which is significant and negative. The significant correlation coefficient on growth option strongly supports the research hypothesis that debt maturity and growth option are inversely related. The correlation coefficient on DEBTMAT and SIZE (0.1647*) is positive and significant. The insignificant correlation between debt maturity and firm size summarily accept the empirical research hypothesis that debt maturity positively relates to firm size. The correlation coefficient on DEBTMAT and QUALITY (-0.0057) is negative but insignificant. The positive and insignificant coefficient on firm quality and debt maturity rejects the empirical research hypothesis that debt maturity inversely relates to firm quality. The correlation between LIQUIDITY and DEBTMAT (-0.2035*) is significantly negative. The negative and significant correlation between liquidity risk and debt maturity indicates that the firms with higher credit risk use more short-term debt and firms with lower credit risk use more long-term debt. The correlation coefficient between the DEBTMAT and ASSETMAT (0.1873*) is significant and positive that strongly supports the empirical research hypothesis that debt maturity directly relates to asset maturity. The correlation coefficient on DEBTMAT and ASSETVAR (0.1873*) is positive and significant. The significant correlation coefficient between debt maturity and asset variance is against the direction of the empirical research hypothesis that optimum debt maturity inversely relates to asset variance. The correlation coefficient between DEBTMAT and LEVERAGE (0.3553*) is positive and significant. The positive correlation between DEBTMAT and LEVERAGE strongly supports the empirical research hypothesis that debt maturity and leverage directly relates.

4.3 REGRESSION ANALYSIS

Table 3 presents the results on determinants of debt maturity from the Fixed Effect Regression and Random Effect Regression specifications. The first column of the table lists the independent variables, and second column displays the hypothesized sign for the coefficient estimates and rest of the columns display the regression coefficients and standard error for fixed effect regression and Random Effect Regression. The fixed

effect regression and random effect regression coefficients with auto-correlation, heteroscedasticity and cross-sectional dependence consistent Driscoll-Kraay standard errors and t-statistics are reported in parentheses.

Table-3: Pooled OLS, Fixed Effect Regression and Random Effect Regression on Debt Maturity and Independent Variables for 323 Firms during the Period 2007-2017

Independent Variable	Hypothesized Sign	Fixed Effect Regression	Random Effect Regression
GROWTH	-	-.00609209* (.00245666)	-.00589361* (.00235652)
SIZE	+	.03239692*** (.00956455)	.03318469*** (.00896666)
QUALITY		-.04821105 (.02546616)	-.0019549 (.01116457)
LIQUIDITY	-	-.0179339 (.01045498)	-.01734921 (.01046276)
ASSETMAT	+	.00460006* (.00199094)	.00466527* (.00199181)
TAXRATE	-	-.0154098 (.02403573)	-.01677186 (.0245586)
ASSETVAR	-	-.09701633 (.05388275)	-.09255762 (.0537139)
LEVERAGE	+	.49171313*** (.06486604)	.49056984*** (.06518246)
INTERCEPT		-.00217374 (.1152702)	-.02002479 (.10864975)
R^2		.6092	.6092
F		19.03	152.66 (Wald χ^2)
N		3080	3080

Source: Centre for Monitoring Indian Economy (CMIE) 2007-2017

* Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level

4.3.1 AGENCY COST HYPOTHESIS

(1) Growth Option (GROWTH): Table 3 shows that the estimated coefficient on GROWTH option in fixed effect regression is significant and negative. The significant and negative coefficient on GROWTH support the agency cost hypothesis that debt maturity and growth option are inversely related and firms with high growth options borrow short-term debt to mitigate agency cost problems including risky asset substitutions and underinvestment. This research finding is consistent with the arguments of Stohs and Mauer (1996), Alcock, Finn and Tan (2008), Jensen and Meckling (1976) and Myers (1977) debt maturity is an effective strategy for mitigating the agency problems.

(2) Firm Size (SIZE): Table 3 shows that firm SIZE has positive and statistically significant impact on the corporate debt maturity. The coefficient estimate on firm SIZE is positive and significant in the fixed effect regression, which strongly support the empirical hypothesis that firm size and debt maturity are positively related. The findings on firm size is consistent with the agency cost hypothesis, that smaller firms tend to have more growth option and more likely to experience conflict of interest between shareholders and debtholders and the debtholders tend to reduce the risk of lending to smaller firms by restricting the length of debt maturity.

4.3.2 SIGNALLING HYPOTHESIS

Firm Quality (QUALITY): Table 3 indicates that the firm quality is negative but has insignificant impact on the corporate debt maturity. The insignificant coefficient estimate on QUALITY in fixed effect regression repudiates the empirical research hypothesis that debt maturity inversely relates to firm quality. Insignificant coefficient on firm quality rejects the arguments of Flannery (1986) that the debt maturity choice of firm is valid signal of insider's information about firm quality to the asymmetrically informed market.

4.3.3 LIQUIDITY RISK HYPOTHESIS

Liquidity Risk (LIQUIDITY): Table 3 presents the regression results on debt maturity and liquidity risk. The coefficient estimate on LIQUIDITY in fixed effect regression is significant and negative, which summarily reject the research hypothesis that liquidity risk and debt maturity are inversely related and that firms with highest credit risk issue more long-term debt and firms with lowest credit risk issue more short-term debt in the capital structure. This empirical finding is inconsistent with the liquidity risk hypothesis of Diamond (1991) that the debt maturity non-monotonically relates to credit risk.

4.3.4 MATCHING HYPOTHESIS

Asset Maturity (ASSETMAT): Table 3 indicates that the estimated coefficient on asset maturity (ASSETMAT) is significant in fixed effect regression. The significant coefficient on ASSETMAT is consistent with the empirical research hypothesis that debt maturity positively relates to asset maturity. The research findings on matching hypothesis support the arguments of Morris (1976), Myers (1977) and Barclay and Smith (1995) that maturity matching is not only a hedging and risk management mechanism that can safeguard the firms from the bankruptcy risk but also an effective investment strategy for reducing agency cost problems.

4.3.5 TAX HYPOTHESIS

(1) Corporate Tax Rate (TAXRATE): Table 3 shows the coefficient estimate on TAXRATE is insignificant and negative in fixed effect regression. The insignificant coefficient on tax rate repudiate the empirical hypothesis that debt maturity inversely relates to corporate tax rate. The research findings on tax rate invalidate the arguments of Kane, Marcus, and McDonald (1985) and Ju and Yang (2006) that the optimum debt maturity involves a trade-off between the tax advantages of debt and the cost of bankruptcy and debt issue flotation cost.

(2) Asset Variance (ASSETVAR): The estimated coefficient on ASSETVAR is statistically significant and negative, which strongly validates the empirical hypothesis that debt maturity and asset variance are inversely associated. The research findings on asset variance strongly reject the arguments of Wiggins (1990) that the higher firm value volatility induces firms to lengthen the debt maturity; the tax deductibility of default premium on debt increases with maturity and the tax shield of interest payments on long maturity debt is incrementally higher than that of short-term debt that can be earned before bankruptcy cost are faced at maturity.

4.4.6 Leverage: Table 3 shows that the estimated coefficient on LEVERAGE has statistically significant impact on the corporate debt maturity. The estimated coefficient on LEVERAGE is positive and statistically, which strongly support the empirical hypothesis that leverage is directly related to the debt maturity and the leverage and debt maturity are strategic mechanism to mitigate agency problems prevailing in corporate sector. (Jensen and Mackling (1976) Stohs and Mauer (1996), Venugopalan and Madhu (2014))

5. FINDINGS OF THE STUDY

The descriptive statistics establish that the Indian corporate sector is characterized by moderate level of long term debt maturity and approximately 32% of the debt has maturity more than one year. Findings on growth options and firm size explain that Indian firms have valuable investment options and are subjected to potential underinvestment problems as predicted by the agency cost hypothesis. Firm quality indicates the incidence of high variation in the future abnormal profit across the firms, which is a valid signalling mechanism about the quality of firms to outsiders. Similarly, Indian companies resort to high level of maturity matching of assets and liabilities as a safeguard against the probable bankruptcy. Descriptive statistics also prove that the Indian companies are subjected to high rate of taxation. The high asset volatility reflects the fact that companies employ more short-term debt in their capital structure. Findings on leverage show that the Indian companies employ approximately 20% debt in the capital structure. Person's correlation coefficients validate that growth option, firm size, liquidity risk, asset maturity, asset variance and leverage have significant correlation with debt maturity as predicted by the empirical hypothesis. However, the firm quality has no significant impact on the debt maturity.

The findings from regression analysis prove that the growth option, firm size, asset maturity, and leverage are determinants of debt maturity in Indian companies. This proves that Indian companies are subjected to high level of agency problems and debt maturity is an effective mechanism to mitigate the agency problems. However, the firm quality, corporate tax and asset variance have no significant influence on the corporate debt maturity decisions. The research findings prove that the agency cost hypothesis and matching hypothesis determine debt maturity decision. On the contrary, this research could substantiate that the signalling hypothesis, liquidity hypothesis and tax hypothesis jointly determine the debt maturity decision in Indian corporate sector.

6. CONCLUSION

The debt maturity literature establishes that corporate debt maturity structure is determined by of agency cost hypothesis, signalling hypothesis, liquidity risk hypothesis, matching hypothesis and tax hypothesis. This research paper empirically examines the determinants of debt maturity in the Indian corporate sector by using OLS regression methodology on panel data of 308 firms drawn from BSE 500 for 10 years spanning 2007 to 2017. The findings from regression analysis prove that the growth option, firm size, asset maturity and leverage are the important determinants of debt maturity. However, the firm quality, corporate tax and asset variance have no significant influence on the corporate debt maturity decisions. The research findings empirically prove that the agency cost hypothesis and matching hypothesis determine debt maturity decision. Moreover, the findings also lead to the conclusion that the signalling hypothesis, liquidity hypothesis and tax hypothesis have no influence on the debt maturity decision in Indian corporate sector.

7. LIMITATION OF THE STUDY

The main limitation of the research stems from the scope of the study. The debt maturity literature advocates that the corporate debt maturity be determined jointly by several country and firm specific factors. This paper has restricted the scope of the research to empirically testable and verifiable five principles of debt maturity in Indian corporate sector using the most commonly used proxies as variables.

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HIERARCHY OF COURT IN ANCIENT INDIA & MODERN INDIA JUDICIAL SYSTEM

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ABSTRACT

According to Brihaspati smriti there was a hierarchy of courts in Ancient India beginning with the family court and ending with the king. The lowest was the family arbitrator. The next higher court was that of the judge; the next of the chief justice who was called praadvivaka or adhyaksha; and at the top was the king's court.

The jurisdiction of each was determined by the importance of the disputes the minor disputes being decided by the lowest court and the most important by the king. The decision of each higher court superseded that of the court below.

According to Vachaspati Mishra, "The binding effect of the decisions of these tribunals ending with that of the king is in the ascending order and each following decision shall prevail against the preceding one because of the higher degree of learning and knowledge".

INTRODUCTION

It is noteworthy that the Indian judiciary today also consist of a hierarchy of courts organized an a similar principle the village courts, the mumsif, the civil judge, the district judge, the High court and finally the supreme court which takes the place of the king's court . We are following an ancient tradition without being conscious of it.

The institution of family judges is noteworthy. The unit of society was the joint family which might consist of four generation. Consequently the number of the member of a joint family at any given time could be very large and it was necessary to settle their disputes with firmness combined with sympathy and tact. It was also desirable that disputes should be decided in the first instance by an arbitrator within the family. Modern Japan has a somewhat similar system of family courts. The significance of the family courts is that the judicial system had its roots in the social system which explains it success. The fountain source of justice was the sovereign. In Indian jurisprudence dispensing justice and awarding punishment was one of the primary attributes of sovereignty. Being the fountain source of justice in the beginning the king was expected to administer justice in person but strictly according to law and under the guidance of judges learned in law.

A very strict code of judicial conduct was prescribed for the king. He was required to decide cases in open trial and in the court room, and his dress and demeanor were to be such as not to overawe the litigants. He was required to take the oath of impartiality and decide cases without bias or attachment; says Katyayana "The king should enter the court room modestly dressed take his seat facing east and with an attentive mind hear the suits of his litigants. He should act under the guidance of his chief justice (praadvivaka) judge's minister and the Brahmana members of his council. A king who dispenses justice in this manner and according to law resides in heaven. These provisions are significant. The king was required to be modestly dressed (vineeta- vasha) so that the litigants were not intimidated. The code of conduct prescribed for the king when acting as a judge was very strict and he was required to be free from all "attachment or prejudice" says Narada. If a king disposes if law suits (vyavahara) in accordance with law and is self-restrained (in court) in him the seven virtues meet like seven flames in the fire. Narada enjoins that when the king occupies the judgment seat he must be impartial to all beings having taken the oath of the son of vivasvan. (The oath of vivasvan is the oath of impartiality). The son of vivasvam is yama, the god of death who is impartial to all living being.

THE KING'S JUDGES

The judges and counselors guiding the king during the trial of a case were required to be independent and fearless and prevent him from committing any error or injustice says Katyayana. "If the king wants to inflict upon the litigants (vivadinam) an illgal or unrighteous decision it is the duty of the judge to warn the king and prevent him.

The judges guiding the king must give his opinion which he considers to be according to law. If the king does not listen the judges at least has done his duty. When the judges realizes that the king has deviated from equity and justice his duty is not to please the king for this is no occasion for self speech, if the judges fails in his duty he is guilty .

Delegation of Judicial Power by the King

As civilization advanced the king's functions becomes more numerous and he had less and less time to hear suits in person and was compelled to delegate more and more of his judicial function to professional judges.

Katyana says: If due to pressure of work the king cannot hear suits in person he should appoint as a judge a Brahmin learned in the Vedas. In course of time a judicial hierarchy was created which relieved the king of much of the judicial work, but leaving untouched his powers as the highest court of appeal.

Quality of the Judiciary Integrity

According to Brihaspati : A judges should decide cases without any consideration of personal gain or any kind of personal bias, and his decision should be in accordance with the procedure prescribed by the texts. A judge who performs his judicial duties in this manner achieves the same spiritual merit as a person performing yajana.

The strictest precautions were taken to ensure the impartiality of judges. A trial had to be in open court and judges were forbidden to talk to the parties privately while the suit was pending because it was recognized that a private hearing may lead to partiality. Shukra nitisara says: “Five causes destroy impartiality and lead to judges taking sides in disputes. There are attachment greed, fear, enmity, and hearing a party in private.

Another safeguard of judicial integrity was that suits could not be heard by a single judge even if he was the king. Our ancient realized that when two minds confer, there is less chance of corruption or error and they provided that the king must sit with his counsels, when deciding cases, and judges must sit in benches of uneven numbers. Shukra nitisara enjoined that “persons entrusted with judicial duties should be learned in the Vedas, wise in worldly experience and should function in groups of three, five or seven. Kautilya also enjoined that suits should be heard by three judges. Our present judicial system created by the British does not follow the excellent safeguard. Today every suit is heard by a single munsif or civil judge or district judge for reasons of economy. But the state in ancient India was more interested in the quality of justice than economy.

Integrity

Every smriti emphasizes the supreme importance of judicial integrity. Shukra nitisara says: “The judges appointed by the king should be well versed in procedure, wise, of good character and temperament, soft in speech, impartial to friend or foe, truthful, learned in law, active, free from anger greed or desire and truthful.

Punishment for corruption

Corruption was regarded as a heinous offence and all the authorities are unanimous in prescribing the severest punishment on a dishonest judge. Brihaspati says: “A judge should be banished from the realm if he takes bribe and thereby perpetrates injustice and betrays the confidence reposed in him by a trusting public. A corrupt judge, a false witness and the murderer of a Brahmin are in the same class of criminals. Vishnu says: “The state should confiscate the entire property of a judge who is corrupt. Judicial misconduct included conversing with litigants in private during the pendency of a trial. Brihaspati says: “A judge or chief justice (praadivaka) who privately converses with a party before the case has been decided is to be punished like a corrupt judge.

Jurors

Jurors are the assessors or advisers of the king. They were the equivalent of the modern jury with one important difference. The jury of today consists of laymen – “twelve shopkeepers” whereas the councilors who sat with the sovereign were to be learned in law. Yajñavalkya enjoins: “The sovereign should appoint as assessors of his court persons who were well versed in the literature of the law truthful and by temperament capable of complete impartiality between friend and foe.

These assessors or jurors were required to express their opinion without fear even, to the point of disagreeing with the sovereign and warning him that his own opinion was contrary to law and equity. Katyayana says: The assessors should not look on when they perceive the sovereign inclined to decide a dispute in violation of the law; if they keep silent they will go to hell accompanied by the King. The same injunction is repeated in an identical verse in Shukra-nitisara. The sovereign or the presiding judge in his absence was not expected to overrule the verdict of the jurors; on the contrary he was to pass a decree (jayapatra) in accordance with their advice. Shukra-nitisara says: The king after observing that the assessors have given their verdict should award the successful party a decree (jayapatra). Their status may be compared to the judicial committee of the Privy Council which “humbly advises” their sovereign, but their advice is binding. It may also be compared to the people assessors under the Soviet judicial system that sit with the professional judge in the people’s court but are equal in status to him and can overrule him.

But there was one exception. If in a difficult case the jurors were unable to come to a conclusion the sovereign could decide the matter himself. Shukra-nitisara says, “If they are unable to decide a dispute because it raises difficult or doubtful issues, in such a case the sovereign may decide in the exercise of his sovereign privilege.

Criminal trial

In criminal trials it appears that the question of innocence or guilt of accused was decided by the judge or the jurors, but the quantum of punishment was left to the king. In the trial scene in *Mirchchhakatika*, the little clay court, the judges after pronouncing Charudatta guilty of the murder of Vasantasena referred the question of punishment to the king with the remark. "The decision with regard to Charudatta's guilt or innocence lies with us and our decision is binding, but the rest lies with the king."

Interpretation of the text of the law

Principles of interpretation were developed to a high degree of perfection. Judges were required to decide cases, criminal and civil according to law. This involved interpretation of the written text of the law a task which created many problems such as the elucidation of obscure words and phrases in the text reconciliation of conflicting provisions in the same law, solution of conflict between the letter of the law and principles of equity justice and good conscience, adjustment of custom and *smritis* and so on. This branch of law was highly developed and a number of principles were enunciated for the guidance of the court. The most important of them related to the conflict between the *dharma-shastra* and the *artha-shastra*.

Three systems of substantive law were recognized by the court, the *dharma shastra*, the *arthashastra* and custom which was called *sadachara* or *charitra*, the first consisted of laws which derived their ultimate sanction from the *smritis* and the second of principles of government. The border line between the two often overlapped but the real distinction between the *smritis* and *arthashastra* is uniformly secular, but that of the *dharma shastra* not always so. In fact so remarkably secular is the *arthashastra* in its approach to the problem of government that this has induced some writers to advance the theory that the *arthashastra* did not evolve from the *dharma shastra* but had an independent origin and developed parallel to it.

In several matters the *arthashastra* and the *dharma shastra* are in conflict. How did the law courts resolve this conflict when it arose in particular suits? The first principle was that of *avirodha*. The court must try to resolve any apparent conflict could not be resolved; the authority of the *dharma shastra* was to be preferred. *Bhavishya purana* provides "when *smriti* and *arthashastra* are inconsistent, the provision in the *arthashastra* is superseded (by *smriti*) but if two *smritis*, or two provisions in the same *smriti* are in conflict, whichever is in accordance with equity is to be preferred. *Narada smriti* lays down a similar rule of interpretation according to reason in case of conflict between two texts of the *smritis*. But while interpreting the written text of law, the court was to bear in mind that its fundamental duty was to do justice and not to follow the letter of the law. *Brihaspati* enjoined: "The court should not give its decision by merely following the letter of the *shastra* for if the decision is completely devoid of reasoning. The result is injustice. *Brihaspati* further says that the court should decide according to the customs and usages of the country even if they are in conflict with the letter of the law, and he gives several remarkable illustrations which incidentally throw a flood of light on contemporary social conditions."

Changing Customs

In view of the vital part played by custom (*achara*, *sadachara*, *charita*) in society, the state was required to maintain an authenticated record of the customs observed in the various parts of the country. *Katyayana* enjoins "whatever custom is proved to be followed in any particular region it should be duly recorded as established in a record stamped with the seal of the sovereign. But even an established custom could be formally "disestablished" if in course of time it became inequitable. In fact it was the duty of the sovereign to remove from time to time the dead or rotten branches of custom. *Katyayana* enjoined "when the sovereign is satisfied that a particular custom is contrary to equity (*nyayatah*) in the same way that it was established it should be annulled by a formal decision of the sovereign. This remarkable provision indicates how highly developed was the judicial and legal system of ancient India. The state was required to keep an authenticated record of all valid customs prevailing in the different regions of the realm."

Narada says

The basis of a judicial decision may be (1) *Dharma-shastra* (2) previous judicial decisions or custom of the decrees of the sovereign. The authority of these four is in the reverse order, each preceding one being superseded by the one following it.

EVOLUTIONARY CONCEPT OF LAW

The significance of these provisions can not be over emphasized by gearing law to changing customs. Indian jurisprudence gave the concept of law a secular content. Moreover it developed the evolutionary concept of law and rejected the concept of an absolute eternal, never changing law. Both *Manu* and *Parashara* say: "The law of *kritayuga* is different from those of *treata* and *dwapara*, and the laws of *kaliyuga* are different from those of all

the previous; ages the laws of each age being according to the distinctive character of each age (Yuga, Roopana Saratah).

DUTIES OF JUDICIAL ASSEMBLY

First and foremost duty of the king and judicial assembly is to dispense “justice dutifully” when justice is dispensed properly, then the whole court of justice is said to be cleared from guilt. Purity of assessors and the king depends on the just sentences they pass. Asahaya observes that if the king decides the lawsuit justly then the assessors obtain their absolution through the just decision.

Narada describes the situation where justice is marred by injustice and truth marred by untruth and members of the court feel no difference between justice and injustice, in such a situation members of the court are doomed to destruction themselves.

Manu says, “where justice is destroyed by injustice or truth by falsehood, while the judges look on, there judges also shall be destroyed. Manu further says, “If justice is violated, it destroys the one who violates: if justice is preserved, it protects one who preserves it. Precisely, the king and assessors should not allow injustice to happen in their court of law.

Narada compares injustice with a dart, when it enters the court of justice, i.e when the assessors behave unjustly. This dart of injustice hits them when a member of a court of justice passes an unjust sentence because of wrath, ignorance or covetousness, he is declared unworthy to be a member of the court of justice and the king shall punish him, so the assessors not only obtain sin but get punishment in this world also, which they should fear and therefore dispense proper justice. Narada’s view is very much identical to that of Manu, Manu states, “where justice wounded by injustice approaches and judges do not extract the dart they also are wounded by the dart of injustice.

Injustice, when it occurs in the court of law the guilt of this inequity goes to the four, one quarter of the guilt goes to the offender, one quarter goes to the witness, one quarter goes to the members of the court and one quarter goes to the king. When the guilty person or true offender is punished and proper justice is done, then the king is freed from the responsibility, members of the court obtain their absolution and the guilt goes to the offender only. Offender is the only guilt person and that is why plaintiff lodges the plaint. If the members of the court of justice along with the King are unable to find the truth, then they also become the accomplices of the offender and the guilt goes to them also. When the truth is found out and the true offender is punished, then his guilt remains with him only. The blame does not attach to anyone else. This is specifically stated by Narada, because if justice is denied by the king, then the plaintiff has nowhere to go. Therefore the chief judges should extract the dart of inequity from the lawsuit.

The true notion of justice is when every member of the assembly accepts justice as true, every member after thinking and proper investigation comes to the conclusion one. Then only it can be said that justice is done and lawsuit loses the dart of injustice. Narada finally speaks about the true nature of the court of justice he states that, that is not a judicial assembly where there are no elders. They are not the elders who do not pass a just sentence that is not a just sentence in which there is no truth that is not truth which is vitiated by error.

The court presided over by the king was the highest court. There were other courts some of them appointed by the king and the other which were people’s court recognised by the smriti as having the power to administer justice.

1. Kula (gatherings or family councils)
2. Shreni (corporation)
3. Gana (Assembly)
4. Adhikrita (court appointed by the king)
5. Nripa (king himself)

As per Brihaspati point of view partistitha is a court which is established at a particular village or town. Apratistitha is a mobile court moving from village to village. Mudrita is a court appointed by the king and authorized to use the royal seal. Sasita is the court over which the king himself presided.

THE PEOPLE’S COURTS

- (1) Kula:- An assembly of impartial persons belonging to the family or caste of the litigants functioning as panchyatdars or panchyat mandali to decide disputes among those belonging to the same family or caste.

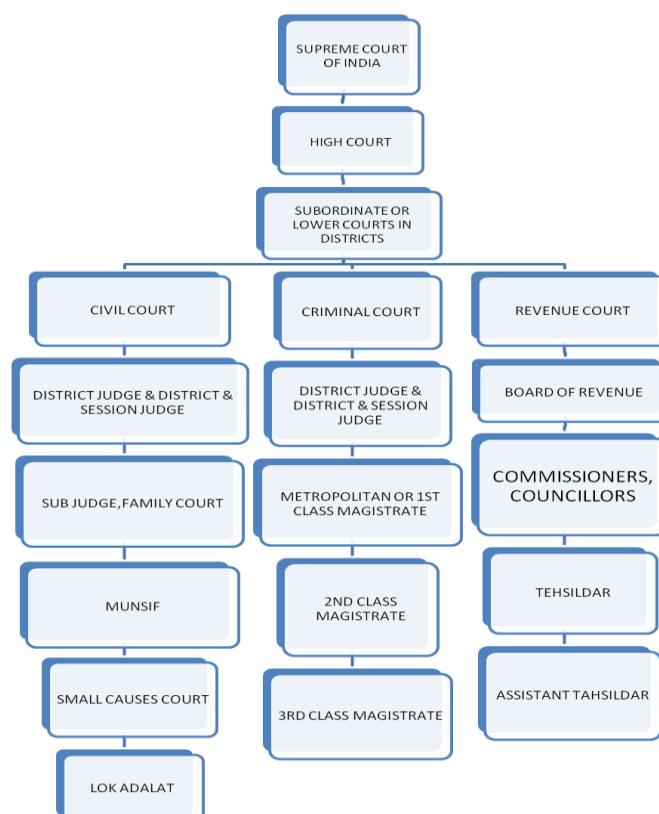
- (2) Shreni:- Corporation of persons following the same craft, profession or trade.
- (3) Gana:- Assembly of persons belonging to one place but to different castes or following different avocations.
- (4) The kings court:- Sasita or the court over which the king presided, was the highest court in any kingdom. This court according to the smritis was to be situated at the capital city and in the royal place. Brihaspati states: The king the chief justice and the sabhyas are the judicial officers of the court. The Ganaka (Accountant), the lekhaka (scribe) and the swapursha (Bailiff) are the non judicial officers of the court.
- (5) The smritis, gold, fire and water are the four things which should be kept ready in the hall of justice.
- (6) The king is invested with the power of passing final decrees. The chief justice has to give his final opinion in the cases and the duty of the judges is to investigate the merits of each case.

During the medieval period immediately preceding the British rule, Muslim system of Government came to be established in several parts of the country. The medieval judicial system was based on Islamic law that divided the people into two classes, namely believers and non believers. Four types of courts were established under the moghuls: canon law courts, revenue courts, civil courts and criminal courts. The judicial system however was not well organized, jurisdiction and powers were not demarcated and hierarchy was not definite during this period.

During the British rule in India the traditional India judicial system was reorganized by the British authorities on the basis of Anglo-saxon jurisprudence Royal charter granted in 1726, during the reign of George-I established Mayor's courts in the presidency towns of Madras, Bombay and Calcutta. The Regulating Act 1773 established the Supreme Court at Calcutta in 1773. Indian judicial system during this period consisted of two systems of courts: supreme courts in the presidency towns of Calcutta, Madras and Bombay and sadar courts in the provinces. In 1861 three high courts were established. In true with the changing times, a legal and judicial system developed into a well organized modern system of law and administration of justice which India inherited on its becoming independent.

MODERN JUDICIAL SYSTEM AND JUDICIARY IN PRESENT

There is a union government at the central level and there are state Government of the constituent units at states level. Both the central government and the state government derive their powers from the constitution and there is division of powers between the union and the states. But the distinct feature of our judiciary is that it has a single unified and integrated judicial system for the whole country. The Supreme Court is the highest court at the apex and down below there are several high courts and subordinates or lower courts. Which function in different parts of India.



THE SUPREME COURT

The supreme court of India is the highest court in the country its seat is at New Delhi But it can meet at any other place also.

Organization

At present there is a chief justice and 25 other judges in the supreme court. The parliament has the power to increase the number of its judges. The chief justice and other judges of the supreme court are appointed by the president. While appointing the chief justice, the president consults such other judges as he deems proper. The outgoing chief justice is always consulted. Normally the senior most judge of the Supreme Court is appointed as the chief justice of India. While appointing other judges, the president is bound to consult the chief justice. He may also consult such other judges as he deems necessary.

HIGH COURT

At the apex of the state judiciary is the High court. It is a court of record and not subject to the superintendence of any court or authority, though appeals from its decision may lie to the Supreme Court. It consists of a chief justice and as many judges as the president of India may sanction. The number varies from 36 for the Allahabad high court to 3 for Assam. The chief justice is in-charge of the administrative work of the court and distributed judicial work among his companion judges. He is also consulted in the appointment of judges in his own court. But while sitting in court his judicial status is no higher than that of any other judge and his decision can be reserved by any two judges in special appeal and if sitting on a bench of three judges he can be overruled by his colleagues. He has no administrative control over any judge and his status may be described as *primus inter pares*.

The high court hears appeals or revision from the decisions of all subordinate courts, civil and criminal. In addition, it has original jurisdiction in matrimonial, company and testamentary cases. A special jurisdiction was conferred on all high courts by Article 226 of the constitution, empowering them to prevent the infringement of fundamental rights of citizens and other rights by issuing writs of habeas corpus, quo warranto, prohibition, certiorari, mandamus or any other orders of direction. In the exercise of this power the high court can restrain the state from interfering unlawfully with the rights of any citizen and invalidating any act or order already done or passed. It can declare invalid any law passed by parliament or the state legislature in violation of the fundamental rights of any citizen. The remedy under article 226 has proved to be a very popular remedy and several thousands of petitions are filed every year by citizens throughout India for the protection of their rights.

INDEPENDENCE OF JUDGES

The principle of judicial independence was fully understood and enforced in ancient India. Katyayana and all other law givers emphasized the supreme importance of judges being independent and fearless even of the king. The constitution of India adopted the English doctrine of security of tenure and a high court and supreme court judge can be removed only on the ground of proved misbehavior or incapacity and after each house of parliament has passed by a two-third majority an address to the president for his removal.

SUBORDINATE COURTS

In each district of India there are various types of subordinate or lower courts. They are civil courts, criminal courts and revenue courts. These courts hear civil cases, criminal cases and revenue cases respectively.

(a) Civil Courts

Civil cases pertain to disputes between two or more persons regarding property, breach of agreement, divorce or landlord-tenant disputes.

(b) Criminal Courts

Criminal cases relate to violation of laws. These cases involve theft, dacoity, rape, arson, pick pocketing, physical assault, murder etc. In such cases the guilty person is awarded punishment like fine, imprisonment or even death sentence.

(c) Revenue Courts

Revenue cases relate to land revenue on agricultural land in the district.

Civil Court

The court of district judges is the highest civil court in a district to deal with civil cases. Very often the same court is called the court of district and session judges, when it deals with both civil and criminal cases at the district level. The judge of this court is appointed by the governor of the state. Below the court of district judge, there may be one or more courts of sub-judges in the district, separate family courts which are equal to courts of

sub judges have been established in districts to exclusively hear cases of family disputes like divorce, custody of a resolution is adopted by both the houses of parliament by a two third majority separately by each house.

Judiciary has maintained its ancient tradition after the attainment of freedom the Indian judiciary has maintained the ancient Indian tradition of judicial independence and integrity. The Supreme Court has set the pace and its record of independence is second to none in the world. The High courts too, on the whole have maintained a high degree of independence and cases of judge's carrying favour with the executive have been rare. The highest praise must go to our subordinate judiciary- the munsifs. Civil judges and district judges who have dispensed impartialities and castes and whose record compares very favorably with that of British judges who were not always impartial between Indian and British litigants, Indian judges have lived up to the injunction of Brihaspati that a judge should decide cases without any motive of personal gain or prejudice or bias and his decision should be in accordance with the law prescribed by the text.

FUTURE ROLE OF INDIAN JUDICIARY

What shall be the role of our judiciary in the coming social and economic revolution? The judicial system does not operate in a vacuum. The administration of justice has a social function and the judicial process is only a part of the larger social process. Therefore the courts of law cannot function in defiance or ignorance of the social objects or "the felt necessities of times" as Mr. Justice Holmes called them. The justice must be done through the beams may fall emphasizes the impartiality of the judges but does not permit the judiciary to be indifferent to social needs. In theory the judiciary does not legislate; it only states what the law is. But as Goethe observed: "the facts of life are more potent than abstract theories". In practice the judicial process is infinitely more complex than the bare theory of separation of powers. The judges cannot help making the law while interpreting it under the guise of explaining the law the U.S Supreme Court delivered opinions which affected the destinies of the American people. A former Attorney General of the United States writes of the U.S Supreme Court.

This court has repeatedly overruled and thwarted both the congress and the executive. It has been in angry collision with the most dynamic and popular president's in our history. Jefferson retaliated with impeachment; Jackson denied its authority; Lincoln disobeyed a writ of the chief justice; The odor Roosevelt proposed recall of judicial decision; Wilson tried to liberalize its membership; and Franklin D. Roosevelt proposed to reorganize it. It is surprising that it should not only survive but with no might except the moral force of its judgment, should attain actual supremacy as a source of constitutional dog ma.

"A Surprise turn to amazement when we reflect that time has proved that its judgment was wrong on the most outstanding issue upon which it has chosen to challenge the popular braches. Its judgment in the Dred Scott case was overruled by war. Its judgment that the currency that preserved the union could not be made legal tender was overruled by the sixteenth amendment. Its judgment repressing labor and social legislation are now abandoned. Many of the judgments against New Deal legislation are rectified by confession of error. In no major conflict with the representative branches on any question of social or economic policy has time vindicated the court.

The role of Indian judiciary cannot be isolated from the social objectives of the nation our constitution has; set before the Indian people the ambitious goal of achieving a synthesis of the western and the communist way of life, individual liberty and social control, abolition of anarchy in production and preservation of democracy in government in a word of political and economic freedom. Today the words "economic planning" and "political democracy" are accepted on both sides of the so-called iron curtain. Our constitution attempts to achieve a synthesis of the two. It reflects the spirit of non- alignment in the field of constitutional law. Social control of industry is in accord with the Indian tradition. Ancient India has a huge public sector, and the Arthashastra prohibits such trade practices as cornering the market to raise prices.

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IMPACT OF DIGITAL MARKETING ON CONSUMER BUYING DECISION

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ABSTRACT

The investigation manages the advanced advertising whereby it clarifies the effect of digitalized advances on buyers, idea and attributes of advanced showcasing correspondence and contemporary computerized channels of correspondence. This examination additionally clarifies the advanced advertising patterns in Indian market. The section quickly portrays the reason, criticalness, degree and association of the examination. A descriptive study was conducted to understand the impact of digital marketing communication on buying decision process in Indian passenger car market. Mixed methodology was used for the study. Population proportion approach was used to determine the sample size and area wise proportionate sampling method was used to collect the data. A significant association was found between age, occupation and gender of the respondents with channel of communication while buying a car. Car buyers had favorable attitude towards digital marketing communication and considered using digital marketing communication a good idea while buying a car. Marketers can use these important insights in framing effective strategies especially while deciding advertising appropriation, targeting specific customer segments and understanding decision making process of car buyers.

Keywords: Digital Marketing, Passenger

INTRODUCTION

Unremitting technological changes are significantly altering the behavior of the consumers across the globe. Pervasive, inexpensive, compatible, easy and advanced technology has urged customers to become smarter, informed, connected, updated, and empowered (Miller, Michalski and Stevens, 1998; Prahalad and Ramaswamy, 2004a). Consumers have become „prosumers“ whereby consumers are not only at the receiving end but are also getting actively involved in co-creating, customizing and passionately promoting the marketing content in socially connected era (Bollier, 2007; Gerhardt, 2008). Marketers have also understood and appreciated the change brought by technology that has been registering its stark presence among the consumers. This change is affecting the lives of both the marketers and consumers in concrete ways. The greatest example of change is the „internet“ that has significantly altered the ways of communication, sharing and finding information and doing business. Digital technologies, particularly the internet, has transformed the every aspect of business namely the business communication, branding, product management, supply chain management, buying and selling and customer relationship management to name a few.

DIGITAL MARKETING: THE CONCEPT

Advanced showcasing as an idea is utilized diversely by various individuals. Commonly it is utilized synonymously with „internet or web marketing“, „e-marketing“, „ecommerce“ and „e-business“. In spite of the fact that, these terms are between related, yet there falsehoods a distinction among every one of the terms (Rowan, 2002). Web showcasing alludes to the advancement of merchandise and ventures over web requiring a continuous live web association (Hanson and Kalyanam, 2007). E-business is a more extensive term that bargains with utilization of innovation in business's interior procedures and exchanges with outsider. It includes web based business which speaks to its trade side and e-promoting which incorporates its advertising side. E-showcasing otherwise called „electronic marketing“ makes utilization of web and advanced advances and includes the advancement of products or administrations through electronic techniques or media (Hoge, 1993). Rowan (2002) characterized e-marketing as routine with regards to utilizing data innovation for finishing the advertising procedure that includes creation, correspondence and conveyance of significant worth to clients alongside overseeing client connections (Sheep, Hair and McDaniel, 2001). Online business which mirrors the business side of the business alludes to purchasing and offering utilizing the web and includes the money related exchanges utilizing electronic media.

The term „digital“ can be defined as a data transmission technology which is finite and non-variable in nature (Kaufman and Horton, 2014). Digital is expressed in contrast to „analog“ which is a continuous data transmission technology.

Digital communication has the characteristics of being informative, interactive, responsive, compatible, measurable, quick, cost effective, and versatile and customized (Merisavo et al. 2007). Digital marketing facilitates communication at a faster pace and reaches more number of people than traditional marketing communication.

Digital marketing communication banks heavily upon data storage* and data mining* to function effectively. Data storage and data mining unveils the most profitable customer segment, product and territory, potential customers, opportunities for cross and up-selling*, most effective promotional media, most appropriate pricing policy and most desirable distribution channel for a marketer.

Measurability of the digital medium allows marketer to track the important parameters related to consumer behavior which deals with the keywords used for searching information, type of digital channel used to obtain information, time spent on particular website, frequency of visit, sharing of digital content, amount and time of purchase, details of conversion, demographic details and others (Ryan and Jones, 2012). The tracking is made possible by use of many analytical tools available in the market with „Google Analytics“ being the most popular. Digital marketing communication is very cost effective in comparison to traditional marketing. Digital communication can reach more number of people than the traditional marketing communication at a very reasonable cost. Digital marketing techniques which include content marketing, MMS, SMS, search engine optimization, search engine marketing, social media marketing and channels like websites, online forums, e-mails and others are not very costly to create and maintain. Moreover, advertising over digital platforms are usually charged as per pay per click method which is also more cost effective than traditional commission method.

LITERATURE REVIEW

Researchers have also expressed their united opinion about the capabilities of digital marketing which include enabling customer participation in the form of creation and sharing of digital content, initiation of a dialogue and giving feedback which ultimately empowers the customers whereby they can choose and demand the content of their choice and can also exercise the control over the marketing communication (Dahiya, 2013). This section briefly explains the characteristics of digital marketing communication which make it desired communication channel of modern era.

Syme (2015) defined relevance in social media as delivering information at the right time, right place, to the right consumer through the right device. He further explained that relevance deals with strength of relationship whereby marketer truly understands its consumers, their needs, reasons of buying and value perception of consumers about marketer's products and services. Major search engine Google and social networking giant „Facebook“ use special kind of „relevance algorithms“ and scores to deliver the relevant content to the consumers

Klososky (2012) in his study concerning social networking sites examined that digital technologies create the conversation and build on-going relationship with customers at comparatively inexpensive cost.

Jayawardhena et al. (2003) suggested that stimuli that trigger need recognition might come from a number of diverse sources that could initially be either online or offline; especially as many organizations use both channels for communication. Online marketers might influence the buying decision process of online consumers by using traditional marketing in combination with adequate online experience or web experience (Constantinides, 2004).

Hausman (2014) in the study concerning impact of social media on consumer decision making process stated that social media shape the needs in the recognition stage and even set a kind of norms for the people in the group over social media.

OBJECTIVE OF THE PAPER

- To know the demographic profile of the customers using different digital channels while buying a car.
- To identify the preferred digital channels used by the consumers while buying a car.
- To measure the consumers' attitude towards digital marketing communication in Indian Car Market.
- To understand the impact of digital marketing communication on consumer buying decision making process in Indian Car market.

RESEARCH METHODOLOGY

The present study is "empirical" in nature which aimed to understand the impact of digital marketing communication on consumer buying decision process on the basis of knowledge derived from actual experience rather than theoretical beliefs. Empirical studies of such nature normally measure the observed phenomenon and bank heavily upon the primary data to arrive at the conclusion. The theory was developed on the basis of secondary data obtained from secondary sources like books, journals, magazines and internet.

SAMPLING PLAN

Sample Methods - Random Simple Sampling,

Sample size - 100

Primary data - Questionnaire

Secondary data - Books, journals, magazines and internet

SAMPLE

While deciding about the sample of research, it is required from the researcher's point to pay attention to these under mentioned points:

- a) Source of data: Data required for the study was collected through primary sources
- b) Sampling size: This refers to the no. of items to be selected from the universe to constitute a sample. This is a major problem before the researcher. The size of sample should neither be excessively large nor too small, it should be optimum. This size of population must be kept in view for this also limits the sample size. Sample size in this research is 100.

INSTRUMENTS USED

Primary data collected through sample survey from the selected elements. So for this purpose I have used the most popular tool of primary data collection through direct communication with respondents.

METHOD OF DATA COLLECTION

Actually data is of two kinds which are following-

- a) Primary Data: Primary data are those, which are collected afresh and for the first time and this happens to be original in character.
- b) Secondary Data: Secondary data are those data which have already been collected by someone else and which have already been used as per required.

There are basically two sources to collect secondary data

- a) Internally: Provided by the company/organization
- b) Externally: Various publication of central, state and local Government.
 - Books, magazines, newspapers
 - Internet

After only keeping in mind one can think about what type of data has to be collected during research as our research is concerned I have to gather primary data for Customer preference.

OVERVIEW OF THE STUDY

Consumer buying decision process can be understood with the help of five stages of decision making process including need recognition, search for information, evaluation of alternatives, selection and purchase and post purchase. The impact of digital marketing communication was assessed on each stage of consumer buying decision process by making respondents rate the statements pertaining to each stage.

Although available literature has demonstrated that digital channels of communication were informative, interactive, relevant, compatible and easy to use and facilitated easy comparison; still there were not enough numbers of studies establishing the specific reason(s) for use of a particular digital channel of communication. The present study aims to understand the reason(s) leading towards the use of particular channel of communication while buying a car. Discriminant analysis was applied as test of significance to arrive at conclusion. Important characteristics of digital marketing communication revealed from the literature review were used as predictors, discriminating or independent variables and usage of each digital channel was used as dependent variable. The test intended to reveal which particular characteristic of digital marketing communication would facilitate the usage of particular digital channel of communication.

- (1) **Websites:** Compatible, Informative and Easy to Use Websites, one of the most important digital channels of communication was analyzed to determine the characteristics which would assure its use as a digital channel of communication while buying a car
- (2) **Social Networking Sites:** Informative, Relevant and Easy to Use Digital marketing communication characteristics successfully discriminated between use and non-use of social networking sites while buying a car.

- (3) **YouTube:** Compatible, Informative and Relevant Digital marketing communication successfully discriminated between the use and non-use of YouTube, the largest video sharing site.
- (4) **Phones:** Easy To Use Digital marketing communication characteristics failed to discriminate between the use and non-use of mobile phones as a digital channel
- (5) **Smartphones:** Informative, Quick and Interactive Characteristics of digital marketing communication successfully discriminated between the use and non-use of smartphones.
- (6) **OnlineCommunities:** Availability of Customers' Reviews and Expert Advice Digital marketing characteristics productively discriminated between use and non-use of online communities as a digital channel while buying a car
- (7) **Digital Outdoors:** Informative Digital marketing characteristics successfully discriminated between use and non-use of digital outdoors as a digital channel while buying a car.
- (8) **Digital TV:** Easy to Use and Quick Easy to use was the most important digital marketing communication's trait that successfully discriminated between the use and non-use of digital TV as a digital channel of communication while buying a car
- (9) **Emails:** Informative and Relevant Being informative and relevant were the most important digital communication's characteristics that successfully discriminated for the likely usage of emails as digital channel of communication while buying a car
- (10) **Others:** Informative Digital marketing communication characteristics failed to discriminate between the use and non-use of „others" channels of communication as a digital channel

FINDINGS OF THE STUDY

The study aimed to describe the demographic profile of consumers using digital channels of communication, the most preferred digital channels of communication, consumers' attitude towards digital marketing communication, impact of digital marketing communication on consumer buying decision making process and the factors which could be leveraged by the car marketers to effectively their brand in Indian car market.

1. Male respondents used digital channels of communication more than the female respondents.
2. Association of occupation and gender was also seen with particular digital channel of communication and it was found that respondents belonging to service occupational category used mobile phone as a digital channel of communication while buying a car.
3. The study identified three distinct customers' segments/clusters that used digital channels of communication while buying a car.
4. It was found from the study that digital channels were emerging as major source of communication while buying a car.
5. Website was the most used digital channel of communication while buying a car used by an overwhelming majority (87%) of the respondents followed by social networking sites, used by less than majority (45%) of the respondents and smartphones used by 43% of them.
6. „YouTube" was used by 41% of respondents while buying a car. Email was used by an insignificant percentage (4%) of the respondents and emerged as the least used digital channel of communication while buying a car.
7. A vast majority (72%) of the respondents agreed that digital marketing communication is informative in nature facilitating easy evaluation of car brands.
8. Digital marketing communication was considered being interactive by a vast majority (73%) of the respondents.
9. Relevant nature of digital marketing communication was acknowledged by a vast majority (69%) of respondents.

IMPACT OF DIGITAL MARKETING COMMUNICATION ON CONSUMER BUYING DECISION PROCESS

1. Digital marketing communication had an effect on the need recognition stage of consumer buying decision process by making them aware of their needs of buying a new car.

2. The usage of digital channel of communication was higher in comparison to traditional communication channel while buying a car
3. Respondents preferred digital channels for information search because they believed digital channels were easy to use and interactive in nature.
4. Digital marketing communication helped respondents in evaluation stage by offering them easy access to experts' advice.
5. Vital marketing communication affected the selection and purchase stage of car buying decision process by assisting in easy selection of car brands.
6. The association of various digital channels with stages of consumer buying decision process was seen and it was observed that social networking sites were used the most by the respondents in need recognition stage
7. YouTube was used the most in selection and purchase stage of buying decision process

FUTURE OPPORTUNITIES OF DIGITAL MARKETING

Marketers are expected to take full control of the customer experience in the coming years

1. **Drastic changes in traditional marketing-** The previous traditional set of marketing was limited to door to door and mouth publicity. Previously the marketers were using physical manpower to promote their products. But now with the changing times, people want everything at their fingertips. And fulfilling the needs of the customers is the highest priority of every business. So the trend of digital marketing took off a few years back. Now that even the smallest thing can be found on the internet. People and the marketers are really going gaga over this digital marketing trend.
2. **Social Media will take over the world-** Social media will continue to make its presence known in every area of our lives and become truly integrated with both on and offline services.
3. **Rise of Micro-Influencer Marketing-** Influencer marketing has already grown huge in recent years with top influencers on platforms like Instagram and YouTube attracting millions of followers and making a six-figure income from their deals with brands. However influencer marketing is still in its infancy and while it offers great ROI compared to more traditional advertising channels, there are some issues to be ironed out.
4. **Going back to basics of employee motivation-** Of course all these advances in technology are very exciting, but we shouldn't lose sight of the basic principles that make for a great marketing strategy, and a great company. Employee activation will enable your organization to get the best out of every employee, who will act as ambassadors for your brand and grow sales and conversions in a genuine and authentic way that's more effective than any advertising campaign could ever be.
5. **Institutional coming up with Digital Marketing Courses-** Many institutions are nowadays introducing degree courses in digital marketing that has a practical approach. The academic courses are residential and online both.

CONCLUSION

Digital marketing communication has number of characteristics that make it the preferred communication alternative of modern era. The impact of digital marketing communication has been significant in categories like electronics, fashion, online music and games and many others. India, with the increasing number of internet users, rural population joining the digital revolution, decreasing data prices, internet enabled cheap priced devices and overall enthusiasm around digital platforms, technology and devices; has put itself one of the leading countries on global platform in terms of digital statistics. Indian passenger car market has been one of the largest digital spenders for last decade and consumers are resorting to digital platforms for completing important activities before buying a car. It is concluded from the study that digital marketing communication is affecting the consumer buying decision process while buying a car.

According to the study, website emerged as the most used digital channel of communication while buying a car followed by social networking sites, smartphones and „YouTube“. Digital marketing communication has eased the evaluation process by facilitating easy comparison which also helped respondents making an informed decision. Respondents also altered their selection in terms of dealers, brands and models after researching online about the vehicle. Respondents paid greater attention to other customers' reviews rather than marketers' claims while making a car buying decision. Respondents also appreciated the use of digital communication while buying a car. Respondents however, were hesitant in making online payment for booking of the car. The study also detailed the reasons for use of various digital channels in car buying decision process. The study revealed

the important customer segments that are most likely to use digital channels of communication while buying a car.

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MEDICAL TOURISM: EMERGING CHALLENGES AND OPPORTUNITIES FOR INDIAN HEALTHCARE INDUSTRY

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ABSTRACT

India is emerging as a prime vacation spot for fitness and contributing loads towards the social financial development of the society by enhancing employment opportunities and an increase in forex incomes and supporting in uplifting the residing standards of the host network through growing infrastructure and high great education machine. Today Indian hospitals are nicely prepared with the modern-day generation and homes exceedingly certified and skilled body of workers which could offer timely and nice clinical remedy to patients

Present paper highlights the potential of Medical Tourism industry in India It also enables in introspecting the Hospital Accreditation machine for Medical Tourism, analysing the function of Government in selling infrastructure for Medical Tourism and analysing the brand new fashion to increase the waft of Medical tourism. For reading the potential and importance of medical tourism in India, the information has been accrued through secondary assets which consist of Books, Magazines, Journals, E-Journals and web sites and so on. After analysing all the records, it could be concluded that India is in an high quality role to faucet the worldwide opportunities in the scientific tourism area. The authorities' function is crucial to the improvement of medical tourism. The authorities ought to take steps within the role of a regulator and mechanisms need to be advanced to permit quicker visa grants to overseas travellers for clinical functions wherein patients can contact the Immigration Department at any factor of access for quick clearance.

Keywords: Medical Tourism, Medical Tourist challenges and opportunities, tourism Policy.

INTRODUCTION

Medical tourism is a unique shape of area of interest tourism gradually turning into popular inside the gift global and India has emerged as a famous vacation spot for offering Global standards of fitness care at less costly fees. It mixes enjoyment, a laugh and rest collectively with wellness and healthcare. Within Asia, India, Thailand and Singapore are the three international locations that obtain maximum clinical travellers thanks to low cost of remedy, best healthcare infrastructure, and availability of extraordinarily skilled docs. More these days there has been a spatial shift in medical journey mainly to Asian international locations from advanced economies. Presently Indian health care region is taken into consideration certainly one of the biggest tourism quarter in terms of both sales and body of worker's employment.

The World Tourism Organization defines tourists as people who "travel to and Stay in places outdoor their ordinary environment for now not a couple of consecutive 12 months for enjoyment, business and different purposes now not associated with the exercise of an interest remunerated from within the region visited". Tourism has turn out to be a popular international leisure activity. Medical tourism, instead called health tourism and well-being tourism, is a term that has risen from the fast increase of an industry wherein people from all over the global are journeying to other countries to acquire clinical, dental, and surgical care at the same time as at the identical time traveling, vacationing, and completely experiencing the sights of the countries that they're journeying. More lately the phrase "Global Healthcare" has emerged, and may update the earlier phrases. Such offerings normally consist of elective processes in addition to complicated specialized surgeries inclusive of joint replacement, cardiac surgical treatment, dental surgical operation, and beauty surgical procedures. The provider and patron use casual channels of verbal exchange connection-settlement, with much less regulatory or prison oversight to guarantee best and much less formal recourse to compensation or redress. The domestic clinical enterprise in India is attempting all out to grab its pie from the evolving worldwide health bazaar.

REVIEW OF LITERATURE

Connell (2006) describes medical tourism as a famous mass way of life in which humans journey to overseas international locations to acquire healthcare offerings and facilities consisting of medical, dental and surgical care while having the possibility to go to the vacationer spots of the country. **Carrera and Bridges** (2006) have defined medical tourism as travel that is systematically planned to preserve one's bodily and intellectual fitness condition.

Bookman & Bookman (2007) have described scientific tourism as tour with the aim of enhancing one's fitness, and additionally an economic activity that includes change in offerings and represents sectors: medicine and tourism.

Medical tourism according to Dhaene (2009) is seeking out available quality blended with price powerful and low charge fitness offerings at the same time as supplying a similar stage of safety to the affected person. It has grown to be 60 billion US dollar with growing charge approximately 20% via a 12 months that could increase to one hundred billion US dollar by 2012. (Herrick, 2007)

Monica (2007) has described that scientific tourism occurs whilst global sufferers tour across obstacles for their healthcare and medical desires. It can be described as provision of price powerful personal medical care in collaboration with the tourism industry for sufferers desiring surgical and different forms of specialized treatment.

Kumar, G.S. And Raj. R.K.(2015)6 performed their look at to research the status, boom and effect outcomes of clinical tourism in complimenting the growth of lodge enterprise business in India. During their statement they observed massive increase of scientific tourism in India on the fee 30 % in 2015. They additionally highlighted various demanding situations also confronted via Indian clinical enterprise like no put up remedy care feasible whilst required, Poor power deliver, problem of insurance cowl, inequalities in government and personal hospitals, lack of industry requirements, mind drain and increased costs for nearby people.

Benur, S.(2014) said in his paper that World-elegance remedy, excessive intellectual professional and certified professional medical doctors, incredibly advanced healthcare infrastructure and Booming software program enterprise have contributed for the boom of scientific tourism in India. Low operating costs, high sources & surprisingly qualified English-speaking manpower have made India the hub for Research & Development as well as scientific trials, also contributing mostly to the healthcare infrastructure. He counselled stakeholders of medical tourism to combine their efforts to obtain higher earnings and extra marketplace share

OBJECTIVES

In this paper, a try has been made to focus on the demanding situations and opportunities of Medical Tourism industry in India. Furthermore, it offers the numerous projects taken by Government of India to promote medical tourism in the country.

RESEARCH METHODOLOGY

Research method is in part descriptive, partially exploratory and partially informal. For this look at facts and facts has been gathered with the assist of Books, Magazines, Newspapers, Research Articles, Research Journals, E-Journals, Report of Ministry of Tourism, Report of World Travel and Tourism Council and the internet site www.Fitness-tourism-india.Com and so on.

NEED FOR MEDICAL TOURISM

There are several reasons for the growth in clinical journey. First, the demographics of the advanced countries are inflicting a full-size growth in call for fitness care. In Japan, the US of America, the UK and plenty of different European countries, the proportion of the populace older than 60 years, with regards to the whole populace, is increasing swiftly. Similar tendencies are being visible in many nations across the world. At the equal time, life expectancy in maximum nations has additionally accelerated step by step through the years; the combined end result is massive strain on countrywide healthcare systems. The incapability of many fitness-care systems deal with the boom in call for does, in many cases, result in compromised stages of provider and reduced access thru long ready lists and high charges. This drives many people to are seeking options to home health care.

SCOPE OF THE STUDY

- The study deals with the overview of opportunities and challenges of medical tourism in India.
- Need for medical tourism is focused.

LIMITATIONS OF THE STUDY

- This research study is basically based on secondary data which may not be reliable.
- Preparation of a research study is a time consuming process.

HISTORY OF INDIAN TOURISM

In the sooner days quickly after independence, Indian Government did no longer pay a lot interest to tourism. Worldwide, the numbers of worldwide vacationers have been limited and among those tourists, there have been

best few who considered going too a long way away locations like India. The first public milestone in the records of tourism was the introduction of the Indian Tourism Development Corporation (ITDC), in 1966. This federal enterprise become supposed to expand vacationer infrastructure and services. At country degree, similar Corporations had been installed. Their budgets had been small and the scales of their operations were restricted. Moreover, the visitor offerings they supplied have been commonly taken into consideration substandard and detached

Both the Tourism Development Corporations (TDCs and the ITDC specifically) and personal entrepreneurs set up luxury resorts within the metropolitan at global access and exit factors. These hotels accommodated overseas traffic in addition to the local elite, who patronized such inns for the duration of the year. In some nearby traveller facilities inside the vicinity of fundamental access points (e.g. Jaipur and Agra) such motels had been mounted. Most of the present Indian vacationer locations have been developed via a slow manner which commenced with the advent of 'adventurous' vacationers and their interaction with local communities.

Tourism development turned into a in large part unplanned exercising in India. This held real for extraordinary states to exclusive stages. In Kerala, Jammu and Kashmir, Goa and Himachal Pradesh tourism become tons greater continuously included into kingdom (5 year) plans than in different states, even notably early on -inside the 1970s. At that point, these states already attracted a notably massive proportion of India's worldwide travellers and were to come to be India's essential traveller states and 'fashions for tourism improvement' (Singh, 2001). Still, even in these states, tourism become largely left to the personal region and to a relatively unrestricted marketplace. While there were slight adjustments in policy, this fundamental circumstance hasn't modified

CHALLENGES FOR INDIAN HEALTHCARE INDUSTRY

The US Enjoys simplest percentage of the global health market which obviously points on the under-utilization of the capacity and well-being quotient that India treasures. Still there's an opportunity of web hosting most range of foreign tourists from USA, UK, Germany, France and Canada, wherein demand of outbound scientific tourism may be very excessive because of high cost of remedy and lengthy ready lists. Whereas, with a view to explore the untapped capability of those advanced nations, market India has to make a few effective measures at the reputation of network fitness and hygiene and want based totally infrastructure especially in terms of connectivity, safety and security for the traveller traveling inside the US Besides that, a lot extra is needed to address the parallel weak point of now not having robust authorities initiative to sell clinical tourism, loss of coordination among the numerous gamers inside the industry (airline operators, lodges and hospitals), notion of client about India as an unhygienic united states, no longer having up to speed law device for hospitals, flawed waste control machine and lack of uniform pricing guidelines across hospitals.

Ministry of Tourism has published and circulated an e-book named "Five challenges of scientific tourism in 'Vulnerable' India", to awareness at the troubles of scientific tourism. The growth inside the quarter is likewise underscored by the value advantage. Government of India considers scientific tourism as a new supernova of Indian economic system that could raise India's \$17 billion a year healthcare enterprise to grow by using thirteen percentages in every of the following six years, which industry watchers say is developing at 30 in keeping with cent annually. But any such clear cut mechanism isn't in place. Besides that, corporate hospitals have time and again dishonoured the conditions for receiving authorities' subsidies by using refusing to deal with bad sufferers freed from price.

Government should make provisions to provide Quality accreditations to the Indian health facilities, education and development to the Doctors, Nurses and Para clinical staffs, and ought to apply the client oriented approach to enhance the picture of Indian hospitals.

The authorities of India can play a giant role in enhancing the reputation of scientific tourism by means of removing political instability, and terrorism Bureaucratic roadblocks. Indian Government should release long time revenue generating projects and investor pleasant rules to get benefitted from medical tourism.

The important constraint inside the expansion of Medical Tourism in India is non-availability of adequate infrastructure along with ok air seat capacity, accessibility to visitor destinations, accommodation and trained manpower in sufficient number. Poor vacationer enjoys, mainly, due to insufficient infrastructural centres', poor hygienic conditions and incidents of touting and harassment of tourists in some places are factors that contribute to bad traveller enjoy. Lack of capital, Lack of Community participation and attention, Lack of involvement from rural region, Lack of challenge for sustainability, Complex visa tactics, and Lack of proper language translators are the opposite motives which might be serving as the constraints in the way of medical tourism.

OPPORTUNITIES FOR INDIAN HEALTHCARE INDUSTRY

- The important benefit of Medical Tourism in India is excessive high-quality healthcare standards, with low remedy value. Secondly you get opportunity to journey, get higher and quicker remedy effects than of their home united states of America. All the hospitals in India offer global-class centres that can be compared with the alternative hospitals within the international. In truth, Indian hospitals and their trendy centers are comparable with the UK or US.
- Indian medical doctors are regarded internationally in particular within the regions of cosmetic surgical procedure, heart skip surgical treatment, dental care, coronary pass and traditional opportunity care inclusive of Ayurveda.
- The maximum common surgical procedure among worldwide tourists in India is renal transplantation or liver transplantation. All the main hospitals in India gives first-rate services and uses superior modern day generation packages that gives superb scientific offerings coupled with specialised care. These hospitals use similar generation much like other western countries which might be delivered through in a position experts accomplishing comparable success prices.
- India offers clinical journey help, excessive best low-priced scientific remedies with worldwide high-quality standards, cutting-edge superior clinical technology & charge estimates from top hospitals in India.

INITIATIVES BY GOVERNMENT TO STRENGTHEN MEDICAL TOURISM

- The overall fitness price range has increased from INR 39,879 crore (1. Ninety-seven% of overall Union Budget) to INR forty-eight,878 crores (2.27% of overall Union Budget). In Union Budget 2017-18, the government has determined to setup 2 new AIIMS in Jharkhand and Gujarat and the plan outlay for AYUSH is envisioned at US\$ 212.5 million. Many reforms had been introduced in Union Budget (2017-18), wherein the authorities announced that Aadhar primarily based clever-cards may be issued to senior residents to display health. Moreover, the health sub centers, numbering to 1.5 lakh, might be transformed into fitness wellbeing facilities
- The Ministry of Health is focusing on development of technology for the treatment of diseases like Cancer and TB. Government is emphasizing at the e Health projects along with Mother and Child Tracking System (MCTS) and Facilitation Centre (MCTFC). Government deliver commands to put together movement plans to cast off Kala Azar and Filariasis via 2017, leprosy by using 2018, measles with the aid of 2020 and tuberculosis (TB) via 2025
- The advantage of phase 80-IB has been extended to new hospitals with a hundred beds or greater which might be set up in rural regions; such hospitals are entitled to 100 in keeping with cent deduction on earnings for 5 years. The benefit of phase 10 (23 G) of the IT Act has been extended to financial institutions that offer lengthy-time period capital to hospitals with a hundred beds or greater. Government is encouraging the PPP model to improve availability of healthcare offerings and offer healthcare financing.
- Income tax exemption for 15 years for domestically synthetic clinical technology merchandise
- Safeguard people from high healthcare expenditure, the Drugs and Cosmetics Rules can be amended to enhance the availability of medication at an economical price and inspire the promotion of use of established drug treatments
- 250 in line with cent deduction for permitted expenditure incurred on running technology permits healthcare services which include tele remedy, far off radiology and so on.

RECOMMENDATIONS

- The promoters have to pay attention greater on exposure of Medical Tourism as the awareness approximately Medical Tourism amongst human beings is very low.
- The health care centres can also dispatch club card to their customers, this may bring about preserving of the customers for a longer time period.
- Classify the goal patron segments primarily based on their elegance and role the India Brand based totally at the 3 most important value propositions – excessive best provider, fee for cash and vacation spot diversity. An incorporated advertising and marketing Communications marketing campaign the use of print, media and avenue shows have to be developed.

- To counter increasing competition in medical tourism sector, Indian hospitals must tie-up with foreign institutions for assured deliver of medical vacationers. Specifically, they may tie-ups with capacity confined hospitals and coverage carriers.

CONCLUSION

India has tremendous capability to grow to be one of the world's renowned and high-quality Medical tourism destinations. Its fantastic tourism sights and healthcare facilities have the ability to lure increasingly vacationers. It is able to becoming a „heave“ for clinical vacationers via highlighting holistic treatments together with Ayurveda, Spa, Yoga, Medication, Wellness, Naturopathy and so on. The emergence of authorized multi-area of expertise hospitals will undoubtedly increase medical tourism in India. Satisfied clinical travellers will propose India as a desired vacation spot. Hence medical tourism providers need to attempt to keep service exceptional and vigorously attempt to make India the world chief in clinical tourism, a direction it is really on.

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QUEST FOR THE BEST MECHANISM A STUDY ON THE PERFORMANCE EVALUATION IN HOSPITALITY INDUSTRY

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ABSTRACT

Appraising the performance of individuals, groups and organizations is a common practice of all societies. While in some instances these appraisals processes are structured and formally sanctioned, in other instances they are an informal and integral part of daily Activities. Thus, teachers evaluate the performances of students, bankers evaluate the performance of creditors, parents evaluate the behaviour of their children, and all of us, consciously or unconsciously evaluate our own actions from time to time. Today's working climate demands a great deal of commitment and effort from Employees, who in turn naturally expect a great deal more from their Employers. It is about improving performance and ultimate effectiveness. Performance Appraisal is a systematic means of ensuring that Superiors and their staff meet regularly to discuss past and present performance issues and to agree what future is appropriate on both sides. Performance appraisals are an important tool in managing employees. They are communication tools that allow managers to set goals and expectations with employees and then evaluate their performance. It indicates how well an individual is fulfilling the job demands. My research was a "Study of Employee's Performance Appraisal System in hospitality industry" In this research, I had to study the current Performance Appraisal system at hotels namely Holiday Inn, Crown Plaza, Grand Hyatt, and Marriot. The respondents of this study were tenured employees. The purposive sampling technique was used in the selection of respondents. Quantitative and qualitative method of research was utilized in the gathering of data. Interviews, focus group discussion and survey questionnaires were the main instrument used in this study. The 25 item questionnaire is categorized into 8 sub scales. The result of the study reflected that the performance appraisal system of the company has brought about both positive and negative impact on the employees performance. Further, the respondents identified some major gaps in the implementation of the company's appraisal system no appropriate rewards are given to best employees, appraisal system was not fully explained to employees, no feedback of results and employees do not participate in the formulation of evaluation tools. It is recommended that the company should redesign its appraisal system that is align to its vision and mission towards the attainment of its organizational goals.

Keywords: Performance, Appraisal, Job demands, Hotels, Tool, Employee. Reward system.

INTRODUCTION

The advent of the 21st century has marked the importance of performance in the organizational context, more than ever before. (Jyothi, 20116) At the end of every year, most organizations conduct the performance evaluation of their employees. This may be done in a formal way by using questionnaires, inventories or outsourcing the entire process. Employees take efforts to accomplish the task assigned to them. They perform and hence their performance must be reviewed and appraised periodically to be improved. (Halder, 2013). Performance appraisal is a system of reviewing and periodically evaluating an individual or team performance and giving feedback to the individual or team. The objective of performance appraisal is to align responsibility and accountability of all employees at every organizational level. Appraisals are not just about job performance and job skills training they can go beyond the organizational boundary.

Performance appraisal is to provide a record of each employee's performance for the purpose of determining wages and incentive pay. (Chhabra, 2012) It is to identify the employees who have been placed on the wrong job to transfer them to the jobs for which they are better suited. To know the quality of performance of each employee and identify their strengths and weaknesses. To design training Programme for the improvement of the quality of personnel. Performance appraisal can be used as a basis of sound personnel policy in relation to transfer and promotion. If the performance of the employee is better than others, he can be recommended for promotions, but if a person is not doing well on a job he may be transferred to some other job. If the performance rating is done scientifically and systematically it will prevent grievances a develop a confidence among the employees because they are convinced of the impartial basis of evaluation.

The perfect setting of performance standards and expectations by observation and providing feedback and the conduct of different appraisal methods helps to achieve the excellent results by managing the performance of the employees. This whole process is known as Performance Management. The staff is being appraised when they are encouraged to look ahead to improve effectiveness, utilize strengths, redress weaknesses and examine

how potentials and aspirations should match up. This is a continuous and interactive process designed to motivate employees, and check their capability with the main motive to facilitate productivity.

REVIEW IF LITERATURE

In the words of **(Haldar, 2013)** appraisal is not daunting and time consuming. It is an essential requirement of an organization. The process is seen as a difficult administrative chore and emotionally challenging. It is an important system for the human resource department, as it relies on evaluation result in determining the soundness of such developmental decision that have a direct impact on the business surpluses. Performance appraisal if properly structured, achieve, and contribute a lot to the organization.

According to **(Chhabra, 2012)** the purpose of performance appraisal is to facilitate orderly determination of an employee's worth to the organization of which he is a part. However, a fair determination of the worth of an employee can take place only by appraising numerous factors some of which are highly objective, as for instance attendance, while others are highly subjective, as for instance attitude and personality. The objective factors can be assessed accurately based on records maintained by the personnel department, but there is no device to measure the subjective factors precisely. In the words of **(Newstrom, 2011)** many forms today fighting for their very existence, have turned their attention to a focus in performance management. This stems from a belief that employee performance can be managed and improved whether it through goals settings, a streamlined organizational structure, better technology, new arrangement of working schedules, high involvement of employees, or better motivation of employees. One component of performance management is the use of various systems of reward and incentives to encourage better productivity. **(APTE, 2014)** Mention in his book that performance measurement is commonly used in the case of products. The concept has been widely applied since the advent of mass manufacturing. Economic production is a key to profitability and growth. According to Boella, **(mullins, 2001)** "Each time a supervisor praises, counsels or disciplines a subordinate some form of performance appraisal has almost certainly taken place. However, from a review of literature by Lucas, there appears to be doubt as to the extent of or importance attached to formal performance appraisal within the hospitality industry and appraisal can mean different things to different people. Nevertheless, performance appraisal is a more common practice in hotels and catering than elsewhere, particularly in relation to determining pay. In the words of **(Koonz, 2010)** in the area of appraising there are other special and important strength. Appraising based on performance against variable objectives has the great advantage of being operational. Appraisal are not apart from the job that managers do but are a review of what they actually did as managers. **(Rao, Management text and cases, 2011)** Says the traditional motivational techniques are based on a reward-punishment psychology and involve the use of performance appraisals and performance based incentive programmes. These approaches including MBO indicate that specific results are best achieved by clearly outlining realistic goals and then suitably rewarding those managers who achieve them. **(Chhabra, 2012)** Mentions in his book that the purpose of performance appraisal is concerned with the differences among the employees in terms of their performance. But job evaluation is the analysis of various jobs to know the demand which the normal performance of particular jobs makes on average employees. It does not take into account the individual abilities or performance of the employee concerned. **(Newstrom, 2011)** says that performance appraisal provides a systematic basis for assessment of employees contributions, coaching for improved performance and distribution of economic rewards. Modern appraisal philosophy focuses on performances, objectives, mutual goal setting and feedback. Newer appraisal approaches, such as self-appraisal and 360 degree feedback system provide additional perspective on employee performance and suggestion for improvement. **(Koonz, 2010)** Think that the appraisal should measure performance in accomplishing goals and plans as well as performance as a manager. No one wants a person in a managerial role who appears to do anything right as a manager but who cannot turn in a good record of profit making, marketing, controllership, or whatever the area of responsibility may be. No one should be satisfied to have a 'performer' in a managerial position who cannot operate effectively as a manager. According to **(Rao, Management text and cases, 2011)** performance appraisal is the method of evaluating the behavior of employees in the work place, normally including both the quantitative and qualitative aspects of job performance. It is a systematic and objective way of evaluating both work related behavior and potential employees. It is a process that involves determining and communicating to an employee how he or she is performing the job and ideally, establishing a plan of improvement. In the words of **(Jyothi, 20116)** performance measures seek to quantify the effectiveness, quality and efficiency of services in terms of the goals these services aim to fulfill. The information obtained from appraisals is also used for internal staffing or promoting the individual.

SCOPE OF THE STUDY

- This study provide appraisal feedback to employees and thereby serve as vehicles for personal and career development and allow the management to take effective decision against drawbacks for the wellbeing of the employee's development.
- To improve employee work performance by helping them realize and use their full potential in carrying out their firm's mission.
- This study helps to know the level of importance of appraisal system.
- To ensure organizational effectiveness through correcting the employee for standard and improved performance and suggesting the changes in employee behaviour.
- To facilitate fair and equitable compensation based on performance.
- This work is confined to study the appraisal process present in the organization. It also visualizes real time scenarios in Industry. It explores some of the merits and demerits in existing system.
- To study the attitudes of employee toward the performance appraisal I have selected few numbers of employees who can represent the whole employees of the company.

OBJECTIVES

- To identify the actual performance of the employees and performance standards used in performance appraisal program
- To identify the awareness level of performance appraisal technique among the employees.
- To provide feedback to employees regarding their performance and related status.
- To Study and analyse the effectiveness of present Performance Appraisal method being followed in Organization.
- To study the attitudes of employee toward the performance appraisal I have selected few numbers of employees who can represent the whole employees of the company.

RESEARCH METHODOLOGY

Research Methodology is the process of systematic investigation of any management problem it deals with research design, data collection method, sampling plan, sampling method. Research means a scientific and systematic search for pertinent information on a specific topic. Research is a careful investigation or inquiry especially through search for new facts in any branch of knowledge. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information.

Primary data: It is the data, which is collected for once, own research purpose. The primary data was collected through questionnaire & informal discussion & it is interpreted. The questions were framed to gain maximum first-hand knowledge from employees of selected hotels which were analysed in order to arrive at suitable conclusion.

Secondary data: Secondary data refers to the information or facts already collected. Such data are collected with the objectives of understanding the past status of any variable data collected and reported by some source is accessed and used for the objectives of the study. The secondary data were collected from: Magazine, Books, Journals, Records maintained by HR department, and Company websites

Sample size: Due to time and resource constraint, the sample size is taken as 103 for the survey from the total population.

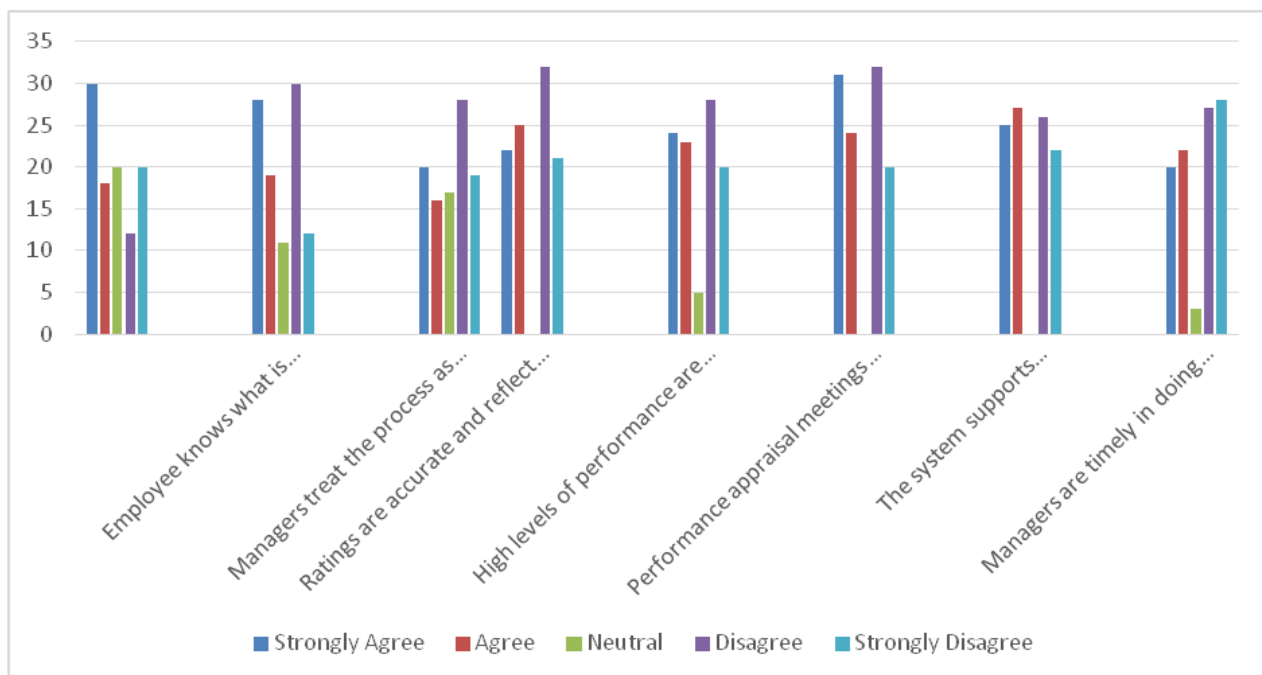
RESEARCH PLAN

Data source	: Primary Data & Secondary Data
Research approach	: Survey
Research Instrument	: Questionnaire
Method of contact	: Personal
Sample size	: 103 respondents

Data Analysis: Data analysis is represented by bar diagram.

Table showing the opinion of the employees about the Performance Appraisal system exercised in hotel industry.

Performance Appraisal System.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Performance standards are consistent across the organization.	30	18	20	12	23
Employee knows what is expected of them at all times.	28	19	11	30	15
Managers treat the process as ongoing versus once a year.	20	16	17	28	22
Ratings are accurate and reflect actual performance.	22	25	-	32	24
High levels of performance are recognized and rewarded.	24	23	5	28	23
Performance appraisal meetings are effective and productive.	31	24	-	32	23
The system supports developmental opportunities	25	27	-	26	22
Managers are timely in doing appraisal.	20	22	3	27	31



FINDINGS

In the research study the efforts is done to analyse the system of performance appraisal in hospitality industry. The primary data is collected through questionnaire method, the respondents are asked to provide the information whether **Performance Appraisal is becoming a significant issue in hospitality Industry**, Is appraisal a real problem in their workplace. Simple percentage analysis is used to find the performance level among the employees in hotel industry.

About 48% of the respondents says that the performance standards are consistent across the organization. Almost 43% of the employees knows what is expected of them at all times. 50% of the employees disagree in saying managers do the process on a regular basis. 56% disagree with the ratings of actual performance. 47% agree that high level of performance are recognized and rewarded. 55% agree that appraisal meetings are effective and productive and 55% disagree to this point that the performance appraisal system helps in developmental activities 48% disagree with this. Almost 58% disagree with the suggestion that managers are timely in doing the appraisal programme in the organization.

SUGGESTIONS / RECOMMENDATIONS

Company must Adopt the 360 Degree Feedback system for Performance appraisal - 360 degree feedback system is a method of appraisal which is a full -circle, multi-source and multi- rated system of obtaining information from peers, subordinates and internal and external customers, about the employee's performance.

Self-Appraisal-Self-appraisal could be introduced for employees at all levels. At presents the system of self-appraisal is applicable only to supervisory personnel and junior officer-to-officer level. **Proper communication of Appraisal report (Feedback)** - The appraisal report should be properly communicated to the concerned employee. Good performance should be appreciated so that the employee is sufficiently motivated and happy. Also shortfalls and weaknesses must be made known to the employees so that they can work on their weaknesses and perform better the next time around.

There are many evaluation survey tools available through which the management can collect the feedback from the customers and know the quality of the employees and in turn, it can be used as a tool for performance appraisal as well. This will in fact motivate the employees to perform well in their area of work.

SoGoSurvey: It is a cloud-based SaaS application that can be used to create surveys to measure employee engagement and customer experience, to collect product feedback, and to conduct market research, among other uses. Customers may design surveys from scratch or use a ready-to-use survey template from the pre-loaded survey bank.

Survey Monkey: This also offers more large-scale enterprise options for companies interested in data analysis, brand management, customer / employee feedback, and consumer-focused marketing

Typeform: It is a survey software solution. Forms and surveys play a pertinent role for businesses, institutions, and organizations. But sadly, as technology is making everything else a lot easier, people are finding forms increasingly boring; regardless of how easy you try to make them..

Google Forms: This survey administration app is included in the Google Drive office suite along with Google Docs, Google Sheets, and Google Slides.

Client Heartbeat: It is a customer feedback and survey management solution that lets you regulate and automate surveys for your customers. It comes with a rich set of features that helps you identify factors that make your customers happy as well as alert you when customers are dissatisfied and will probably leave your business, allowing you perform the needed steps to rescue your customers, address their concerns, and convert them into loyal ambassadors of your brand.

Zoho Survey: This straightforward, decent online survey tool addresses basic survey needs and requirements. Zoho Survey provides users with a wide selection of built-in reports and interactive charts to help them analyze and comprehend the survey results and derive intelligent, actionable insights.

Survey Gizmo: This is an online survey solution that makes it easy for businesses of all sorts to create and conduct surveys, polls, quizzes, and questionnaires. Reaching out to potential and existing customers, managing organizational and employee relationships and conducting academic researches has become convenient through Survey Gizmo.

Survey Planet: is a software that allows users to create and design surveys, share them online, and review results in an easy-to-read format. It also enables more targeted survey responses from a pre-screened pool of qualified participants

CONCLUSION

One of the factor that became very clear in the course of gathering information in the organization is that majority of the employees were well aware of the system of performance appraisal followed in the organization. They are well acquainted with the subject and have knowledge about the need and purpose to have a good appraisal system in place. They even suggested measures to make the system of appraisal in the organization a better one. Most of the employees in the organization are happy with the appraisal system in the organization. However the system should be modified to do away with personal biases, likes and dislikes of the appraisers. I have suggested some new method to include while doing the performance appraisal in the organization which I felt would be good. Performance Appraisal Management System is going on since a long time and is engulfing the whole industry. Indian companies have also evolved through ages and are following the latest technology and methods for appraisal. After all, whatever employees do throughout the year adorns your salary raise and perks.

RICH, EXTRAVAGANT AND HEDONISTIC: A STUDY WITH REFERENCE TO INDIAN YOUTH ON PERCEIVED HEDONISM AND PURCHASE INTENTION OF ONLINE PERSONAL LUXURY PRODUCTS

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ABSTRACT

Certain products and services carry an emotional value and provide intrinsic enjoyment in addition to their functional utility (Hirschman and Holbrook 1982; Sheth et al. 1991, Westbrook and Oliver 1991). Studies in the field of luxury consumption have shown that luxury products are likely to provide such subjective intangible benefits (Dubois and Laurent 1994). Additionally, research concerning the concept of luxury has repeatedly identified the emotional responses associated with luxury consumption, such as sensory pleasure and gratification, aesthetic beauty, or excitement. Hedonism describes the perceived subjective utility and intrinsically attractive properties acquired from the purchase and consumption of a luxury brand to arouse feelings and affective states, received from personal rewards and fulfillment (Sheth et al.1991; Westbrook and Oliver 1991). The purpose of this paper is to address the relationship between consumer responses to the Purchase Intention of Luxury goods bought online and Perceived Hedonism of young masstige consumers. A structured questionnaire was administered to 168 customers who had previously shopped personal luxury online to test the consumer responses to Perceived Hedonism of the consumers and their online purchase Intention. The consumers were found to be moderately hedonistic. The regression between Online Purchase intention and Perceived Hedonism was done and it was found that that a unit change in Perceived Hedonism will change online purchase intention by 0.599 units. Female was found to be more hedonistic than man and 18-23 age group was found to be more hedonistic.

Keywords: Online Luxury, Perceived Hedonism, Purchase Intention, Masstige, Personal Luxury

1.0 INTRODUCTION

The association between human beings and luxury goes through millennia, and it was often reserved for the elite in society. However, with rapid globalization, purchasing luxury items has come within the grasp of an ordinary person (Hader, 2008; Eng and Bogaert, 2010; Brun and Castelli, 2013) throughout the world (Wong and Ahuvia, 1998). Asian countries such as Japan, Singapore, Hong Kong and South Korea have developed luxury markets with India and China also growing rapidly (Chadha and Husband, 2007; Dasgupta)

The luxury industry sector is a very stimulating and interesting area. Researchers are struggling to find definitions of the term “luxury management” and as many authors suggest, principal marketing and brand management rules do not apply for a luxury strategy. Luxury as itself goes back to the beginning of human mankind and has developed over centuries. During the last decades, the luxury sector has undergone a large change. The “democratization of luxury” means that luxury goods or goods that resemble luxury goods are now available to an increased number of consumers (Okonkwo 2007, 226–227). It seems like the two concepts ‘luxury’ and ‘e-business’ are contradicting each other. While luxury is very exclusive and rare, the internet on the other hand is a mass medium characterized by its ubiquity (Laudon & Traver, 2012).

According to CRISIL report the number of High Net Individual households is expected to triple to over 329000 during 2014-2018 (Kotak Wealth Management and Crisil Research, 2013). The total number of these households and their total net worth is expected to increase by five times from 65 trillion to 318 trillion (Business World, 2013). “Irrespective of the continued global economic slowdown, the luxury market in India is estimated to grow at 25% in 2013 to 2015 and likely to touch US\$ 15 billion from the current of US\$ 8 billion.”(ASSOCHAM, 2014)

The growing number of upper middle class and their aspirations to climb up the consumption ladder is making the luxury marketers launch entry level luxury like apparel, accessories, watches and jewelry to help them ascend the ladder. The luxury group like LVMH, PPR and Richemont focus on the retail these high margin products as they are the first categories purchased by consumers on reaching their income threshold in order to become an active luxury consumer (Ortelli and D’Ath, 2013)

2.0 REVIEW OF LITERATURE

2.1 LUXURY- FROM THE ANNALS OF HISTORY

It is not very clear as to when and where the concept of luxury came in but the systematization of luxury began with Louis XIV in Paris. He set the bar of opulence so high that even the wealthiest nobleman was unable to compete with him. "He literally dictated the fashions of the day" (Tungate, 2009). Chaudhuri and Majumdar (2006), proposed a periodic-structural analysis of conspicuous consumption Behavior (Table 2.1.1), depicting its evolution, nature and character. Although formal note of this phenomenon was first documented by Veblen, the practice of conspicuous consumption or spending money to tout one's success is not new; in a primitive society, men possessed women and slaves as trophies of their status. The aristocratic Romans spent outrageous sums of money on expensive gladiator fights (Finlay, 1973). But when we talk of luxury products or brands, the key is its exclusivity and craftsmanship- "a strong element of human involvement, very limited supply and the recognition of value by others are key components." (Cornell, 2002). Due to very high quality consciousness, rarity and appreciation by others, another aspect that is unique to luxury is the price consumers are willing to pay for the products or services availed. Luxury goods are expensive in relative and absolute terms, even with or without any functional advantage over their nonluxury counterparts (Dubois & Duquesne, 1993).

2.2 A PARADIGM SHIFT

It was merely the turn of the 19th century, which was very beneficial for the development of luxury. Several occurrences during the 18th and 19th century like the liberalism, the growing importance of philosophers, who provided justification for luxury, the general democratization, the Industrial Revolution, and the emancipation took part in smoothing the way for the gradual development of luxury, making it accessible to all (Kapferer & Bastien, 2012). Until the turn of the 19th century luxury has been very isolated from the rest of the economy. It was reserved for a very small elite but since the 19th century "luxury is basically out to conquer the world", as Kapferer & Bastien (2012) state in their book.

2.3 DIMENSIONS OF NEW LUXURY

The challenge that the brands face in the present day is how they precisely merge products and experiences that speak to all category of individuals. In order to fully react to the seismic macroeconomic and societal changes that continue to strengthen the evolutionary shift within the luxury industry, brands will have to transcend from the conservative luxury model of heritage, quality, and craftsmanship to discern new ways to inform their strategy. Because some luxury

brands are older than ten decades that endure quality of a particular luxury good for its appeal, and this is especially true for the conventional view of luxury. However, some consumers particularly those who are young and fashion-conscious prefer a product with a fresh and unusual look and an exclusive aura rather than actual rarity Hanna (2004). To attract this category of consumer, the brand image focused on a label, a logo or a symbol is crucial. This is the idea behind accessible luxury (or new luxury) as opposed to old luxury (or traditional

luxury), which targets elite consumers and relies on product authenticity based on precious materials, heritage, craftsmanship, and natural rarity. Instead, new luxury targets the upper middle market, positioned at a lower price and includes three types of products (Silverstein and Fiske, 2003).

- **Accessible super-premium goods.** Products that are priced at near the top of their category that middle-market consumer can afford.
- **Old luxury brand extensions.** Lower priced versions of goods that traditionally only the wealthy could afford.
- **Masstige (merging mass with prestige).** Premium products midway between mass-produced and first class, which are well below the highest priced goods in their category.

Dalton (2005) notes the trade-off between exclusivity and availability because exclusivity is essential for true luxury, while accessible luxury goods must be widely available. D'Arpizio (2007) proposes a classification of luxury brands with three levels of luxury, observing that different performance is achieved in different markets. In general all luxury brands are characterized by elitism, heritage and uniqueness. This segment includes the brands historically associated with luxury and manufacturers of precious products that traditionally drove the market. Indeed, before the crisis, these brands dominated one of the most important luxury markets. Japan with a growth rate of up to three per cent annually. Aspirational luxury brands that achieve their status by being recognizable and distinctive are represented by such brands as Gucci and Louis Vuitton. These brands exhibited the largest rate of luxury goods growth in the US, Accessible luxury brands, which are more affordable than

their aspirational “relatives”. Consumers purchase brands such as Coach and Hugo Boss to own a status symbol. This category is largely purchased by middle-class households in Europe and the US, which is nearly two and a half times greater than the global average for accessible luxury sales growth. This suggests that sales growth in the Asia-Pacific region is driven by the high degree of entry-level access to luxury goods.

2.4 CONSUMER BEHAVIOUR OF YOUTH WITH ONLINE LUXURY PRODUCTS

“Youth” means “every person between the ages of 15 and 35 years” (adopted from UNESCO, 2012). A significant percentage of youth population in India attains some sort of financial independence around the age of 25 years. The youth who are less than 24 years old mostly depend upon their parents for financial assistance. But the present youth segment of India, is unique in terms of its sheer size, consumption of products/services, intellectual ability, pester power, trend setting capability and positive attitude towards modern technology. The young generation of the current era considers shopping as an experience rather than a mere act of purchasing a product. Possessed with lesser commitments, the youth purchase or use products/ services at their will. Further, they are also capable of influencing the consumption at even household level. Hence, the marketers and retailers operating in the country have a daunting task ahead of them in targeting and tracking a unique set of young consumers for their products and services.

Srichan Sriviraj et al. (2007) has studied the consumer behavior of young consumers towards purchase of luxury products in three countries namely the United Kingdom, Thailand and China. The research shows that UK and Thai respondents do not purchase products to show status or for possessive reasons; however, some Chinese respondents have bought luxury products to achieve status in society. There is hardly any relation of gender and purchase of luxury brand products. In terms of motivation, this research has suggested that the Snob, Perfectionist, and Hedonic effect motivate UK and Thai consumers into purchasing luxury products. Luxury consumers in China buy luxury brands as they are motivated by the Hedonic and Perfectionist value of luxury brands. Husic et al. (2009) studied the luxury market to understand the various factors that influence the purchase of luxury brands. The results show that in this market, luxury consumers feel that quality is an important attribute of luxury brands. There is a snob effect observed among the consumers because they want to buy unique and exclusive product so that they can differentiate themselves from others.

Parker (2010) studied the latent demand for luxury goods across India. It showed how the demand is divided and concentrated across the cities and regional markets of India. Truong et al. (2010) explains that people with intrinsic orientation do not show a preference for buying luxury brands. The advertising campaigns of luxury brand companies are aimed at people with extrinsic orientation. Hence they could be ignoring consumers with intrinsic orientation, who do not identify themselves with these ads. Hence luxury brand companies should see how to reach these consumers with intrinsic orientation and at the same time they should maintain a good relationship with consumers of extrinsic orientation who buy luxury brands because of conspicuous consumption. Kamolwan Tovikkai, Wiwatchai Jirawattananukool et al. (2010) have conducted a study to see the influence of individual value, achievement of status in society and demographic variables on purchase of luxury fashion brands by Thai female students. Quantitative research method via survey was used for this research. Data was collected by using survey questionnaires. The results show that there are two factors which have an important role in determining the purchase intentions of Thai female students on luxury fashion brands. One of them is achievement of social status and the other is attaining personal values like hedonic value and uniqueness value.

Qin Bian et al. (2010) researched that luxury brands are associated with —indulgence of the senses, regardless of price. Consumers buy luxury brands primarily for symbolic reasons to reflect their status and social goals. Luxury brands have a low ratio of functional utility to price and high ratio of intangible utility to price. Since luxury is a subjective concept, the perception of consumers about luxury brands will differ for different market segments. Sinha et al. (2011) showed that urban youth are the major sources of luxury product consumption. They have less liabilities in the early part of their careers and so have a higher tendency to buy luxury brands. However, Indian luxury consumers are also value conscious and are on the hunt for stylist and aesthetically appealing products which are complementary in nature. The key challenge is to educate the customers about the luxury industry. According to A.T.Kearney (2011) report, luxury consumers follow global trends and hence luxury brand companies are using digital and social media to connect with these consumers. Mishra (2011) examined the relationship between materialism and consumption innovativeness among urban Indian. The study tried to establish the fact that more materialistic Indian consumers tend to possess greater consumption innovativeness in comparison to the less materialistic consumers. Haataja, Maria et al. (2011) have used qualitative data collection techniques with open ended questions to analyze the knowledge, opinions, personal tastes and style, thoughts and feelings of the respondents with respect to the luxury sector. According to the

study, luxury goods were generally perceived as something expensive, unique, exclusive and something extra often having a brand name. In the study by Haataja Maria (2011), high price and good quality were considered as two main attributes of luxury products. Around two-thirds of the respondents had a positive attitude towards purchase of luxury products. The market segmentation has been divided into desktop Cinderella's, trench coat tigers and golden dolls. Gupta (2012) in his paper explains that the preference of people towards foreign brands can be different for different demographic segments. This is also influenced by demographic variables like age, gender, income and education. Luxe Avenue Publication et al (2012) in their research have pointed out a conflicting relationship between Generation Y using social media and luxury brands. According to them, the youth buy luxury brands not just for the feeling of luxury but also to make their dreams of an aspirational lifestyle come true. It also reveals how millennials are strongly influenced by peer pressure. All millennials were born in a more transparent universe due to easier communication thanks to technology. Hence they are very interested in enhancing their image among their peers. They generally value a —Just Do It attitude. Luxury brand companies should target their marketing campaigns to the consumers rather than just the product. It is also found that luxury should not be perceived as merely expensive products only bought by old snobs, but as an experience which could help fulfil the Millennials' desire for a deeper meaning of life. The current generation are mostly influenced by posts on social media and other online media. So, the marketing campaigns to attract them should be people-centred rather than a product-centred approach. This will help the Generation-Y market to keep growing with increasing buying power

2.5 HEDONISM AMONG YOUNG CUSTOMERS OF INDIA

"Youth" means "every person between the ages of 15 and 35 years" (adopted from UNESCO, 2012). A significant percentage of youth population in India attains some sort of financial independence around the age of 25 years. The youth who are less than 24 years old mostly depend upon their parents for financial assistance. But the present youth segment of India, is unique in terms of its sheer size, consumption of products/services, intellectual ability, pester power, trend setting capability and positive attitude towards modern technology. The young generation of the current era considers shopping as an experience rather than a mere act of purchasing a product. Possessed with lesser commitments, the youth purchase or use products/ services at their will. Further, they are also capable of influencing the consumption at even household level. Hence, the marketers and retailers operating in the country have a daunting task ahead of them in targeting and tracking a unique set of young consumers for their products and services.

3.0 RESEARCH METHODOLOGY

Initially, literature review was conducted to identify the prevalence of Perceived Hedonism paradox of online luxury consumers. The scale items were identified from the literature. The scale items were validated during questionnaire designing. Structured questionnaire was framed.

3.1 RESEARCH DESIGN

A survey was used to collect the data for this study. An online survey was created using the online survey software and questionnaire tool, google forms. Respondents were given a web link, which directed them to the questionnaire. Google forms automatically recorded and stored the responses for data analysis. Respondents of the age group 18 to 35 who has shopped luxury goods online were found out from online shopping sites, social media groups of online shoppers, courier services while they deliver personal luxury goods.

The data collection took place over a two-month duration of October and November 2018. The desired number of complete and valid surveys was 168.

The target population for this study was Young working professionals in Kerala, who were in the age range of 18-33 at the time of this study as per World Health Organization (2001) definition. A balanced gender response was also desired in order to receive a sample of the consumers in the Kerala.

3.2 SURVEY INSTRUMENT

The survey was estimated to take approximately 8-10 minutes for a thorough completion. The structured questionnaire included simple multiple choice and open ended questions. Existing scale on perceived hedonism of luxury value perception was adopted or modified . The construct was measured using a five-point Likert scale, with 5 being strongly agree and 1 being strongly disagree. These included demographic questions, the construct perceived hedonism was analysed with existing scale that was taken from Klaus-Peter Wiedmann et al., 2007 as well as open-ended questions to evaluate shopping behaviours. The demographic categorization questions were presented in either multiple choice or open-ended formats, in order to ensure that the respondent fell within the desired specifications.

4.0 RESULTS

Table 1: Regression Analysis showing Relationship between Perceived Hedonism and Online Purchase Intention

	Beta	SE	t - value	p - value
Constant	11.13	0.704	15.81	<0.001
Hedonic Value	0.599	0.039	15.22	<0.001

$$r = 0.499 \text{ \& R square} = 0.249$$

The R-square (0.249) value indicates that 24.9% of the variance in online purchase intention is addressed by the predictor variable Perceived Hedonism. The beta value corresponding to perceived hedonism is found to be significant as the corresponding p-value is less than the significant level 0.01 and the constant is also significant ($p < 0.01$). The beta value indicates that a unit change in perceived hedonism will change online purchase intention by 0.599 units. Then the regression equation can be written as

$$\text{OPI} = 11.13 + (0.599 * \text{PH})$$

Figure 1: Scatter Diagram showing Relationship between Perceived hedonism and Online Purchase Intention

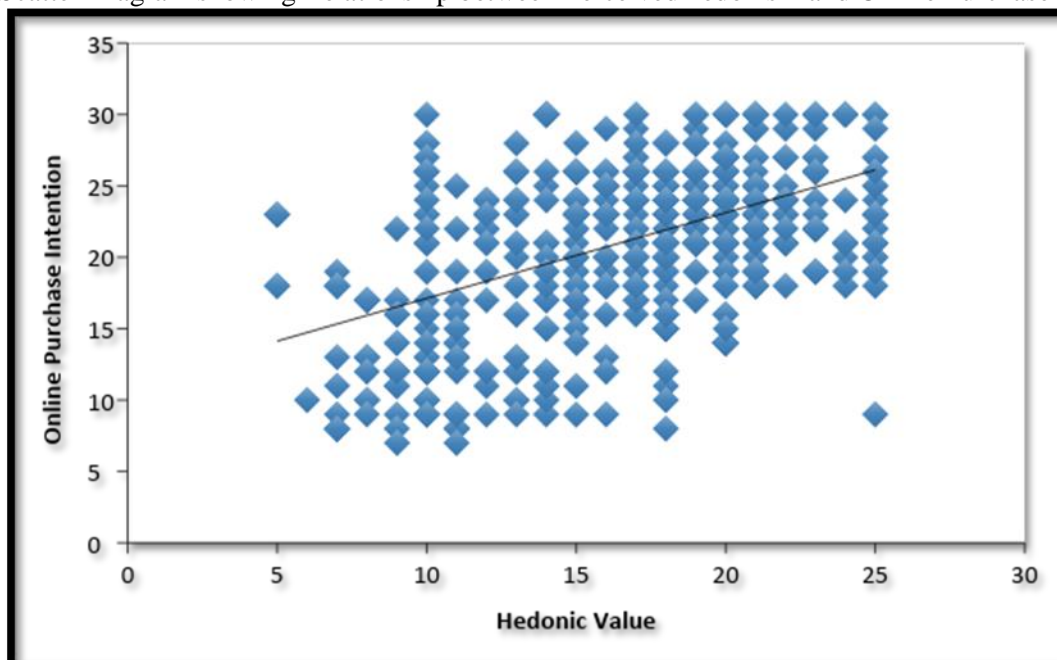


Table 2: Relationship between Perceived Hedonism and Demographic Variables

Demographic Variables	Mean	SD	F - value
Age (Years)			
18 - 22	17.79 ^a	4.233	6.891**
23 - 27	17.68 ^a	3.744	
28 - 32	16.44 ^b	4.701	
Gender			
Male	17.01 ^b	4.409	2.041*
Female	17.67 ^a	4.146	
Marital Status			
Married	16.94 ^a	4.466	3.596*
Single	17.75 ^a	4.044	
Widowed / Divorced	16.15 ^b	5.520	

Qualification			
SSLC / Higher Secondary	18.19 ^a	5.115	1.954 ^{NS}
Graduate	17.03 ^a	4.557	
Post Graduate	17.66 ^a	3.873	
Doctorate	16.86 ^a	4.762	
Professional Sector			
Management	17.73 ^b	3.954	6.802 ^{**}
Information Technology	19.28 ^a	3.349	
Life, Physical and Social Science	16.23 ^c	4.546	
Legal, Banking and CA	17.38 ^b	4.537	
Education and Library	17.28 ^b	3.643	
Arts, Design and Entertainment	15.98 ^c	4.669	
Health Care	17.69 ^b	4.355	
Annual Income			
Below 2.5 Lakhs	16.97 ^b	4.619	4.441 ^{**}
2.5 - 5.0 Lakhs	18.51 ^a	2.914	
5.0 - 7.5 Lakhs	16.83 ^b	4.783	
7.5 - 10.0 Lakhs	17.42 ^{ab}	4.742	
Above 10.0 Lakhs	16.94 ^b	4.139	

ANOVA with Duncan's multiple range test was used | ** Difference is significant at 0.01 level | * Difference is significant at 0.05 level | NS Difference is not significant | Values with same letters showing no difference

Age (Years): Here the p-value is less than the significance level 0.05; the difference in perceived hedonism between different age groups is significant. That is, there is a significant difference in perceived hedonism between different age groups. The table reveals that perceived hedonism is significantly higher in cases with age 18-22 years (17.79 ± 4.233) and 23-27 years (17.68 ± 3.744) compared to the cases with age 28-32 years (16.44 ± 4.701).

Gender: Here the p-value is less than the significance level 0.05; the difference in perceived hedonism between male and female is significant. That is, there is a significant difference in perceived hedonism between male and female. The table reveals that perceived hedonism is significantly higher in female professionals (17.67 ± 4.146) compared to male professionals (17.01 ± 4.409).

Marital Status: Here the p-value is less than the significance level 0.05; the difference in perceived hedonism between different marital statuses is significant. That is, there is a significant difference in perceived hedonism between different marital statuses. The table reveals that perceived hedonism is significantly higher in unmarried professionals (17.75 ± 4.044) and married professional (16.94 ± 4.466) compared to widowed / divorced (16.15 ± 5.520).

Qualification: Here the p-value is greater than the significance level 0.05; the difference in perceived hedonism between different qualifications is not significant. That is, there is no difference in perceived hedonism between different qualifications. The table reveals that perceived hedonism is almost same in SSLC / higher secondary (18.19 ± 5.115), graduates (17.03 ± 4.557), post graduates (17.66 ± 3.873) and doctorate (16.86 ± 4.762).

Professional Sector: Here the p-value is less than the significance level 0.05; the difference in perceived hedonism between different professional sectors is significant. That is, there is a significant difference in perceived hedonism between different professional sectors. The table reveals that perceived hedonism is significantly higher in professionals from information technology (19.28 ± 3.349) and significantly lower in

professionals from life, physical & social science (16.23 ± 4.546), and arts, design & entertainment (15.98 ± 4.669) compared to the professionals from management (17.73 ± 3.954), legal, banking & CA (17.38 ± 4.537), education & library (17.28 ± 3.643) and health care (17.69 ± 4.355).

Annual Income: Here the p-value is less than the significance level 0.05; the difference in perceived hedonism between different income groups is significant. That is, there is a significant difference in perceived hedonism between different income groups. The table reveals that perceived hedonism is significantly higher in cases with income 2.5-5.0 lakhs (18.51 ± 2.914) compared to the cases with income below 2.5 lakhs (16.97 ± 4.619), 5.0-7.5 lakhs (16.83 ± 4.783) and above 10.0 lakhs (16.94 ± 4.139). The cases with income 7.5-10.0 lakhs (17.42 ± 4.742) showing no difference in perceived hedonism compared to other income groups.

5.0 FINDINGS AND DISCUSSIONS

Perceived Hedonism (PH) is a factor contributing to the perception towards Online Luxury Shopping. Perceived Hedonism refers to the sense of enjoyment and pleasure that the consumer receives from the entire buying experience associated with shopping. Study reveals that young consumers of Kerala enjoy shopping but are less hedonistic. They seem more mature crowd who buys for enhancing the quality of life and acquiring deeper meaning in life rather to flaunt money to astound others.

Hedonism refers to the sense of enjoyment and pleasure that the consumer receives from the entire buying experience associated with shopping.

Age: It was found that respondents of lower age group are more hedonistic than higher age group, this is in congruence with the study which revealed the pleasure seeking tendency of youngsters in Kerala.

Gender: Females are more hedonistic comparison to men (Gul, 2010). The study is in congruence with the earlier studies, female were more hedonistic than men.

Marital Status: Study reveals that hedonic value is significantly higher in unmarried professionals (17.75 ± 4.044) than married professional (16.94 ± 4.466). Bachelors and sinisters are more hedonistic and have more disposable income to spend on, where as one enters the family life they tend to be more cautious with their spending and hence lower in hedonism.

Qualification: Hedonism between different qualifications is not significant, this throws light to the fact that pleasure seeking tendency is not dependent on academic inductance but inherent.

Professional Sector: Statistics reveals that hedonic value is significantly higher in professionals from information technology (19.28 ± 3.349) and significantly lower in professionals from life, physical & social science (16.23 ± 4.546), and arts, design & entertainment (15.98 ± 4.669). The life style of IT professionals and their peer group influence could be the reason for this. Further, as noted by the researcher consumers don't consume luxury goods, rather it's the overall pleasure & experience the user gets from consumption of goods. Bell (1978) assert that with increase in the luxury goods produces pleasure-seeking, self-assurance, and is associated to gratifying their personal success which is impeccable for an economy. Relatively high hedonism among young professionals of Kerala is a good direction in economic growth of the state.

6.0 CONCLUSION

From the perspective of self-concept, this research shed some light on the behaviour of young luxury consumers, which are viewed as the newcomers to the luxury market. With its large population and growing purchasing power, this market segment is of strategic importance to the luxury market, especially in the slow economic environment. As members of youth enter their prime earning years, retailers and other members of the luxury market must revise their marketing strategies to cater to these consumers' needs and behaviour patterns. Successful strategies may encourage a lifetime of loyalty to a brand. One reason that young consumers entered into the luxury market is the emergence of "New Luxury" products (Lode, 2008; Shea, 2013; Silverstein and Fiske, 2008; Stein and Sanburn, 2013). These products are ones "that possess higher levels of quality, taste, and aspiration than other goods in the category, but are not so expensive as to be out of reach" (Silverstein and Fiske, 2008). Study reveals that young consumers of Kerala enjoy shopping but are moderately hedonistic. They seem more mature crowd who buys for enhancing the quality of life and acquiring deeper meaning in life rather to flaunt money to astound others. Research throws light on the fact that consumers don't just consume luxury goods, rather it's the overall pleasure & experience the user gets from consumption of goods that motivate them. Bell (1978) assert that with increase in the luxury goods produces pleasure-seeking, self-assurance, and is associated to gratifying their personal success which is impeccable for an economy. Relatively moderate hedonism among young professionals of Kerala is a good direction in economic growth of the state.

7.0 DIRECTIONS FOR FUTURE RESEARCH

There are a few limitations for this study which provide a path forward for future research work. First, the score of this study is confined to personal luxury goods, Second, this research is restricted to only working youth. Third, the results of this study showed moderate relationship between Perception towards Online Luxury Shopping and Perceived hedonism which is contradictory to various studies conducted in the past (Tellis & Gaeth, 1990; Groth & McDaniel, 1993; Lichtenstein et al, 1993; Vigneron & Johnson, 1994 & 1999). Therefore, the findings of this study can be further validated by future studies in this domain.

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A STUDY ON ROLE OF MANAGEMENT IN FINANCIAL PERFORMANCE

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ABSTRACT

In any field of work, word “Management” should be given due weight. Without management things can’t be tackled properly for completing a particular task or achieving predetermined goal.

Management is not only a single thing, it’s a sum of many allied activities or the group of activities used to be done or performed at the same time. It plays significant role in the success of single person to the giant business organizations. There are various types of management practices emerged like marketing management, human resource management, wealth management, financial management etc. In short management is concerned with managing things through necessary efforts. This article is in depth discussion about the word management and Small survey on role of management in financial performance of business is also being conducted.

Keywords: Management, Financial Performance.

INTRODUCTION

Management may be fundamental to composed existence of business organization. Great management is the spine about effective associations. Dealing with an aggregation intends getting things finished with accomplish life’s targets What’s more overseeing an association intends getting things done with Also through different individuals to attain its targets.

Management may be an art or science, will keep on going on a chance to be a liable for civil argument. However, the majority management masterminds consent that exactly structure about formal academic administration foundation serves clinched alongside overseeing effectively.

Management is the group of individuals who takes decisions for how a business is to be run.

Management is based on the different principles like planning, organizing, directing and controlling. Effective application of these principles makes organization able to get the right way of successful achievement of business goals and objectives.

DEFINITION

According to F.W. Taylor,

“Management is an art of knowing what to do, when to do and see that it is done in the best and cheapest way”.

According to Harold Koontz,

“Management is an art of getting things done through and with the people in formally organized groups. It is an art of creating an environment in which people can perform and individuals and can co-operate towards attainment of group goals”.

According to Peter Drucker,

“Management is a multi-purpose organ that manages business and manages managers and manages workers and works”

RESEARCH METHODOLOGY**Research Objectives**

- To understand basics of management.
- To determine role of management in financial performance.

Research Design and Data

The Study was done by applying descriptive research. For descriptive research I have used the survey and observation method. Responses are collected from management professionals. A cross sectional study is fast and can study a large number of respondents at a little cost or effort.

Hypothesis of the study

H_0 = There is no significant role of management in financial performance of business organization.

H_1 = There is significant role of management in financial performance of business organization.

Sampling technique

I have used convenience sampling method because it was convenient with regards to time, cost and place of the research and also for analysis of the data.

Sample Size

I have taken sample size of 118 respondents. The sample size of respondents is decided by considering 92% significance level and 8% probable error.

FUNCTIONS OF MANAGEMENT

Management Functions



Source: <https://www.slideshare.net/imranshafiqmalik/what-managers-do>

1. Planning

Planning is a primary function of management. In planning things are to be performed in future is considered. Planning can give idea about the circumstances which organization face in future like risk of market, shortage of human resource, financial short falls, consumerism etc. In short planning is necessary to achieve the organizational goals in predetermined period of time. Planning deals with when, Where and how things will be performed for success of organization through achievement of ultimate objectives.

2. Organizing

In organization function all things or functions are organized in proper manner for organizational growth. Organizing will be building the inner authoritative structure of the benefits of the business. Fundamental target will be to make an acceptable reduction division and coordination from claiming tasks, data stream management inside an association. An authoritative structure ought to obviously characterize those divisions from claiming labor, assignment for power Furthermore compass for control.

3. Leading

Leading or directing is one and same thing, which involves the practice of fiving guideline to the subordinates and co-workers for the proper work performance related to the completion of particular task.

4. Controlling

Controlling is one of the most important managerial functions. It assist in keeping the day to day activities in control. It analyzes the gap between standardized work and actually performed work by due efforts. In short control proceeds for establishing standards to measure performance and comparing results with stated goals and taking corrective actions.

TYPES OF MANAGEMENT

Management is and single term but it has many branches or types. Its divided according to the needs of different fields of business or different functions of the business. It is also deals with management of individual requirement and finance. Main types of management are discussed below:

1. Human Resource Management

Human resource management deals with effective and efficient management of human resource in the business organization starting from recruitment to selection, placement, development and ends on retirement. If organization can get success in human resource management than it will results in maximum production with minimum wastage of raw material in short span of time. Satisfied human resource by management can give such results. In short it can be said that human resource management is an art of getting things done through the people in organization.

2. Marketing Management

Marketing management deals with the channelization of organizational products to the market. In marketing management basic task is to understand the needs and requirement of the customers and do production and advertisement accordingly. In marketing management related to the activities to capture market through convincing the customers for purchasing products or services of the particular organization.

3. Financial Management

Financial management is nothing but management of money. Finance is a lifeblood of any business organization because, without finance no business can sustain in the market with competitors. The main aims of financial management are profit maximization and wealth maximization. Financial management gives protections towards future financial crisis to the business organization.

HYPOTHESIS TESTING

Source of Variation	Sum of Squares	Degree of freedom	Mean Square	F Value	F-table Value
Between Groups	8.226	3	2.742	2.052	1.827
Within Groups	156.33	117	1.336		
Total	164.556	120			

ANOVA was conducted there is no significant role of management in financial performance of business organization. Here F Calculated value is higher than F-table Value.

So H_1 is accepted.

There is significant role of management in financial performance of business organization.

CONCLUSION

As in this study many things are discussed regarding to the management, it can give basic idea about management but still many things are remain because the word management is like a sea, it has no limits. It has wide scope discussion. On the base of analysis it can be said that role of management in financial performance is important in business organization. In future researchers can go for many other dimensions of the management.

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ANALYTICAL STUDY OF IMPACT OF DIVIDEND PER SHARE, EARNING PER SHARE AND PRICE EARNINGS RATIO ON STOCK PRICE OF BANKING STOCKS

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ABSTRACT

The Indian banking sector is oldest and most popular sector of Indian stock market .It is also one of the largest in terms of market capitalisation. This is one of most favourite investment avenue for investors from the days back The banking industry is set for new promises and goals and aligning itself for the better transformation. The aim of this study is to understand the impact of selected variables on the stock prices. This research is an attempt to find out the impact and strength of impact of Dividend per Share and Earning per share on Stock Price Movement.

The sample of the study was selected banks which are listed on NSE and are the part of bank Nifty.The data of the study is secondary data and was collected. The collected data were exploratory data's which was measured through simple Correlation analysis and Multiple regression analysis

The study observed high degree of positive correlation between BSE and price to book value ratio and also a positive correlation between Dividend and BSE price but a very low positive correlation between Price Earnings Ratio, Price to Cash EPS and BSE price and a very low negative correlation between EPS and BSE price. The study shows high degree of positive correlation between NSE and price to book value ratio and also a positive correlation between Dividend and NSE price but a very low positive correlation between Price Earnings Ratio and Price to Cash EPS and a very low negative correlation between EPS and BSE price.

1. INTRODUCTION TO BANKING INDUSTRY AND ITS PERFORMANCE

The Indian banking sector is oldest and most popular sector of Indian stock market .It is also one of the largest in terms of market capitalisation. This is one of most favourite investment avenue for investors from the days back The banking industry is set for new promises and goals and aligning itself for the better transformation. India economic fundamental are supporting the banking sector growth, regulatory climate is favouring the India and digitisation, customer centricity has become the buzz word for this industry a decade after the financial crisis and the global banking industry is on firmer ground. There may be no better time than now for banks to reimagining transformation and pursue strategic change in 2019.From the very beginning the banking sector has been the most preferred destination for investors. Investors are always interested in understanding the cause and impact of various variables on the returns of the stocks.

2. STATEMENT OF PROBLEM

Banking sector has been the most performing sector of Indian financial market and since the times has been the most favourite destination for the investors. Investors always tries to trade off between the risk and return .In a quest to maximise the returns on the stocks they are always interested in understanding the cause and effect relationship between the various fundamental and technical variable .

3. OBJECTIVES OF THE STUDY

- 3.1. To study the impact of DPS ,EPS and PE variables on the movement of stock Prices of selected banks
- 3.2. To study the relationship between the price movement of Public sector bank and private sector bank
- 3.3. To study the correlation between these variable and price movements

4. HYPOTHESIS

H₀ : There is no impact of DPS, EPS and PE on stock prices

5. RESEARCH METHODOLOGY

5.1 Sample population: All the baking stocks listed on the NSE are the population of the study

5.2 Sample size: 8 banks have been selected for the purposes of the study are

- I. State Bank of India
- II. Kotak Mahindra Bank
- III. Federal Bank
- IV. HDFC Bank

- V. ICICI Bank
- VI. Bank of Baroda
- VII. Axis Bank
- VIII. Punjab National Bank

5.3 Period of study: Data of 10 years have been selected from the period 2009-2018

5.4 Variable selection: Variables for the study are:

- I. Price Earnings Ratio
- II. Price to Book Value Ratio
- III. Price to Cash EPS
- IV. EPS (Annualised)
- V. Dividend (Annualised %)
- VI. Year End Price (BSE)
- VII. Year End Price (NSE)

Dividends per Share (DPS), Earnings per Share (EPS), Price-Earnings Ratio (P/E ratio) are the independent variables and Average stock prices of banks is the dependent variable in this study

5.5 Data Collection: The research is based on secondary data. The data for analysis has been selected from the NSE and BSE, ACE Equity. The statement of problem and review of literature has been carried out by various research papers through the helps of databases like Ebsco, Proquest.

5.6 Tools and techniques used for the study: The data are analysed through statistical method. There are various statistical tools to analysis the data.

- I. Regression
- II. Correlation
- III. Multiple regression

5.7 Limitation of the study: The period of study is limited and there are other factors also which impacts the stock prices of the firms

6. OVERVIEW OF PERFORMANCE OF BANKS IN LAST THREE YEARS

Figure-1: Performance of banks in three years (Quarter 1)

21 Banks	FY17	FY18	FY19	Growth (%)	
				FY18	FY19
Interest Income	104,177	107,948	121,942	3.6	13.0
Other Income	18,073	21,960	21,595	21.5	-1.7
Total Income	122,250	129,908	143,537	6.3	10.5
Interest Expenses	67,976	67,825	74,489	-0.2	9.8
Net Interest Income (NII)	36,201	40,123	47,453	10.8	18.3
Operating Expenses	25,294	28,733	31,918	13.6	11.1
Provisions and contingencies	15,296	18,049	26,199	18.0	45.2
Net Profit	9,050	10,683	7,488	18.0	-29.9
Gross NPAs	219,097	277,015	338,407	26.4	22.2
NPA ratio	6.56	7.52	7.92		

Source: AceEquity

Figure-2: Performance of Public banks in three years (Quarter 1)

6 Banks (Rs crore)	FY17	FY18	FY19	Growth (%)	
				FY18	FY19
Interest Income	39,863	38,589	40,720	-3.2	5.5
Other Income	5,026	6,589	5,157	31.1	-21.7
Total Income	44,888	45,178	45,877	0.6	1.5
Interest Expenses	29,293	28,025	27,025	-4.3	-3.6
Net Interest Income (NII)	10,570	10,564	13,695	-0.1	29.6
Operating Expenses	8,455	9,044	9,822	7.0	8.6
Provisions and contingencies	8,197	9,341	12,116	14.0	29.7
Net Profit	(1,135)	(852)	(1,881)	*	*
Gross NPAs	158,145	181,904	211,178	15.0	16.1
NPA ratio	12.07	13.55	14.62		

Note: *Huge losses

Source: AceEquity

Figure-3: Performance of Public banks in three years (Quarter 1)

15 Banks (Rs Crore)	FY17	FY18	FY19	Growth (%)	
				FY18	FY19
Interest Income	64,314	69,359	81,222	7.8	17.1
Other Income	13,048	15,371	16,438	17.8	6.9
Total Income	77,361	84,730	97,660	9.5	15.3
Interest Expenses	38,683	39,800	47,464	2.9	19.3
Net Interest Income (NII)	25,631	29,559	33,758	15.3	14.2
Operating Expenses	16,839	19,689	22,096	16.9	12.2
Provisions and contingencies	7,100	8,708	14,083	22.7	61.7
Net Profit	10,185	11,535	9,369	13.3	-18.8
Gross NPAs	60,952	95,112	127,229	56.0	33.8
NPA ratio	3.01	4.06	4.50		

7. REVIEW OF LITERATURE

Srinivasan (2012) study observed that DPS has a significant negative impact on share price whereas book value per share has positive impact on share price. He established that EPS, Price Earnings ratio and size are the strong indicator of share prices.

Samuelson-fama efficient market hypothesis that stock prices fully reflect available information and are therefore the best estimate of the stocks intrinsic values. The majority of the research studies results that are consistent with stock market rationally. There is considerable evidence to support that on average stock prices respond rationally to the corporate firm's fundamental announcements like dividend and earnings changes and that prices do not respond to non-economic events. Stock price are however, also known to be considerably more volatile than these fundamental variables. Mehr-un-nisa and Nishat (2012) has investigated the impact of financial fundamental and macroeconomic factor on the stock price and found that previous year's stock price, company size and previous year EPS have significant impact on current year's return on investment and stock price. They also observed that various macroeconomic factors like GDP growth etc have strong impact on stock price and there is no significant impact of share turnover ratio, inflation rate and market to book value, and on stock price.

Hashemijoo, Ardekari, and Younasi (2012) has studies the impact of dividend Policy on the share price volatility. The impact of two main measurement of dividend policy which are dividend yield and dividend payout on stock price volatility are studied by applying multiple regression and researcher observed significant negative relationship. Their study reveals the significant negative impact of firm size on stock price volatility. They found dividend yield and size as two important Indicators of stock price volatility. **Bhatt and Sumangala (2012)** has analysed the impact of EPS on market value of Equity share. They found the positive relationship between EPS and market value of equity share and by applying regression analysis; they found the significant impact of EPS on the market value of equity shares. They also stated that EPS, company related factors and industry related factors and economic factors impact the market price of the shares. **Zafar, Chaubey, and**

Khalid (2012) has studied the impact of dividend policy on shareholder's wealth and market price of shares and observed market price of share dividend as the most important factor impacting stock prices **Das and Pattnayak (2013)** has analysed the impact of fundamental factors such as stock valuation factor, ROI, Risk factor, volatility Factor Earning power factor, Growth factor) on the stock index by applying regression analysis and observed that there is a favourable impact of ROI, Earning power, Growth Factor, Stock valuation factor on share price of Sensex and Nifty while Risk and Volatility had negative impact on share price of Sensex and Nifty. **Malhotra & Tondon (2013)** has analysed the factors affecting stock price on NSE 100

companies. They found that there is a significant positive relationship of firm's book value, EPS and Price Earnings Ratio with firm's stock price, whereas there is significant inverse relationship of dividend yield with market price of firm's stock.

AVNER KALAY- past studies have documented an ex- dividend day prices drop which is less than the dividend per share and positively correlated with the corresponding dividend yield.. Despite adjustments for potential biases in earlier work however, the correlation between the ex dividend relatively price drop and the dividend yield is still positive which is consistent with a tax impact and a tax included clientele impact. **Lashgari and Ahmadi (2014)** have studied the impact of dividend policy on share price volatility in Tehran Stock Exchange. The research study finds that dividend payout ratio has a significantly negative impact on stock price volatility and asset growth rate has a significantly positive impact. Other variable such as leverage, earning volatility and company size has no significant impact on stock price volatility.

Hasan, Asaduzzaman and Karim (2013) studied the impact of dividend policy on the market price of share. Study found that DPS and Retained earnings per share has significant and positive impact on the market price per share **Almumani (2014)** found that Book value per share, EPS, , Price Earnings Ratio and Size has significant impact on share price whereas DPS, Dividend Payout have no significant impact on the share price.

Islam, Khan, Choudhury, and Adnan (2014) have investigated how the EPS affects share price and firm's value. They observed that as EPS increases the share price also

Increases **Garba (2014)** has examined the impact of dividend –per -share on stock prices of returns of the Manufacturing firms listed .He found that the Pearson Correlation Coefficient was highly significant and the result of test revealed that dividend-per-share has a significant impact on the stock returns of the sampled firms. **Menike&Prabath (2014)** investigated that there is a significant and positive impact of dividend per share, earning per share, and book value per share on the stock price. **Challa, and Chalam (2015)** has investigated the impact of book value, DPS, EPS, Size of the firm, Dividend Payout Ratio, dividend yield, Return on net worth, Price Earnings ratio on the equity price of listed Companies in BSE. By employing multiple regression analysis they found that book value and return on net worth have significant positive relationship with market share price. **Adebisi and Lawal (2015)** has studied the factors impacting firm's equity share price. They observed that the EPS, DPS, book value per share, price earnings ratio and dividend payout and size of the firm has the major impact on the company equity share price

8. DATA ANALYSIS AND FINDINGS

Descriptive Statistics

	Mean	Std. Deviation	N
BSE	300.0386	320.25841	80
P_E	18.2004	31.59473	80
P_BV	1.9730	1.16749	80
P_CEPS	13.3067	25.38363	80
EPS	50.4002	47.66592	80
Dividend	160.7438	134.76588	80

Correlations

		BSE	P_E	P_BV	P_CEPS	EPS	Dividend
Pearson Correlation	BSE	1.000	.234	.750	.256	-.061	.526
	P_E	.234	1.000	.231	.592	-.186	-.127
	P_BV	.750	.231	1.000	.325	-.121	.197
	P_CEPS	.256	.592	.325	1.000	-.062	.097
	EPS	-.061	-.186	-.121	-.062	1.000	.507
	Dividend	.526	-.127	.197	.097	.507	1.000
Sig. (1-tailed)	BSE	.	.018	.000	.011	.297	.000

	P_E	.018	.	.020	.000	.049	.132
	P_BV	.000	.020	.	.002	.142	.040
	P_CEPS	.011	.000	.002	.	.292	.195
	EPS	.297	.049	.142	.292	.	.000
	Dividend	.000	.132	.040	.195	.000	.
N	BSE	80	80	80	80	80	80
	P_E	80	80	80	80	80	80
	P_BV	80	80	80	80	80	80
	P_CEPS	80	80	80	80	80	80
	EPS	80	80	80	80	80	80
	Dividend	80	80	80	80	80	80

Variables Entered/ Removed^a

Model	Variables Entered	Variables Removed	Method
1	Dividend, P_CEPS, P_BV, EPS, P_E ^b	.	Enter

a. Dependent Variable: BSE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.883 ^a	.780	.765	155.12380	.780	52.544	5	74	.000

a. Predictors: (Constant), Dividend, P_CEPS, P_BV, EPS, P_E

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6321979.242	5	1264395.848	.000 ^b
	Residual	1780691.209	74	24063.395	
	Total	8102670.451	79		

a. Dependent Variable: BSE

b. Predictors: (Constant), Dividend, P_CEPS, P_BV, EPS, P_E

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-175.252	42.012		-4.171	.000	-258.963	-91.541
	P_E	1.976	.709	.195	2.787	.007	.563	3.388
	P_BV	165.712	16.571	.604	10.000	.000	132.693	198.731
	P_CEPS	-1.595	.892	-.126	-1.789	.078	-3.372	.182
	EPS	-1.661	.442	-.247	-3.761	.000	-2.541	-.781
	Dividend	1.352	.160	.569	8.431	.000	1.033	1.672

a. Dependent Variable: BSE

BSE Price=1.976 Price equity ratio + 65.712 Price to book value ratio – 1.595 price to cash EPS – 1.661 EPS + 1.352 Dividend-175.252

Descriptive Statistics

	Mean	Std. Deviation	N
NSE	302.0293	321.84396	80
P_E	18.2004	31.59473	80
P_BV	1.9730	1.16749	80

P_CEPS	13.3067	25.38363	80
EPS	50.4002	47.66592	80
Dividend	160.7438	134.76588	80

Correlations

		NSE	P_E	P_BV	P_CEPS	EPS	Dividend
Pearson Correlation	NSE	1.000	.234	.759	.257	-.066	.523
	P_E	.234	1.000	.231	.592	-.186	-.127
	P_BV	.759	.231	1.000	.325	-.121	.197
	P_CEPS	.257	.592	.325	1.000	-.062	.097
	EPS	-.066	-.186	-.121	-.062	1.000	.507
	Dividend	.523	-.127	.197	.097	.507	1.000
Sig. (1-tailed)	NSE	.	.019	.000	.011	.282	.000
	P_E	.019	.	.020	.000	.049	.132
	P_BV	.000	.020	.	.002	.142	.040
	P_CEPS	.011	.000	.002	.	.292	.195
	EPS	.282	.049	.142	.292	.	.000
	Dividend	.000	.132	.040	.195	.000	.
N	NSE	80	80	80	80	80	80
	P_E	80	80	80	80	80	80
	P_BV	80	80	80	80	80	80
	P_CEPS	80	80	80	80	80	80
	EPS	80	80	80	80	80	80
	Dividend	80	80	80	80	80	80

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Dividend, P_CEPS, P_BV, EPS, P_E ^b	.	Enter

a. Dependent Variable: NSE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.889 ^a	.790	.776	152.24217	.790	55.812	5	74	.000

a. Predictors: (Constant), Dividend, P_CEPS, P_BV, EPS, P_E

The model is significant as the value is less than 0.05 and R square and adjusted R square is greater than 75%.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6467950.926	5	1293590.185	55.812	.000 ^b
	Residual	1715148.171	74	23177.678		
	Total	8183099.097	79			

a. Dependent Variable: NSE

b. Predictors: (Constant), Dividend, P_CEPS, P_BV, EPS, P_E

Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-178.000	41.232		-4.317	.000	-260.156	-95.844

P_E	1.955	.696	.192	2.811	.006	.569	3.342
P_BV	169.095	16.264	.613	10.397	.000	136.689	201.501
P_CEPS	-1.607	.875	-.127	-1.836	.070	-3.351	.137
EPS	-1.691	.433	-.250	-3.901	.000	-2.554	-.827
Dividend	1.353	.157	.566	8.594	.000	1.039	1.666
a. Dependent Variable: NSE							

NSE Price=1.955 Price equity ratio + 169.095 Price to book value ratio – 1.607 price to cash EPS – 1.691 EPS + 1.353 dividend -178

9. CONCLUSION

The Pearson correlation table shows high degree of positive correlation between BSE and price to book value ratio and also a positive correlation between Dividend and BSE price but a very low positive correlation between Price Earnings Ratio, Price to Cash EPS and BSE price and a very low negative correlation between EPS and BSE price.

The Pearson correlation table shows high degree of positive correlation between NSE and price to book value ratio and also a positive correlation between Dividend and NSE price but a very low positive correlation between Price Earnings Ratio and Price to Cash EPS and a very low negative correlation between EPS and BSE price.

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PURCHASE INTENT IN ONLINE SHOPPING

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ABSTRACT

Consumers' Purchase Intentions is a crucial part of consumer behaviour. Purchase intentions are frequently measured and used by marketing managers as input for decisions about new and existing products and services

In this paper, we have created the scale on purchase intent with the help of available literature. The scale is indented to use in metro and non-metro cities. The items are specific to online shopping.

Keywords: Purchase Intent, Online shopping, Buying Decision, Buyer Behavior

INTRODUCTION

Consumer behaviour is complex term and would get shaped by many factors such as demographic variable, psychographic variable, involvement in the purchase decision process etc. Understanding and predicting consumer behaviour is always a priority for marketers. The intention is always a crucial part of the process and been researched by many researchers such as (Cathy, Cobb-Walgren, A., & Naveen, 1995) (Hee-Jung & Timothy J., 2019) & (Salmones & Andrea, 2019).

The world of online shopping is also growing very fast. Growth is exponential and after water and air, what covers the mother earth is online shopping. As per the estimation of web site Statista (Duncan, 2019),

"In 2018, an estimated 1.8 billion people worldwide purchase goods online. During the same year, global e-retail sales amounted to 2.8 trillion U.S. dollars and projections show a growth of up to 4.8 trillion U.S. dollars by 2021."

Both the industry and the area of consumer behaviour give a good reason to study the purchase intent in online shopping.

In India too, it is growing very rapidly. According to Associated Chambers of Commerce and Industry of India (ASSOCHAM), "Over 120 million Indian consumers are expected to shop online, clocking annualized growth of 115 per cent" the federation cites the eruption of e-commerce platforms slug and attractive deals as a major reason. A wide range of products from clothes, mobile phones, air-conditioners is another reason in the study of the federation. (Negi & Sharma, 2018)

REVIEW OF LITERATURE

Purchase intentions are frequently measured and used by marketing managers as input for decisions about new and existing products and services. The review reveals that there is a relationship between purchase intentions and sales that have been researched over the last few decades. There are lots of papers on how best to measure purchase intentions. Some papers are trying predicting the sales with the help of purchase intent; however, few researchers didn't find any relationship between them.

A lot of papers refers to Technology Acceptance Model (TAM) by Venkatesh & Davis, (2000) as a major basis to study the same. The field is so well researched that there are meta-studies also found during the review of the literature. One such study by Ezgi & Aslihan, (2015) classifies the factor affecting online purchase intention into 9 major factors.

Purchase Intent

Purchase intentions are frequently measured and used by marketing managers as input for decisions. Ariely, (2000) says like visiting the physical shop, visiting a web site is important and understanding the objectives is crucial for marketers. Abu-Shamaa, (2015) discussed the role of technology as well as socio-cultural factors such as trust in his paper. E., Pedersen, & Herbjørn (n.d.) discussed the impact of goal orientation on online shopping intent. While most of the researchers concentrated over the goal of visiting a particular site, Hoffman & Novak, (1996) said that online customers' may be goal-directed or just for an experience.

In one study, Thamizhvanan & Xavier, (2013) established that impulse behaviour, prior online purchase experience and online trust has a significant impact on the customer purchase intention. Moreover, males' intention to shop online was more than females.

Measuring Intent

Measuring intent is quite a challenging task. The intention is the likelihood of a person doing something desirable. (Kim & Park, 2005). People who believe that technology increases task performance have greater intention to use that technology (Lanseng & T. W., 2007). Studies confirmed that attitudes positively affect the intention to search (Wang & Chou, 2014)

Need for study

The major challenge with measuring the social science constructs' is a dependency on data set. These are very dataset-dependent methods. In the case of intent, to purchases intent for online shopping in smaller cities were not found during the review.

Research objective

The objective is to create a scale and may be further used with some dependent variables such as place of living, socio-economic strata etc to understand the buying behaviour in online shopping.

Hypothesis Development

The hypothesis was developed around purchase intent. First, the researcher created a scale with the help of available literature. Once the scale was established, the impact of gender is checked on the intent.

H₀₁: The purchase intent is the same for both the gender in online shopping.

H_{A1}: The purchase intent is different for both the gender in online shopping.

Research Methodology

- Sample size – The study is conducted in two cities Mumbai and Surat with the help of 243 respondents. The almost equal sample is been drawn from both the cities and across gender.
- Data collection instrument – The structured questionnaire is used as an instrument.
- Data collection method – Non-probabilistic sampling is used for the study. Variables used in this study are Independent (Gender) and Dependent (Purchase intent).

Analysis

As the statement for the scale is coming from various research papers, we went for reliability study with the help of Cronbach's Alfa. After getting the satisfactory value (Alpha=0.08) we have checked the unidimensionality of the construct. After the construct, the impact of gender on purchase intent was analyzed.

Descriptive

Gender * Age Crosstabulation								
Count								
		Age						Total
		17-20	21-23	24-27	28-31	32-35	36+	
Gender	Female	16	78	12	6	2	2	116
	Male	4	73	40	6	3	1	127
Total		20	151	52	12	5	3	243

Major respondents are from 21-23 age groups. Gender distribution is almost the same for all the age groups

City * Gender Crosstabulation				
Count				
		Gender		Total
		Female	Male	
City	Surat	76	49	125
	Mumbai	40	78	118
Total		116	127	243

City wise distribution is also the same.

Reliability Statistics	
Cronbach's Alpha	N of Items
.843	8

The value of Cronbach's Alfa is also satisfactory.

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I intend to shop online	23.60	22.124	.428	.841
I will make my future purchases from online retailers	23.85	20.471	.614	.821
I will increase purchases through online retailers.	23.94	19.988	.626	.819
Given the choice of buying from a shop and shopping online, I would purchase products online.	24.10	19.028	.663	.813
I would buy new products offered on online sites	23.90	21.384	.473	.836
I consider shopping online as the main avenue for purchasing products.	24.33	19.291	.628	.818
I see more percentage of my purchases happening on the internet.	24.16	18.404	.643	.816
I consider buying online has many advantages as compared to buying from the store	24.03	19.832	.543	.829

Factor Analysis

Correlation Matrix
a. Determinant = .082

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	589.466
	df	28
	Sig.	.000

Communalities		
	Initial	Extraction
I intend to shop online	1.000	.293
I will make my future purchases from online retailers	1.000	.533
I will increase purchases through online retailers.	1.000	.547
Given the choice of buying from a shop and shopping online, I would purchase products online.	1.000	.592
I would buy new products offered on online sites	1.000	.345
I consider shopping online as the main avenue for purchasing products.	1.000	.547
I see more percentage of my purchases happening on the internet.	1.000	.557
I consider buying online has many advantages as compared to buying from a store	1.000	.430
Extraction Method: Principal Component Analysis.		

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.844	48.048	48.048	3.844	48.048	48.048
2	.791	9.893	57.941			
3	.740	9.255	67.196			
4	.705	8.815	76.011			
5	.562	7.030	83.040			
6	.501	6.262	89.303			

7	.442	5.531	94.834			
8	.413	5.166	100.000			
Extraction Method: Principal Component Analysis.						

Component Matrix	
	Component 1
Given the choice of buying from a shop and shopping online, I would purchase products online.	.770
I see more percentage of my purchases happening on the internet.	.747
I consider shopping online as the main avenue for purchasing products.	.740
I will increase purchases through online retailers.	.740
I will make my future purchases from online retailers	.730
I consider buying online has many advantages as compared to buying from a store	.655
I would buy new products offered on online sites	.587
I intend to shop online	.541
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Rotated Component Matrix ^a
a. Only one component was extracted. The solution cannot be rotated.

Inferential

Association of Gender and purchase intent

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.586 ^a	24	.038
Likelihood Ratio	43.377	24	.009
Linear-by-Linear Association	10.372	1	.001
N of Valid Cases	240		
a. 30 cells (60.0%) have expected count less than 5. The minimum expected count is .47.			

INFERENCE

Since the p-value is greater than our chosen significance level ($\alpha=0.005$) we fail to reject the null hypothesis. We conclude that there is not enough evidence to suggest an association between gender and purchase intent.

FINDINGS & CONCLUSION

The satisfactory Cronbach's Alfa and unidimensionality suggest that the construct is good to put in use. The purchase intent in the world of online shopping is free from gender bias. It does mean that the intent of purchase in online shopping same for both men and women.

FUTURE SCOPE OF THE STUDY

The study can be further used to understand the impact of place of living such as urban vs non-urban or income group etc. The study can also be used to understand the impact of the socio-economic structure on purchase intent. Probably it may be useful to understand psychographic segmentation apart from demographic one.

LIMITATIONS

As we have discussed earlier any these studies are data-set dependent techniques. A longitudinal study would only validate the scale in the long run. The present study is been carried out only in two geographies, namely Mumbai & Surat. A need to repeat the scale in other geographies would add more value to the construct.

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SALON SERVICE CONSUMPTION: AN EXPLORATORY PERSPECTIVE

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ABSTRACT

The paper talks about saloon services patronage. How the patron sees the services. What are the priorities? Does the frequency of visit depend upon gender or income? The paper tries to explore the answers to these basic questions in the city of Mumbai.

The present study reports in more detail on the preferences of patrons demographically including age and socio-economic class. The study explores the kind of services utilized by a different segment of the customers and the factor affecting the choice and frequency of services.

The result confirms that there is no significant difference between male and female in the case of choosing the services and frequency. However, the economic background may influence spending.

Keyword: Salon service consumption, buyer behaviour

INTRODUCTION

Services are like products. Like products, people behave in a different manner while consuming services. There are plenty of papers talk about service buying behaviour even risk perception and reduction in the purchase of consumer Services (Greotorex, 1993). The services are different because of, intangibility, heterogeneity, perishability and inseparability. This leads to a higher degree of perceived risk in the purchase of services and hence a different buyer behaviour.

The industry is going through huge changes. The introduction of high-tech tools has completely changed the beauty industry marketplace. How and where the clients spend their money has changed dramatically and hence the products and services must also change (Benge, 2012). (Benge, 2014)

The world of the Internet is also a major reason behind changes. A lot of home service models such as UrbanClap, Vanitycube and GetLook kind of business model are giving a tough time to traditional setups.

The study is exploring the salon and beauty services patronage behaviour in Mumbai suburban region.

REVIEW OF LITERATURE

Service sector patronage is been researched sufficiently. However, salon services patronage behaviour was not able to attract much attention or researchers and academicians. Reyes, (2012) in his paper points that technologies of conspicuous consumption for the well-to-do woman starts outside, especially beauty parlour or spas. Metamorphosis of general hair-dressers into full range beauty parlours in Manila is the example of consumption pattern of women in the beauty industry. Now, moving towards beautification as procucess, 'beautification' is defined by Chidambaram & Devi, (2000) "Products, those that clean and perfume the body, change appearance, correct body odor, protect skin, and keep it in good condition" give a basic understanding about the basic products.

Most of the study in this area talk about consumption behaviour or pattern of cosmetics and purchase pattern such buying hair care products (Rajee & Kasinathan, 2017), skin care products (Baral, 2018) etc. Paula Black (2004) in her book "The Beauty Industry" tries to bust the myth going around the industry. Starting from the construction and maintenance of gender identity; changing definitions of health and well-being; and labour processes, she touched almost every point we need to know about the industry.

Talking on salon expenses as part of regular household expenses, Mohamed & Ann C., (1982) discussed the Wife's education was influential in determining family consumption expenditures and beauty services becomes a part of regular household expenditure.

Initially the industry was considered as 'female only' (Nargis & Md. Humayun, 2006) industry. However, people have realized the growth of the industry including products, services and allied areas such as spas and wellness centers. Now it is evident that the consciousness of beauty is been increasing.

RESEARCH OBJECTIVES

1. To analyze the effect of demographic variables such as gender, Age, marital status & socio-economic classification on consumers patronage towards the salon and beauty services in the Mumbai suburban region

2. To find out the factors influencing consumers to choose a particular salon

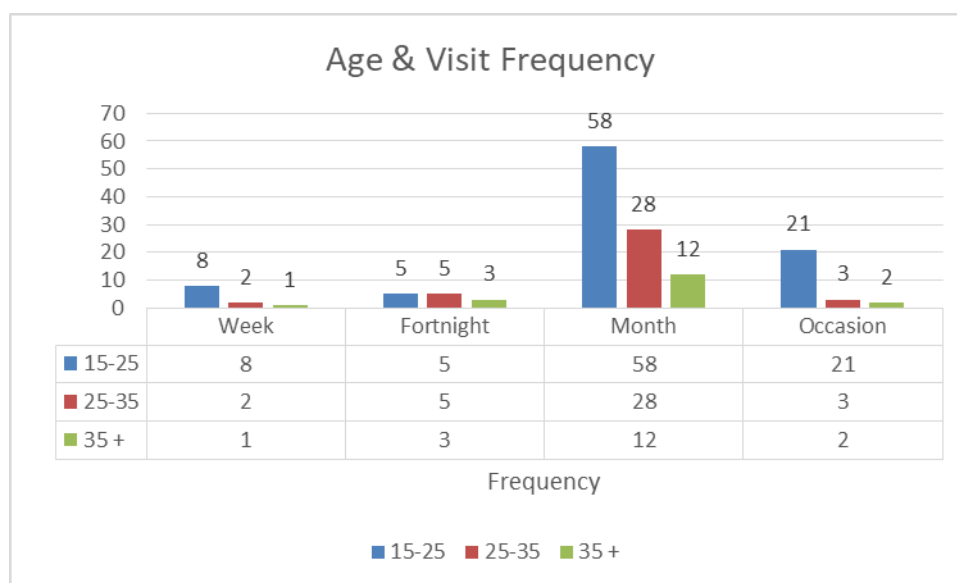
RESEARCH METHODOLOGY

- Sample size – The study is conducted in Mumbai western suburbs with the help of 148 respondents. The almost equal sample is been drawn from across gender.
- Data collection instrument – The structured questionnaire is used as an instrument.
- Data collection method – Non-probabilistic sampling is used for the study. Variables used in this study are Gender, Age, Marital Status, Socio-economic stratification and visiting frequency.

ANALYSIS

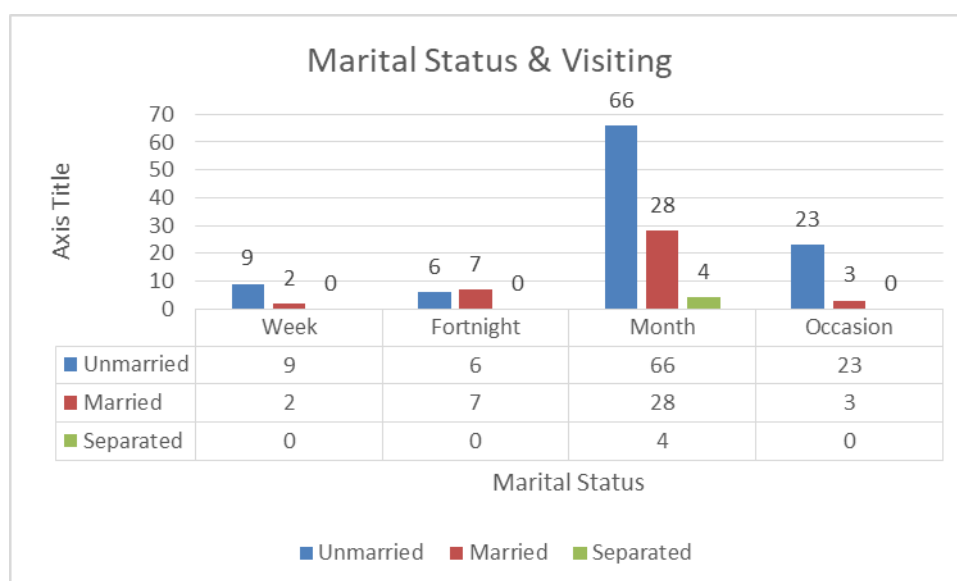
The result confirms that there is no significant difference between male and female in the case of choosing the services and frequency. No sign of impact of other demographic variables. The study being descriptive in nature, uses frequency as basis to understand the respondents behaviour.

Age & visit frequency



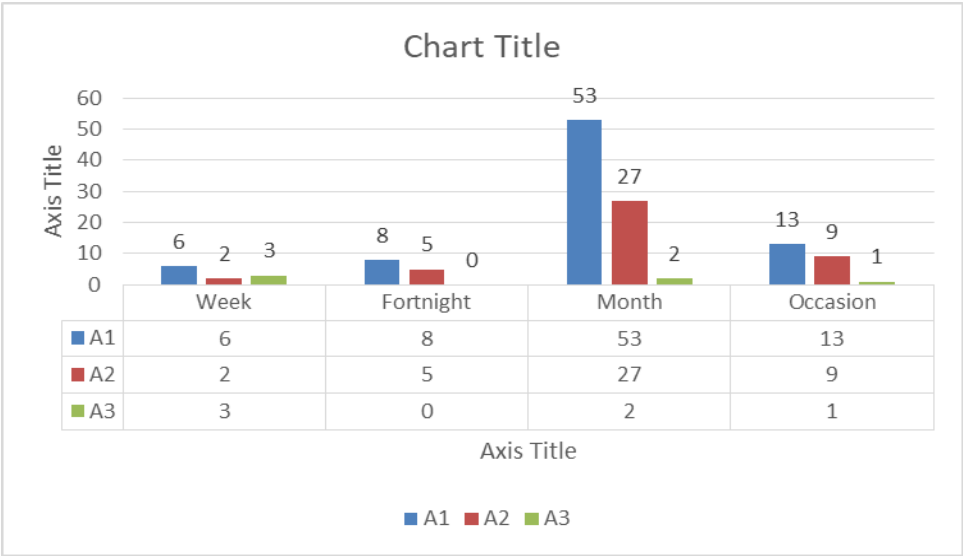
The data reveals that for all age group the monthly visit is the most preferred frequency to avail salon services. As maximum respondents are from 15-25, this can also be assumed that this age group leading the salon services patrons.

Marital & Visit Frequency



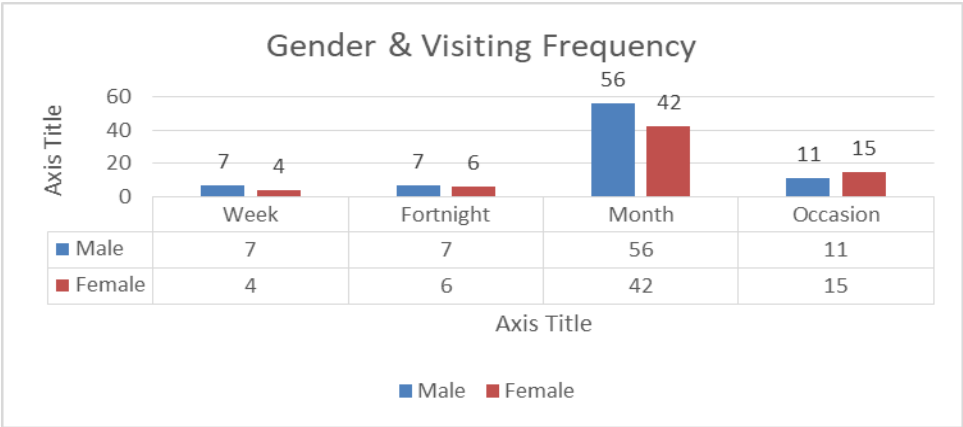
Same is the case of marital status. Irrespective of the status the patrons would like to visit a salon on a monthly basis.

Socio-Economic classification & Frequency



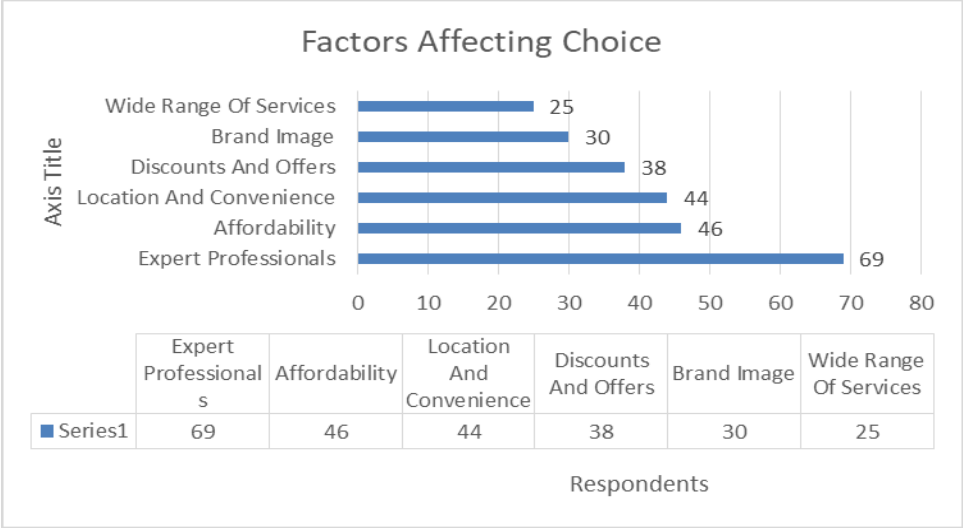
Most of the respondents come from SEC A1 and SEC A2. Interestingly, the pattern of the visit is the same as other demographic variables. For socio-economic staratification we have used new method developed (The New SEC System, 2011) by MRUC.

Gender & visiting Frequency



In the case of gender, the visiting frequency is the same.

Factors affecting choice



Availability of expert professional is undoubtedly the first thing that comes in the mind of patrons while choosing the salon services. Affordability and convenient location are the runners up in this case.

FINDINGS & CONCLUSION

It is evident from the study that in the western suburbs of Mumbai, patrons of salon services visit every month. We have not seen any impact of age, gender, socio-economic condition or marital status. Almost everybody would love to visit a month.

There are numerous choice factors, but we have chosen Expert Professionals, Affordability, Location & Convenience, Discounts & Offers, Brand Image and Wide Range Of Services, as a representative of common services availed by patrons. The choice is based upon the discussion with patrons and few salon owners.

Availability of experts is the factor affecting the choice behaviour. However, Convenient location, Discounts and affordability are not far off.

FUTURE SCOPE OF THE STUDY

There is vast scope in this subject, as literature reveals that there is a dearth of study in this area. The service sector itself is overshadowing the production in terms of revenue and transactions. The salon business is also growing at a fast pace. There are a lot of global and domestic players in the ball game. The stand-alone business created by entrepreneurial women is the third but dominating category in this business.

In future, we study the attitude, perception towards a particular service or salon. At a deeper level it would be interesting to see if there is any correlation between narcissism and salon patronage in terms of either frequency, amount spends, or a number of services availed.

LIMITATIONS

There are many limiting factors to this study. The paucity of time and fund are the more generic one but most important is the descriptive nature of the study. For decision making inferential studies are considered as better.

The geographic coverage and sample size are very small. To make sense for any decision maker in salon business, we need to cover bigger geography and corresponding sample size.

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SYNTHESIS AND PHOTOLUMINESCENCE PROPERTIES OF EUROPIUM DOPED STRONTIUM SULFIDE PHOSPHOR

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ABSTRACT

Modified novel wet chemical co-precipitation method is used to prepare SrS:Eu^{2+} phosphor. The precursors (A.R.grade) used are sulphur (30% extra) and strontium chloride. The required amount of Europium is used in acetate form as a dopant and slurred in with the ppt by using 2-propanol. The powder so obtained is reduced at 800 °C for 2 hours.

The phosphor was characterized by powder X-ray diffraction (XRD). The XRD pattern of as-synthesized SrS:Eu^{2+} matches well with ICDD file 75-0895. The photoluminescence Emission (PL) and Excitation spectra (PLE) were recorded. The excitation spectrum monitored at 602nm emission shows broad excitation band spread in 400nm -500nm. This makes it suitable conversion phosphor for blue LED chip. The stability of this phosphor is matter of concern but it was observed that epoxy mixed coatings are more stable.

Keywords: Photoluminescence, wet chemical co-precipitation, Phosphor, Red emission.

1. INTRODUCTION

The era of solid state lighting (SSL) has begun with the invention of blue LED chip by Nakamura in 1991[1]. With years the scientists were able to produce more and more efficient blue LEDs[2-3], which became the basis for white LEDs [4]. SSL has several advantages like energy savings, environment-friendliness, small volume and long persistence[5-6]. There are two major approaches of white light generation in SSL. Multi LED chip approach and phosphor conversion. In multi LED chip approach light coming from three monochromatic red, green, and blue (RGB) LEDs is mixed, resulting in white light to human eyes. In case of phosphor conversion approach, GaN-based blue or UV LED chip is coated with a yellow or multi colored phosphor thereby converting some or all of the LED's output into visible wavelengths. Researchers in this field are developing new phosphors with the combination of different hosts materials and dopants as well as modifying the synthesis methods to make the synthesis more simple and economical [7-9].

There are several sulphide materials which can yield orange-to-red emission when doped with Eu^{2+} ion in contrast to oxide hosts, where red Eu^{2+} emission is relatively rare [10]. These materials were recently investigated as conversion phosphor.

Luminescence of SrS:Eu^{2+} is well known. Recently enhancement of Eu^{2+} emission by co-doping Ce^{3+} into SrS:Eu^{2+} is also reported [11]. Nazarov et al. [12] investigated the luminescence of Eu^{2+} -doped CaS-SrS solid solution and found that the emission of Eu^{2+} varied linearly with alkaline earth-sulfur distance, i.e. the crystal field strength. However the synthesis method used is complex and requires prolonged heating at high temperature. This phosphor was successfully prepared by simplified soft chemical route at relatively lower temperature.

2. EXPERIMENTAL

The wet chemical co-precipitation method is used to prepare SrS:Eu^{2+} phosphor. The precursors (A.R.grade) used are sulphur (30% extra) and strontium chloride. The required amount of Europium is used in acetate form as a dopant and slurred in with the ppt by using 2-propanol. The powder so obtained is reduced at 800 °C for 2 hours. The XRD data was collected in 2θ range from 10° to 80° at room temperature.

Photoluminescence (PL) and photoluminescence excitation spectra (PLE) were recorded. The colour chromaticity coordinates were obtained according to Commission International de l'Eclairage (CIE).

3. RESULT AND DISCUSSION

3.1 XRD analysis

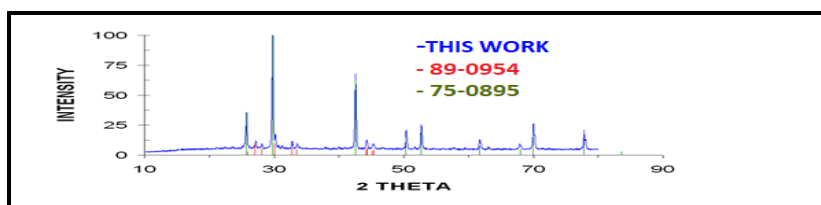


Fig-1: The powder XRD pattern of SrS: 0.05Eu^{2+}

The phosphor powder obtained was subjected to XRD analysis using X'Pert PRO advanced automatic diffractometer with Cu K_{α} radiation ($\lambda = 1.540598 \text{ \AA}$) operated at 40kV and 30mA. XRD pattern of SrS: Eu^{2+} matches well with ICDD file 75-0895. Most of the lines could be indexed as given in ICDD file 75-0895. Again, there are some extra weak lines which are close to the positions of SrSO_4 phase (ICDD file 89-0954). This might be due to surface oxidation while recording XRD.

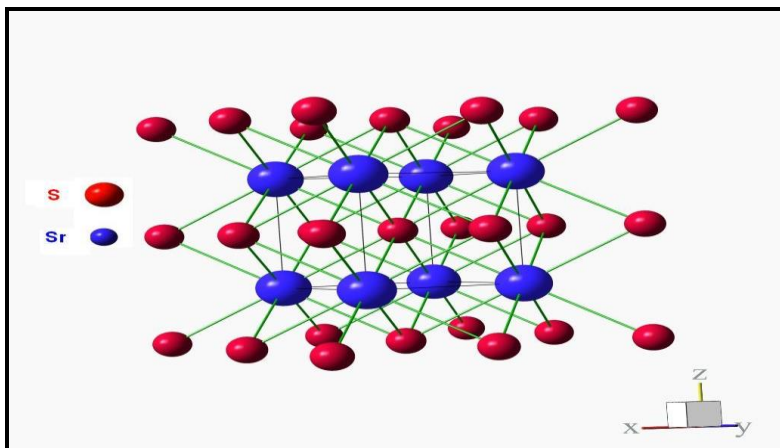


Fig-2: SrS unit cell showing eight coordination of Sr^{2+} (Eu^{2+}) with neighbouring sulfur ions.

SrS has a cubic structure (Fm3m). Eu^{2+} substitutes Sr^{2+} having eight octahedral coordinated S^{2-} neighbours (Fig.2).

3.2 Photoluminescence

The measurements of photoluminescence (PL) and photoluminescence excitation spectra (PLE) were carried out on Hitachi-F7000 fluorescence spectrophotometer at room temperature. The spectral resolution of both excitation and emission spectra, width of the monochromator slits (1nm) as well as the measurement conditions such as PMT detector sensitivity and scan speed were kept same for all the samples.

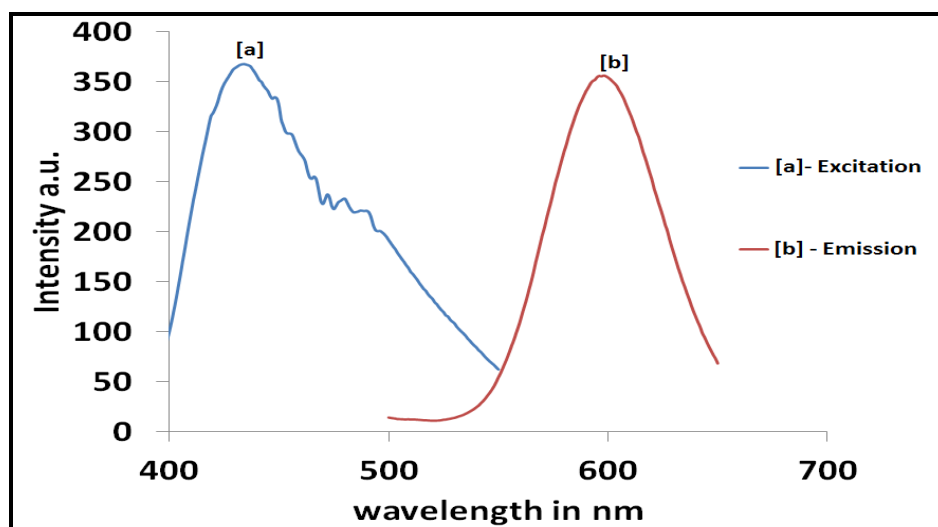


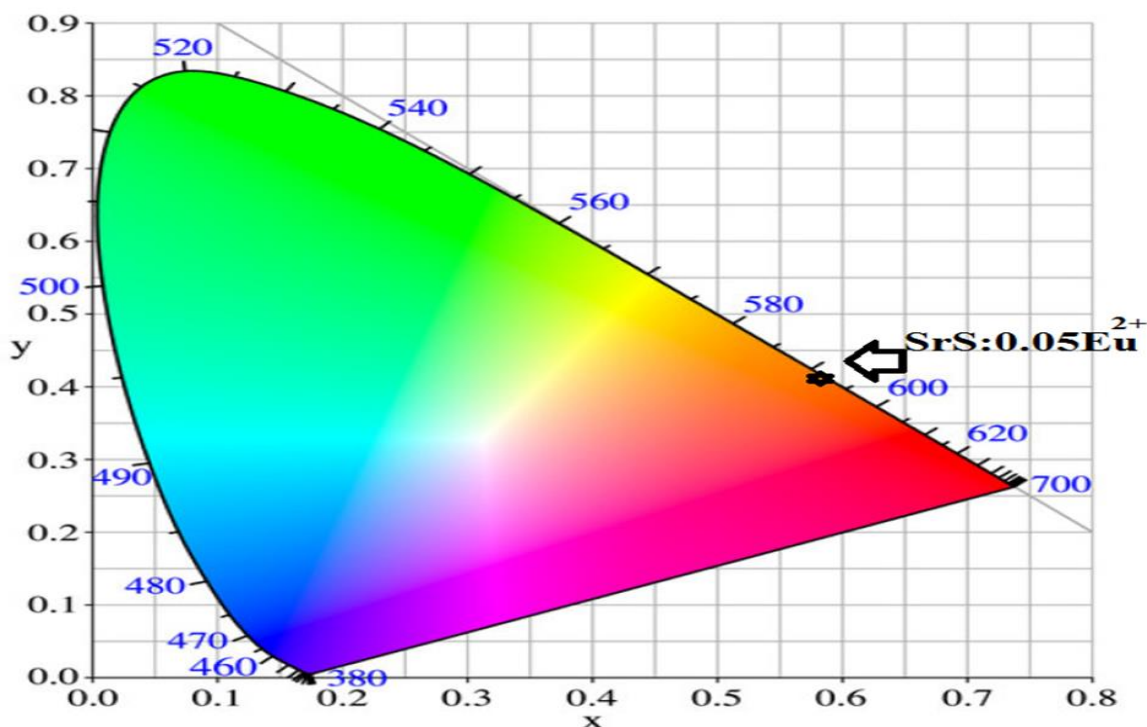
Fig-3: PLE (a) and PL (b) curve for SrS:0.05 Eu^{2+}

In SrS host, Eu^{2+} exhibits intense red emission with a maximum at 602nm, for 460nm excitation. This originates in transition from the lowest state of $4f^65d^1$ configuration to the $^8S_{7/2}$ state of $4f^7$ configuration. The excitation arises from the transition from $^8S_{7/2}$ state of $4f^7$ configuration to the states belonging to $4f^65d^1$ configuration. Emission in SrS: Eu^{2+} is around 602nm. This is because Eu^{2+} neighbours in SrS host are sulphur ions. Dorenbos has discussed Eu^{2+} emission and excitation in detail.

The excitation spectrum monitored at 602nm emission shows broad excitation band spread in 400nm - 500nm. This makes it suitable conversion phosphor for blue LED chip.

3.3 CIE 1931 Color Co-ordinate

Fig.4 shows the CIE 1931 color coordinates for the as-synthesised SrS:0.05 Eu^{2+} phosphor was found out by using Radiant Imaging color Calculator. The color coordinates for the said phosphor are (0.57, 0.42) indicating orange-red colour emission. This phosphor is suitable red phosphor for LED application.

Fig-4: CIE 1931 color co-ordinates for SrS:0.05 Eu^{2+}

3.4 CONCLUSION

Modified wet chemical soft route was adopted for the synthesis of well-known red emitting phosphor SrS:xEu^{2+} . The powder XRD pattern of SrS:Eu^{2+} matches well with ICDD file 75-0895. The excitation spectrum monitored at 602nm shows broad excitation band ranging from 400nm to 500nm. The phosphor shows CIE 1931 colour coordinates as (0.57, 0.42) indicating orange-red colour emission. The excitation band shows excellent spread in blue region of the spectrum. This makes it potential candidate for LED application.

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A STUDY ON CUSTOMER SATISFACTION IN SREE ANNAPURNA RESTAURANT, COIMBATORE

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ABSTRACT

Customer satisfaction is an important ingredient for a business. "Customer is king", maintenance of long-term relationship with customers facilitate the business. Many attributes like service quality, food product, cleanliness, dining environment, customer relationship management can be assessed to find out the satisfaction level of customers. Hence, the hospitality industry is determined as main aspect of backbone and it is comprised of customer service that is shared by all segments of the industry and is one of the biggest employment generators for the country. The facilities and services provided has evolved over the last decade towards the extensive use of technology, environment friendly services, pricing, market segmentation, regional preferences, etc. The purpose of customer satisfaction is to build the relationships among customer and also acquisition of customers like retention. The effective use of customer satisfaction measurement can assist in the organization's relationship for building activities will also be contributing to the profitability of the organization.

Keywords: Customer Satisfaction, technology, organization, loyalty, Hospitality Industry.

1.1 INTRODUCTION

A customer is a person who influence or decides on the acquisition of our product or else uses one of these products or services.

The introduction of idea to see customer as rational and emotional decision maker studies have directed their efforts in understanding customer experience in different sectors. It has been argued that customer experience is a significant factor for the service brands as more customers demand environment-friendly products and services or expect firms to behave more sustainably, firms respond by adopting a variety of sustainability practices.

To be satisfied, however, customers require credible information and/or signals that firms actually do what they claim. Here, we examine the relationship between environmental practices and customer satisfaction and argue that this relationship may be strengthened if environmental practices are linked with service quality practices, which are also critical for a service firm's success. Synergies between environmental and service quality practices implemented by a service firm can increase the level of customer satisfaction, compared to a scenario where only environmental practices are implemented. We also argue that linking environmental and quality practices is particularly important in services given the customer's presence in the system and role as co-producer but also because a significant portion of a service firm's environmental operations are hidden from customers.

Service sector has increasingly been considered as an important sector, making up the majority of the economies, in particular those of advanced nations. The share of service sector contributing to output and employment is also growing. The rapid development of the service industries in the 21st century and the inevitable rise in competition between rival companies have resulted in an increasing need for service providers to identify service quality gap in the market in order to improve service provision, retain customers and create new customers. This encourages firms to search for competitive advantages through placing more emphasis on the quality of their products either goods and/or services. Firms that achieve high levels of service quality tend to realize high levels of customer satisfaction and sustainable competitive advantage.

1.3 NEED FOR THE STUDY

Sree Annapurna hotel have become important place of attraction among the family members and friends in all over Coimbatore. Tastes and quality of food they serve attract the people of Coimbatore. It has become an important hotel in Coimbatore. So, there is necessary to study the customer satisfaction about Sree Annapurna hotel.

1.4 SCOPE OF THE STUDY

Customer satisfaction is very voluminous. Thus, the study in a limited aspect within the literature the research focuses on the Satisfaction of customers. The results of the study can be used for the betterment of the Sree Annapoorna Restaurant.

1.5 OBJECTIVES OF THE STUDY

- To examine the gender difference towards Customer Satisfaction.

- To analyze the different age group respondents towards the factor customer satisfaction.

2. REVIEW OF LITERATURE

Angell and Klassen(1999) and Jabbour(2014) determines about Services quality which is considered as substantial and it comes to define organization success. It deliver should be best services quality to customers. Employees to perform providing quality service sustain customers' confidence and gain competitive advantages over their competitors. Cleanliness and atmosphere of edifice in making serenity and succeeding happiness among customers. Confirms direct relationship between Service Quality and customer satisfaction.

According to Soderlund (1998) explains about the aims to analyze overall customers their opinion customer services marketing to assess customer satisfaction in terms of tangibility, reliability, responsiveness, assurance, empathy and facilities/attraction.

According to Patterson (1997) explained about Customer satisfaction is the key driver for any organization to sustain in current competitive Service providers.it also provide various suggestions to the customers so as to make their services more efficient and effective.

According to Cronin andJ.,Taylor, S.(1994) examined customer satisfactions as dependent variable with other independent variables such image, customer expectation, service quality, perceived value, locality, and complaining behavior. The second goal propose a customer satisfaction model for hotel.

Johnson and Fornell (1991) explained in which services depend on the type of product, it differs in the various organizations. Service can be defined in many ways depending on which area the term is being used. An author defines service as "any intangible act or performance that one party offers to another that does not result in the ownership of anything".

According to Parasuraman (1988) and Gronroos (1990) assess the outcome of service recovery on customer satisfaction in hospitality industry also highlight the significant relationship between the system recovery and satisfaction of customer. Service recovery has positive effect on customer employee empowerment which moderates relationship between service recovery and customer satisfaction.

Solomon (2009) explained about customer as a stakeholder of an organization which provides payment in exchange for the offer provided to him by the organization with the aim of fulfilling a need and to maximize satisfaction. Sometimes the term customer and consumer are confusing.

A client are often a client, but a consumer may not necessarily be a customer. Another author explained this difference, i.e. a client is that the one that will the shopping for of the merchandises and also the client is that the one that ultimately consumes the product.

3. RESEARCH METHODOLOGY

In this study, descriptive study research method has been done to find the customer relationship management towards customer satisfaction. A sample style may be a definite arrange of getting a sample from a given population. It refers to the technique or a procedure the researcher would adopt in selecting item for the sample. Sampling design deals with the method of selecting item to be observed with the given study. Sample design is determined before data are collected.

Population is finite and number of items is certain. The population taken into consideration for the study consists of all level customers visiting Sree Annapurna Restaurant. Since, the population size is known, the sample size is derived, and it is 200, taken for the study may be sufficient to meet out the objectives of the same.

The population is proportionate and finite .The sampling procedure undergone is probability sampling. So, finally simple random sampling method is applied to draw the samples.

4. ANALYSIS OF DATA

4. ANALYSING THE OPINION OF MALE AND FEMALE RESPONDENTS TOWARDS CUSTOMER'S SATISFACTION

Ho: Respondents with different Gender have same level of opinion towards the factors of customer's satisfaction.

Table 4.1

	Gender	mean	Std.deviation	Sig(2-tailed)	Sig	Null hypothesis
Customer relationship management	Male	25.9524	198	.000	.284	Accepted

	Female	30.7664	131.873	.000		
Food product	Male	13.2857	198	.000	.637	Accepted
	Female	15.4891	116.357	.000		
Service quality	Male	10.3651	198	.000	.234	Accepted
	Female	11.8394	131.506	.000		
cleanliness	Male	19.6508	198	.000	.219	Accepted
	Female	23.1971	133.624	.000		
Dining environment	Male	22.3492	198	.000	.007	Rejected **
	Female	25.6204	176.396	.000		

Note: *Significant difference at 0.5% level

From the above (table 4.1), shows that there is significant difference in opinion among male and female on the factors dining environment .Hence, the null hypothesis is rejecting for **Dinning**

Environment.

Therefore it is evident that there is no significant different in opinion exists among the male and female respondents for the factors of customer satisfaction like customer relationship management, food product, services provided, cleanliness,dining environment.

4.2 TO EXAMINE THEAGE DIFFERENCES TOWARDS FACTORS OF CUSTOMER SATISFACTION

Ho: Different age of respondents have the same opinion towards the factors of customer satisfaction.

Table 4.2

	Age	Sum of Squares	F	Mean Square	df	Sig.	Null hypothesis
Food product	Between Groups	380.027	4.640	126.676	3	.004	Rejected**
	Within Groups	5351.473		27.303	196		
	Total	5731.500			199		
Service quality	Between Groups	139.964	5.050	46.655	3	.002	Rejected **
	Within Groups	1810.631		9.238	196		
	Total	1950.595			199		
Cleanliness	Between Groups	63.769	4.246	21.256	3	.006	Rejected **
	Within Groups	981.106		5.006	196		
	Total	1044.875			199		
Dining environment	Between Groups	302.741	5.794	100.914	3	.001	Rejected**
	Within Groups	3413.979		17.418	196		
	Total	3716.720			199		
Customer relationship Management	Between Groups	49.609	.801	16.536	3	.495	Accepted
	Within Groups	4046.771		20.647	196		
	Total	4096.380			199		

Note : *Significant different at 0. 5% level

From the above (table 4.2),it is observed that the level of significance value for the factor of **food product, service provided, cleanliness, dining environment** observed the level of significant value is lower than 0.05 . Hence the null hypothesis is rejected for the above mentioned factors.

But for the factor **customer relationship management** the respondent of different age group have the same opinion. Hence, the null hypothesis is accepted.

5. FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 FINDINGS

By the help of Z-test, male and female respondents have difference in opinion for the factors of customer satisfaction like **dining environment**. But for the other factors like **food product, services provided, cleanliness** the respondents have the same opinion.

By using ANOVA it is observed that the different age groups have difference in opinion for the factors of customer satisfaction like *food product, service provided, cleanliness, dining environment*. But for the other factors like *customer relationship management* they have the same opinion.

5.2 SUGGESTIONS

From the above analysis, it has been found that, the following suggestion may be taken into account by customer satisfaction towards Restaurant.

- The hotels in Coimbatore city required more interaction with guest to increase the level of satisfaction. The other factor like facilities, transportation, security, building infrastructure and other variable can be improved.
- The complimentary gifts can be modernized and the hotel manager can able to understand the guest needs and expectation.
- The booking facility such as recreational area and other facilities can be improved in ambience, quality of the food and taste.
- Major respondents felt that the indoor ambience and quality of hotel is not up to the expected level and the hotel should keep the ambience clean and tiny.
- The hotels needs to establish some form of customer retention strategies like careful considerations, clear monitoring on specific customer, discounts, complimentary, offers and loyalty programme to retain the customers.

CONCLUSION

From the above study, importance of Customer Satisfaction measurement in hotel is analyzed to identify the level of customer satisfaction in hotels. The present study reveals customer satisfaction factors like food product, service provided, cleanliness, dining environment, customer relationship management. Understanding the guest need and expectation is more essential for the people in the hotel industry to improvise the services and customer satisfaction.

The findings from this present study reflects that an element of Customer satisfaction (food product, service quality, cleanliness, dining environment, customer relationship management) have a significant and positive impact. When the customers feels satisfied with the service quality and features, it will lead to their behavioral intentions like recommending this hotel to others, they also would like to come back to this hotel in the future even if the prices were high.

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ARTIFICIAL INTELLIGENCE AND CHANGING ROLE OF ACCOUNTANTS

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ABSTRACT

The world is about to witness 'Fourth Industrial Revolution' with the technology changes like data automation, machine learning and artificial intelligence. Artificial intelligence (AI) has perceived remarkable growth in the recent years. It has wide applications in online activities and is increasingly affecting our day to day life. The boom in the technology across plentiful industries has changed the way of working of many business professionals so accounting cannot be an exception. With an intention to form a positive visualization of the future, the accountants are required to improve a deep understanding of how AI can resolve accounting and business problems, what can be the applied challenges and the expertise the accountants would need to work along with intelligent systems. The paper highlights the application of AI in accountancy, its challenges, prospects of AI in accounting field and suggestions to improve the use of AI.

Keywords: Artificial intelligence (AI), Accountants, Data automation, Fourth Industrial Revolution, Intelligent systems, Machine learning

1. INTRODUCTION

The advent of new knowhow and capacity to get used to the quick stride of change are the biggest challenges facing the accountants. These challenges have been cited in a survey of Accounting Today which included practitioners, firm leaders, association heads, regulators, consultants and other thought leaders. The developments in knowhow results into society- and economy-wide effects that will transform the way we all perform our business activities. The world is about to witness 'Fourth Industrial Revolution' with the technology changes like data automation, machine learning and artificial intelligence. Artificial intelligence (AI) has perceived remarkable growth in the recent years. It has wide applications in online activities and is increasingly affecting our day to day life. These systems do not imitate human intelligence so the experts use the term machine learning system. But these systems produce output which far exceeds the accuracy of traditional accountants. Traditional accounting practices may provide misleading performance measures for businesses involved in mass production so the businesses need to change their accounting practices. AI brings many prospects for accountants to advance their proficiency, provides more vision and imparts more value to businesses.

2. STATEMENT OF PROBLEM

The boom in the technology across plentiful industries has changed the way of working of many business professionals so accounting cannot be an exception. Many of the tasks performed by traditional accountants can now be performed by artificial intelligence (AI) so that accountants can focus on advisory roles that bring greater value to clients. All the activities linked with accounting in due course aim to help people make good decisions about the allocation of resources and hold others to account for their decisions. It is then important to be acquainted with the power of new technologies. So the paper focuses on the benefits of new technology and its prospects and how accountants can help in the process of decision making.

3. OBJECTIVES OF THE STUDY

1. To study the applications of AI in accounting
2. To study the positives and negatives of AI's
3. To study the future prospects for AI in accountancy

3.1 ARTIFICIAL INTELLIGENCE (AI)

An extension of a computer's normal input and output programming is termed as artificial intelligence. It allows computers to make assumptions and adapt how to respond in certain situations in the same manner as we do. It enables them to perform those tasks which normally require an intelligent human being. It appears in manifold forms, including machine-based learning that can slowly but surely become improved at analysis and decisions upon being implemented and speech-based technology that can recognize unlike voices and languages. Now a days AI systems is becoming powerful and improving quickly. They provide outputs that can be accurate and replacing human efforts but they do not replicate human intelligence. Human decisions are based on two ways:

1. **Intuition** : It is a sense that doesn't uses rational processes such as facts and data rather it comes from years of knowledge and experience that allows ones to understand how people and the world works in different situations.

2. **Reasoning** : It is the process of thinking about something in a logical way in order to form a conclusion or judgment. This mindful process uses our knowledge and in general becomes effective when perception has not produced a satisfactory answer. This exercise requires time and effort.

Pros of Artificial Intelligence (AI)

- Due to AI the chances of error are almost nil and greater precision and accuracy is achieved.
- Intelligent machines can replace human beings in performing certain laborious tasks.
- With the use of AI fraud detection in smart card-based systems is feasible.
- Rational thinking of a human being is often intercepted by emotions but it is not a barrier for AI.
- Artificial intelligence can be used in performing recurring and time-consuming tasks efficiently.
- The greatest advantage of artificial intelligence is that machines do not require sleep or breaks and are able to work without stopping. They can continuously perform the same task without being bored or tired.

Cons of Artificial Intelligence (AI)

- The cost of installation, its maintenance and its repairs are very high
- The humans become dependent on machines and their thinking and mental ability is affected.
- The machines working with AI are programmed for certain specific tasks and their zone is restricted to that area so they cannot adapt to new environment.
- It replaces human thereby increasing unemployment.

3.2 APPLICATION OF AI IN ACCOUNTING

The AI techniques can endow accountants with powerful new capabilities, as well as automate many tasks and decisions. Therefore, it is vital to detect accounting and business problems where AI is likely to be particularly productive and where problems may be less suitable for these techniques so that acceptance efforts are driven by business need, rather than simply technology capabilities. Till now there has been restricted use in real-world accounting but early research and implementation projects include:

- It is used to code accounting entries and get better on the accuracy of rules based approach, thereby helping in greater automation of processes.
- It improves fraud detection through different models.
- It is used to make predictive models to forecast revenues
- It helps to analyze unstructured data
- AI technology is able to handle many accounting functions, such as tax preparation, payroll, and audits.
- AI technology is incorporated by accounting software providers to perform basic accounting tasks, such as bank reconciliations, invoice categorization, risk assessment, and audit processes, like expense submissions and invoice payments.

The major accounting tasks that are to be affected by AI are

1. Auditing

AI technologies can check and cross foot debit and credit entries and allow analysis of larger populations of data than traditional sampling, freeing up valuable auditor time to focus on areas requiring significant judgment and expertise. Specialized software automates a lot of structured data relating to auditing tasks.

2. Risk management

The field of risk management is well suited to cognitive computing capabilities because fraudulent cases can be missed in the midst of mountains of structured data. With AI, natural language processing uses algorithms to analyze text and exposed disagreement with tax payments.

3. Vendor reconciliation

Some software are designed to use AI to take the automation of tasks, such as invoice processing. Customer receipts can be turned into a machine-readable format, encrypted and then allocated to an account. The policy can also self-learn while tracking invoices and sales and costs data.

4. Regulatory compliance and reporting

AI helps portfolio managers to handle data about investment portfolios and transactions and giving compliance departments right to use more information that helps them to understand the impact of new rules. Within accounting firms, the machines will be able to monitor compliance with regulations as well as organizational policies. The need of hour is that there should be capacity to stay on top of frequently changing tax rules and spot out suspicious transactions more quickly in some areas such as intellectual property theft and insurance claims.

5. Trend analytics

The most stimulating facet of cognitive technologies for accountants will be the capability to release insights that are required to take operational and strategic decisions for clients. AI and machine learning will allow them to take large and complex data sets and make high-quality predictions from that data, potentially giving clients a frame in their field of business. The real-time benchmarking services will be those that help businesses compare how they are performing against their peers and similar industries.

3.3 THE CHALLENGES OF ARTIFICIAL INTELLIGENCE

The technology presents new challenges for business leaders which may have profound effects on the workforce and the society.

- **Data** an algorithm is very much dependent on the quality of the data fed as input. There can be biases in the data. The problem with the finance data is it is difficult to reconcile data from front to back. For AI initiative it is necessary to have data quality program.
- **Black-box effect** There cannot be any reasons to give as to why the algorithm provided positive or negative response to a specific question thus the results of an algorithm are not verifiable. The results can have a hidden bias which might be difficult to identify.
- **Narrow focus:** The algorithms have specific program to detect suspicious payment if there is any other activity committed by any intelligent human it cannot be detected. The algorithms designed lack the ability to examine information with different angles.
- **Responsibility:** If something goes wrong who shall be held responsible complete reliance on machines can for critical activities cannot be afforded by financial institutions so the staff is kept to supervise critical activities.
- **Global risks for incumbents** The small start up cannot compete with large financial institutions because they can have expensive data centre and can hire a research team. Although regulation is a burden on the operations of incumbents it is still protecting the industry from a quick distraction.

3.4 PROSPECTS OF AI IN ACCOUNTING

The investments in AI are growing to varying degrees. It is becoming progressively more common feature in the workplace. It transforms the business by analyzing the data with greater efficiency and accuracy thereby helping the employees to work. Despite the benefits of AI there is a serious threat to the role of traditional accountants as it is expected that accounting tasks like audits, payroll, tax, banking, will be fully automated with the use of AI technologies. But the fact is that accountants would be relieved from menial tasks and will focus on complicated issues.

The companies have advantage to relocate the employees to valuable area thus accountants are able to utilize their time to increase value to the information provided so they can work with other departments such as human resources and operations.

4. SUGGESTIONS

Government' role

In this era of globalization where the competition is so intense India's accounting industry must constantly improve the level of the accounting industry to be in the competition. The government should introduce plans and procedures for the development of artificial intelligence in the accounting field. Some laws and regulations be made to encourage the application of AI in accounting industry.

Enterprise resource management

A new focus for enterprises to expand their core competitiveness is Artificial intelligence. Therefore, enterprises should think of artificial intelligence from the view of the overall situation, and cooperate with cloud computing and big data analysis technology to make efficient use of resources.

Improvement in educational pattern

There should be changes in the curriculum of colleges and universities to improve the quality of accounting education. There should be special training programmes and their theoretical knowledge be linked with accounting practice. Teachers should also be updated with the changes and trends in the development of international financial standards and accounting in order to make accounting classroom teaching and practical teaching in accordance with the recent developments.

Accountant's role

Accountants should pay attention to the development of professional skills and the cultivation of professional ethics, and launch the idea of life-long learning to adapt to the rapid changes and development requirements of the accounting industry in the future. As the system continues to get more powerful, they will be able to move further into complex decision areas thereby replacing humans on the whole in many cases and enabling them to work on entirely different solutions, services and models.

Be adaptable

Looking into the future of accounting the accountants need to improve their skill sets and adapt the technology. When the business needs a change all the stakeholders involved will have to rethink, learn and adapt the new technology.

5. CONCLUSION

Artificial intelligence is not a threat to accountants but is presenting opportunity to accountants it becomes threat to only those who do not adapt it with an innovative mindset. Artificial intelligence systems are improving quickly and they can be very powerful. The outputs generated by this technology can be extremely accurate and replacing the human efforts. Nevertheless they do not imitate human intelligence. There is a need to recognize the strengths and limitations of this different form of intelligence, and build understanding of the best ways for humans and computers to work together. The Indian industry is seeing the wide application of AI in different aspects so the accounting industry should also strengthen the main position of artificial intelligence application in the process of reform and innovation. In order to promote the application of artificial intelligence in the accounting field, it is necessary for the country, enterprises, universities, individuals and others to work together to efficiently solve the problems arising in the process of application of AI.

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IMPROVEMENT OF CLASSIFICATION AND CLUSTERING OF IMAGES USING EVOLUTIONARY TECHNIQUES

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Abstract

Segmentation of medical images is significant as it aids in mining the region of interest, such that the body part under analysis is extracted. Medical image segmentation helps in treatment of diseases, in surgeries and also in medical diagnosis. Various performance factors like Volumetric Overlap Error (VOE, %), Relative Volume Difference (RVD, %), Average Symmetric Surface Distance (ASD, mm), Root Mean Square Symmetric Surface Distance (RMSD, mm), Maximum Symmetric Surface Distance (MSD, mm), were evaluated which shows that outlier detection technique provides better results as compared to the implementation done without this technique.

Keywords: Computed Tomography (CT) Images, Segmentation, Outliers, E-ABC.

1. INTRODUCTION

Segmentation of medical images plays a vital role in diagnosis and dividing an object under consideration from other parts of body in the image under consideration. Medical images can be two dimensional or three dimensional. In a two dimensional image each element is represented as pixel while in three dimensional medical images each element is called voxel [Sharma, N. and Aggarwal, L.M., 2010]. Frequently used images for the purpose of diagnosis are Magnetic Resonance Imaging (MRI) Images, Computed Tomography (CT) images [Norouzi, A. et.al, 2014]. Automatic image segmentation provides accurate results over manual process by involving previous knowledge, result validation and error correction [Zhao, F. and Xie, X., 2013].

Computed Tomography (CT) images find application in diagnosis of brain, chest and liver, as this technique is cheap, sensitive and easily available. Thus computer-aided diagnosis plays an important role in medical diagnosis with better accuracy and in a lesser time [Sharma, N. and Aggarwal, L.M., 2010].

Medical image segmentation is based on features like texture, varying shades of gray level, colour, contrast and brightness. Popular techniques used for segmentation of computed Tomography (CT) images are on the basis of threshold, region, fuzzy or neural networks. Types of medical image segmentation techniques depend on their use, types of image and more significantly are dependent on the body part under consideration. So, selecting an algorithm for segmentation of medical images is still an area of research using which a solution can be derived which is correct as per the judgment of medical experts.

This paper has been organized into various sections wherein first section introduces the concept and significance of segmentation of medical images, second section provides an insight into the survey of research work and innovations that have been done or are in process in the area of medical image segmentation, section 3 deals with the introduction and implementation of the proposed segmentation technique for segmentation of medical images, section 4 provides the results obtained on implementing the proposed technique of medical image segmentation and finally the last section concludes the proposed work.

2. LITERATURE SURVEY

Medical images like Magnetic Resonance Imaging (MRI) Images, Computed Tomography (CT) images are extensively being used for the purpose of medical diagnosis of various diseases. Processing of medical images by utilizing image segmentation has contributed a lot in the surgical process, wherein tissues are extracted using various techniques like thresholding and region growing which are region based or are based on features like gray levels where segmentation can be amplitude based, edge based and region based [Sharma, N. and Aggarwal, L.M., 2010] and classified using techniques like k-nearest neighbor and maximum likelihood [Norouzi, A. et.al., 2014]. Further clustering could be done using algorithms like K-means, Fuzzy C-means and expectation maximization [Norouzi, A. et. al., 2014]. Moreover different hybrid methods like graph cut [Norouzi, A. et. al., 2014] can also be used to segment medical images.

Research on techniques used for segmentation of medical images have evolved since years and thus have been categorized into three generations [Withey, D. J. and Koles, Z. J., 2008]. First generation utilizes techniques like thresholding and region growing for medical image segmentation, while second generation includes image models, uncertainty models and optimization techniques for medical image segmentation. The third generation includes integrating supervised knowledge in the techniques used for segmentation of medical images.

Various issues that affect the process of segmentation are noise that causes variation in intensity, fractional volume outcome which is due to exclusive pixel volume of a certain body part not matching with pixel volume any other part of body, existence of certain objects called artifacts and proximity of gray levels of other body parts due to intensity variation [Sharma, N. and Aggarwal, L.M., 2010].

3. SEGMENTATION TECHNIQUES

Thresholding: Technique of thresholding based segmentation is dependent on the varying intensities and certain other medical features. When thresholding of an image is carried out, it differentiates regions having different intensities. This technique has limitations that it creates only two classes (with values above and below the threshold value) and is sensitive to noise and intensity variation [Pham, D. L., et. al., 2000], which may cause misclassification.

Region Growing: In this technique the location of seed in an image is very significant. The technique works on the principle of homogeneity. The conditions for homogeneity are predefined. This principle of homogeneity is applied on the neighboring pixels. The neighboring pixels that satisfy the conditions of principle of predefined homogeneity become a part of the region. The repetition of the process causes the region to grow. The entire region thus formed constitutes the volume of connected pixels.

4. PROPOSED SEGMENTATION TECHNIQUES

An outlier in an image may be due to the inaccuracy in the intensity of pixels. An outlier deviates from other images of the sample in which it occurs. The deviation can be due to human error, loss of calibration of instrument, change of measuring instrument. Thus finding outliers during image analysis is necessary to observe variations in images. The classification process is based mainly on selection of features and error rate. Thus extraction of outlier images helps in cleaning the set of images to be processed. Clustering techniques can also be used to detect outliers. This classification is based on low medium and high level of the outlier detection. High level of the outlier images will be removed from the list and only those images are taken which are having low level of the outlier. This will give higher rate of segmentation success for the liver from CT image. The proposed algorithm of E-ABC, which is hybrid of fuzzy and ABC, is used in segmentation of CT images of liver. Various steps are followed for segmentation of the liver from the CT image.

- i. Input the image of the CT into the segmentation program.
- ii. Normalize the image for post processing phase.
- iii. Extract the shape prior features of image trained using training set.
- iv. Extract the liver based on features extracted after training of the liver sizes and shapes.
- v. Extract the performance parameters for performance comparison for both the scenarios with and without outlier classification.

5. EXPERIMENTAL RESULTS

In order to evaluate the proposed segmentation method, the experimentation was done on MATLAB R2017b installed in a computer with Intel Core 2 Duo CPU, T6600 @ 2.20 GHz, 3GB RAM. The testing data contains two public databases SLIVER and IRCAD. Five error measures, namely Volumetric Overlap Error (VOE, %), Relative Volume Difference (RVD, %), Average Symmetric Surface Distance (ASD, mm), Root Mean Square Symmetric Surface Distance (RMSD, mm), Maximum Symmetric Surface Distance (MSD, mm), are used for segmentation evaluation.

Fig. 1 to Fig. 5 shows the graph for the Comparison for VOE, RVD, ASSD, RMSD and MSSD for segmentation with outlier detection and without outlier detection. The result is compared for different CT images, which shows that the segmentation results are better with technique using outlier detection.

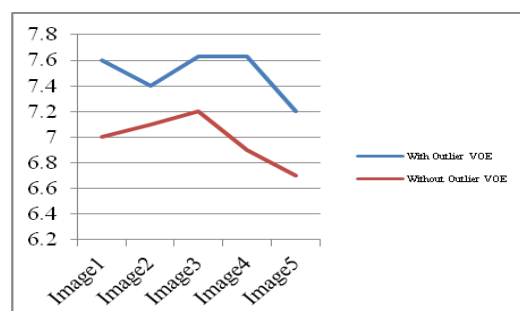


Fig. 1: VOE Comparison Graph

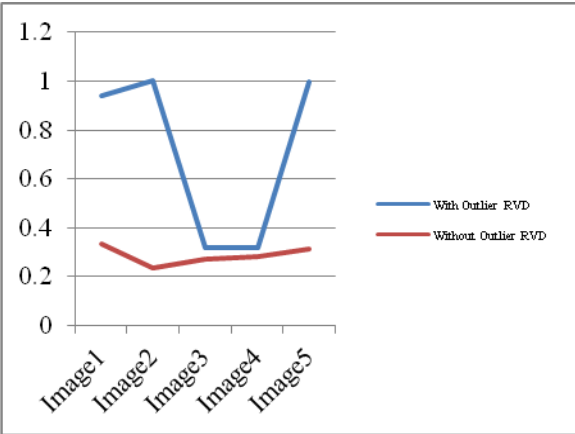


Fig 2: RVD Comparison Graph

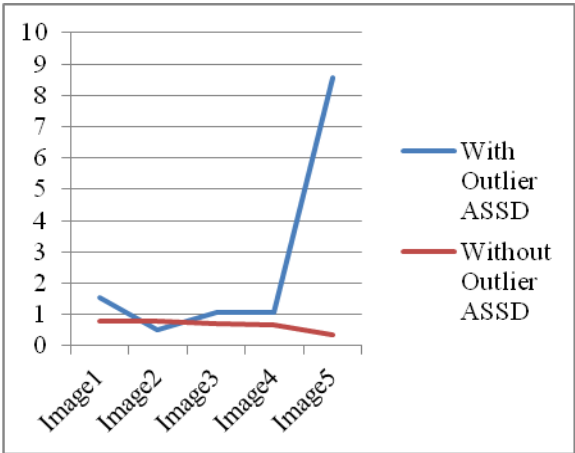


Fig.3: ASSD Comparison Graph

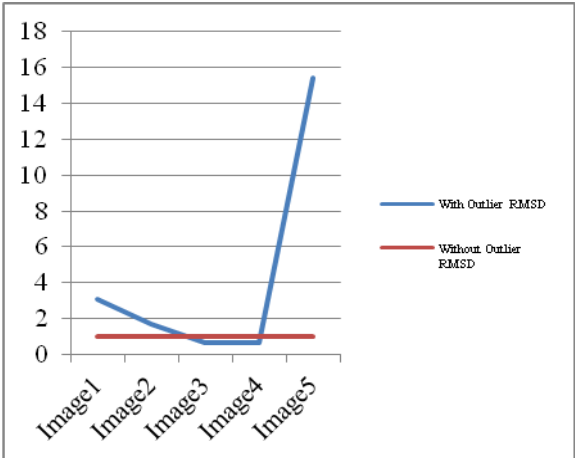


Fig. 4: RMSD Comparison Graph

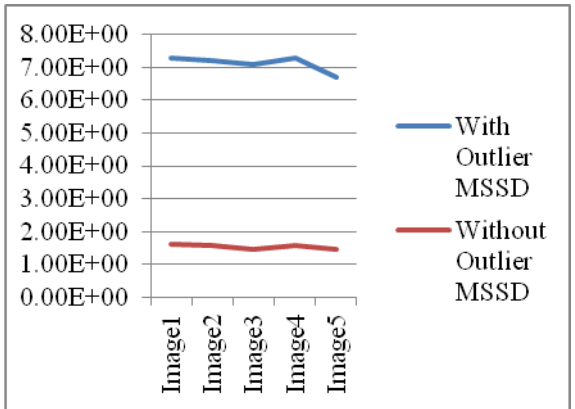


Fig. 5: MSSD Comparison Graph

Further the quality of image can be checked by using the following parameters:

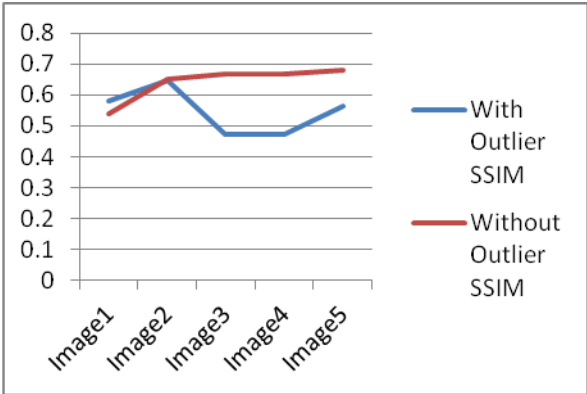


Fig. 6: SSIM Comparison Graph

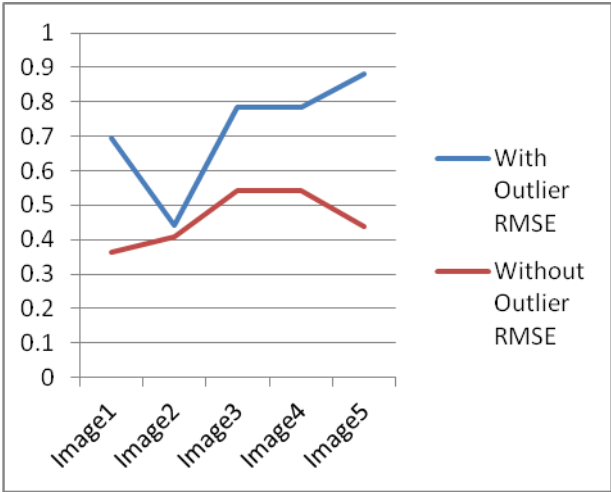


Fig. 7: RMSE Comparison Graph

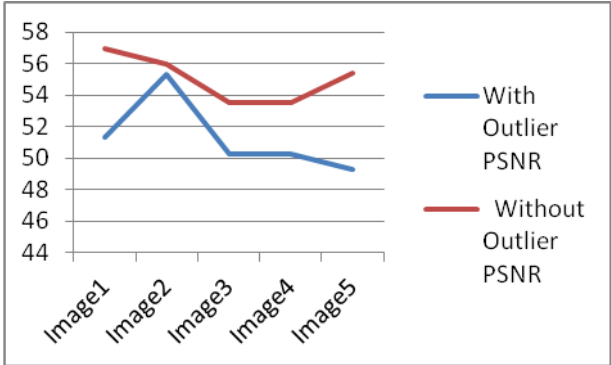


Fig. 8: PSNR Comparison Graph

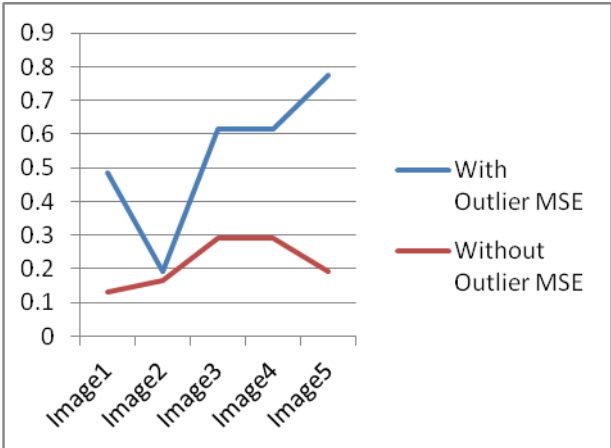


Fig. 9: MSE Comparison Graph

Fig. 6 to Fig. 9 shows the graph for the Comparison for SSIM, RMSE, PSNR, and MSE for segmentation with outlier detection and without outlier detection. The result is compared for different CT images, which shows that the segmentation results are better with technique using outlier detection.

6. CONCLUSIONS

Segmentation for medical image for identification of certain organ is very complex issue. Various researches are being done in identification of liver from CT image. But the success rate for the segmentation has large variance, due to different type of image quality and different types of noises in the image. Various performance factors like Volumetric Overlap Error (VOE, %), Relative Volume Difference (RVD, %) ,Average Symmetric Surface Distance (ASD, mm), Root Mean Square Symmetric Surface Distance (RMSD, mm), Maximum Symmetric Surface Distance (MSD, mm). were evaluated which shows that outlier detection technique provides better results as compared to the implementation done without this technique.

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ROLE AND FUNCTIONS OF TRADITIONAL MOHALLAS: A CASE STUDY OF KASHMIR SOCIETY

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ABSTRACT

Kashmir is usually referred as the melting pot of various cultures and civilizations. Kashmir's contact with central Asia dates back to remote past and covers diverse aspects of social, economic, cultural, historical and intellectual. Caravans of men and streams of thought continuously traversed between the two regions, despite limited means of communication. Frequent cultural intercourse and unrestricted movements of men and material from one region to other right from ancient to modern times culminated into mutual interactions, fusions, and blending which of course influenced institutions, ideologies, arts and crafts of the two regions. The paper analysis Mohallas system in Kashmir society, its structure, administration, its human relation etc. from empirical studies, it is found that Mohalla System in Kashmir lost much of its significance in contemporary period, is again proved true. The hypothesis is supported by the fact that from 19th century onwards very less has been written on the institution of Mohalla in modern Kashmir. The social scientists working on socio-cultural institutions of Kashmir eulogies and patronize the reminiscences of traditional socio-cultural institutions of Kashmir.

Keywords: Mohalla System, Kashmir, Functions, Administration, Structure.

INTRODUCTION

The Valley of Kashmir nestled in north western folds of Himalayas is a transverse, surrounded on all sides by high mountain ranges with lofty snow covered peaks, the surrounding ranges rising to a height of 5,550 meters on the north east where the Banihal pass provides an exit from the valley.¹ The Capital Srinagar often referred as *Venice of the Earth* is located on 34°5' North latitude and 74°50' of East longitude.² Kashmir's picturesque beauty, salubrious climate and holy shrines have given it the appropriate title of "paradise on earth".³ Kashmir, the Asian Switzerland remarkably occupies important place with its border touching china, Central Asia, and on the east Tibet, while on the south and west of it laid the Punjab and the North West frontier provinces of India respectively.⁴ Majority of population consists of Muslims and the most widely verbal language is Kashmiri.⁵ Even though the people have been recognized all over the world since ages for their arts and crafts but agriculture is the main occupation of the people and rice is staple diet of them.⁶ Apart from this, fruits are a most important item of export and source of income of the valley.⁷

Kashmir was the home of many empires and Civilizations, It was by the time of 14th century Islam entered the valley and gained a fair number of followers. The old Hindu realm was displaced by chain of Muslim rulers.⁸ In 1339 A.D, Rinachin Shah,⁹ embraced Islam and adopted the Muslim name of Sadruddin. After his death

¹ Majid Hussain, *Systematic Geography of Jammu and Kashmir*, Rawat Publications, New Delhi: 2000, p.27

² A.R.Khan, *Kashmiri land and people*, City Book Centre, Srinagar :2014, p.16

³ The valley of Kashmir is known world over as the heaven on earth. Its scenic splendor, meandering streams, serene lakes, gushing brooks, snow-clad mountains and green postures have all along attracted tourists from far and wide. The valley has been described as heaven on earth. Yasir Muhammad Baba, *My Land My People*, Gulshan Books, Srinagar: 2007, p.4

⁴ M.L Kapur, *History of Jammu and Kashmir, The Making of The State*, Gulshan Books, Srinagar: 2005, p. 4

⁵ Majid Hussain, *Systematic Geography of Jammu and Kashmir*, p. 93

⁶ 76% of the people of the state in 1901 and 80% in 1921 were agriculturists or dependent upon agriculture. Even those who were engaged in other industries depended on agriculture for their food and some raw materials. M.L Kapur, *History of Jammu and Kashmir, The Making of the State*, p. 11, 217.

⁷ Mist Nationals Kashmir: History Geography and Culture 2013, p 7. Available online at http://www.getmistified.com/competition_docs/2013_Topic_I_Kashmir.pdf

⁸ Margaret Cotter Morison, *A Lonely Summer in Kashmir*, Gulshan Books, Srinagar: 1904, p. 36.

⁹ Rinachin a Tibetan also known as ratanju, ranjpoiratanchanranju shah or rechan shah was the first Muslim ruler of Kashmir, and a contemporary of Edward III of England. G. M. D. Sufi, *Islamic Culture in Kashmir*, Light and Life, Tilak Street, New Delhi: 1979, p. 33

Shahmir of Swat who adopted the name of Shamsuddin became the first Sultan of Kashmir.¹ One of the most benevolent, excellent, popularly known as “Budshah” and most respected of these local rulers was Zain-ul-abideen who ruled Kashmir for years.² The establishment of Muslim Rule coupled with the mass scale conversation at the hands of Central Asian Sufis and saint which resulted in drastic socio-economic and political transformation in Kashmir. The sultans reorganized the kingdom of Kashmir into 3 administrative divisions, Kamraz, (territory to the south of Srinagar) Maraz (territory on both sides of Jhelum and south including Srinagar) lohrah modern poonch and munda areas. These divisions were subdivided into parganas.³ It was during this period that many Islamic institutions took deep roots in the soil of Kashmir, among these remarkable institutions, the institution of Mohalla left deep imprints in the composite culture of Kashmir.

Fig No. 5 Map of Kashmir



Political map of Jammu and Kashmir, Source: Google maps

Objectives

Assess the role and functions of Traditional Mohallas Kashmir society.

Methodology

The present study is based on both primary and secondary sources and the empirical studies carried out by different researchers and government and non- government agencies in relation with the role of Mohalla in Kashmir.

Mohalla System in Kashmir:

As mentioned earlier, the high Mountain walls that surrounded Kashmir on all sides never prevented the stream of thoughts, ideas and cultures from pouring in and out of the valley with its countries like Afghanistan, Central Asia, and China.⁴ Kashmir is usually referred as the melting pot of various cultures and civilizations. Kashmir's contact with central Asia dates back to remote past and covers diverse aspects of social, economic, cultural, historical and intellectual. Caravans of men and streams of thought continuously traversed between the two regions, despite limited means of communication. Frequent cultural intercourse and unrestricted movements of men and material from one region to other right from ancient to modern times culminated into mutual interactions, fusions, and blending which of course influenced institutions, ideologies, arts and crafts of the two

¹ P.N.K Bamzai, *Culture and Political History of Kashmir*, M.D, Publications, New Delhi: 1994, p. 315-316

² Zain-ul-abideen succeeded to the throne in 1417 A.D and ruled wisely and humanely for fifty-two years. He carried out much useful irrigation and engineering works, introduced fresh manufactures and was the patron of poets and musicians. Margaret Cotter Morison, *A Lonely Summer in Kashmir*, p. 36

³ G.M Rabbani, *Kashmir Social and Cultural History*, Gulshan Books, Srinagar, : 1986, p.13

⁴ B.K Kaul Deambi, *Kashmir and Central Asia*, Centre of Central Asian Studies, Srinagar: 1989, p. i.

regions.¹The establishment of Sultanate in 1339 A.D. which opened the flood gates for the migrations of the Muslims in the valley and there was a continuous infiltration of the Central Asian Muslims, comprising of Persiamissionaries, fortunate seekers.² These Muslim immigrants did not bring only a new religious ideology but they also brought their own life style, but the process of infusion accelerated with the diffusion of their culture, but these missionaries brought with them the mechanism and their institutions with the help of which they could satisfy their spiritual tastes and at the same time disseminate them among the local people.³ Thus the establishment of Sultanate and the introduction of Islam in Kashmir not merely came with a set of beliefs, values and rituals but it came as a full fledged civilization- a civilization with new technology, ideas and institutions.⁴ As such it is believed that second urbanization came not only in India but also in Kashmir with the establishment of Sultanate, which gave Philip to the migration process and the immigrant who hail from the famous Cities of Central Asia like Bukhara, Samarkand which were well developed urban cities with all amenities and facilities, introduced new cities *shahr*, towns *qasba*, streets *kocha* and Mohalla's in the new lands as they were urban people and have love for urban life. In the direction of urbanization one of the significant institutions introduced during Sultanate period in Kashmir was the institution of Mohalla.⁵

During the Sultanate, Mohalla's (small administrative units) were introduced in the main towns and with the passage of time these *mohalla's* were found even in the farthest places. Every mohalla is having its own history by and large they were named after the profession of the people living in a particular mohalla.⁶ In most, if not all cases, the Mohalla or part of the Mohalla would be occupied by members of the same family or community and were famous after these families.⁷ The Mohalla would usually comprise 30 or more residential units with an associated mosque or temple.⁸

From historical references and the etymology relating to the naming of various wards and Mohallas, the most important determinants of the settlement were religion and occupation. Most of the traditional residential quarters evolved around major khanqahs,⁹ temples or allegiance to a saint whose shrine was located within the vicinity.¹⁰ Apparently, the Mohallas and residential quarters also started getting organized along occupational

¹ B.K KaulDeambi, *Kashmir and Central Asia*, p. v

² B.K KaulDeambi, *Kashmir and Central Asia*, p. 62

³ Muhammad Ashraf Wani, "Modes of Technology and Culture Transmission from Central Asia to Kashmir", (A.D.1339-1586), (Eds.), B .K KaulDeambi, *Kashmir and Central Asia*, Centre of Central Asian Studies, Srinagar, Kashmir:1989, p. 63

⁴ Muhammad Ashraf Wani, *Islam in Kashmir* (fourteenth to sixteenth century), Oriental Publishing House Srinagar: 2004, p. 41

⁵ Some seven hundred years back the Sultans of Kashmir founded part of city on the pattern of beehives. These clusters of houses in the old city are divided into numerous localities known as Mohallas. Zahid G. Mohammad, *Srinagar: The City of Resistance and Culture, Story of Downtown Boy*, Gulshan Books, Srinagar: 2016, p. 436

⁶ Zahid G. Muhammad, *Srinagar My City My Dreamland*, Gulshan Books, Srinagar: 2011, p. 29

⁷ Reminiscences of these family names or caste are alive even today like chestikucha, aushayeeekucha, kasharkucha etc.

⁸ A unique feature of an otherwise densely congested older city is the physical openness associated with most of the prominent shrines and temples of the area. Also associated with these buildings is a sense of monumental scale, towering above the surrounding residential quarters. The city was also dotted with smaller mosques and temples which principally served the immediate mohallas. Hakim Sameer Hamdani, "Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City," Indian National Trust of Art and Cultural Heritage, j&k Chapter: 2010, p. 25-26

⁹ Khanqah is the biggest centre of the diffusion of Islam. To preach such Islamic teachings a network of Khanqah were built in different parts of the valley, particularly amid the Hindu localities and very close to their places of worship so that depressed sections among them would be able to compare their own caste-ridden society with the casteless social system of Islam. Muhammad Ashraf Wani, "Modes of Technology and Culture Transmission from Central Asia to Kashmir", p. 65

¹⁰ Of some quarters of Srinagar which are famous after Muslim saints or institutions mention may be made of hisarisa'bun (the place of saiyidhisari), Jami masjid, khanqahs-I- mu'alla, pir haji Muhammad mad'in sahib,

lines. As more and more members of the same family associated with the same profession, the Mohalla developed as close knit communities with strong family and occupational linkages.¹The Mohallas in Kashmir were named on the basis of their crafts and trades and professions e.g. *Roshangar Mohalla*, (Mohalla of polishers) *Naqash Mohalla* (Mohalla of painters), *Ranger Mohalla*, (Mohalla of dyers), *Shashgari Mohalla* (glass makers), *Gour Mohalla*, (Mohalla of cow-herds) *Nayed Mohalla*, (Mohalla of barbers) *Hakeem Mohalla*, (Mohalla of unani medicos) *Bandhokhar Mohalla*,The Bandhokhar Mohalla situated on the southern side of Srinagar near Rainawari was the centre for manufacturing guns in this Mohalla there were many families who were engaged in this business. The guns, the Catapults from this Mohalla were so famous that even the pathans who came from Afghanistan during afghan period buy guns from this area.²(Mohalla of gun makers) *Khar Mohalla*, (Mohalla of smiths) *Chann Mohalla*, (Mohalla of carpenters) *Dasill Mohalla* (Mohalla of masons) *Pujj Mohalla*, (Mohalla of butchers) *Bandd Mohalla*, (Mohalla of folk singers) *Wani Mohalla*, (Mohalla of retailers) *Kral Mohalla*, (Mohalla of potter makers) *Galwan Mohalla*, (Mohalla of horse keepers) *Sonar Mohalla* (Mohalla of gold smiths) *Saraf Mohalla*, (coin makers) *Razagar Mohalla* (Mohalla of rope-makers) etc. ³In the Razagar Mohalla majority of people where engaged in the manufacturing of ropes from straw, quoin that grow along the rice fields, yechkar that grow in abundance in the damp rich soils and ropes from this plant where superior to that made from Indian jute and ropes.⁴ There used to be a family of barbers in each Mohalla or village or town.⁵ In the Kak Mohalla mostly the vegetable growers lived.⁶ There were families in some Mohallas who expert in making bangles and ceramic cups.⁷ In the present century most of the Mohallas lost their commercial importance but still many of these Mohallas has retained their importance for their specialties like weaving the best Kashmir's woolen, silken and course cloth.⁸Towns were divided into kochas streets and Mohallas. In each such Mohalla people of different crafts, profession and caste used to reside. Such divisions never appear to be on the basis of religious affinity. Likewise, each street (kucha) was also famous for the sale of specific crafts/commodities. Adding to this some Mohallas are also named after prominent individuals hence termed as *Kak Mohalla*, *Rather Mohalla*, *Beigh Mohalla*, *Bhan Mohalla*, *Mir Mohalla* etc.⁹ it is also worth noting that some famous Mohallas are named after a bridge and its builder, the majority of whom were on the name of the sultans, for example Aali Kadal, Zaina Kadal, Habba Kadal, and Fateh Kadal.¹⁰

bulbul langar, baha al- din sa'bun, uwasisa'bun etc. Hakim Sameer Hamdani, "*Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*", p. 25

- ¹ It is an agglomeration of different technologically specialized quarters which came into being during the sultans owing to the large scale influx of specialists from different parts of the Muslim world and their settlement in the capital city under the nourishing care of the sultans. Some of the famous quarters of Srinagar which assumed the specific technology related names during the sultans are known by the same designation up to the present day. In fact there is hardly any quarter or street in the historic Srinagar, which is not named after one or the other traditionally craft introduced during the period of the sultans. Hakim Sameer Hamdani, "*Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*", p. 26 See also, Muhammad Ashraf Wani, *Islam in Kashmir*, p. 41-42
- ² Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 58-59.
- ³ Iqbal Ahmad, *Masterpieces of Kashmir*, Gulshan Books, Srinagar: 2012, p.72
- ⁴ Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 122
- ⁵ Parvez Ahmad, *Economy and society of Kashmir, a Study in Change and Continuity*, (1885-1925), Oriental Publishing House, Srinagar: 2007, p. 301
- ⁶ Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 121
- ⁷ Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 121
- ⁸ Zahid G. Mohammad, *Srinagar: The City of Resistance and Culture, Story of Downtown Boy*, p. 461
- ⁹ Ali Mohammad Rather, "Mohalla System of Uzbekistan & Kashmir, A Comparative Study," *Journal of Central Asian Studies*, Vol. XVIII, 2009, p. 155
- ¹⁰ It is also note worthy that before the advent of Islam the prevalence of Buddhism and Saiva and viasnava Brahmanism dominated the religious scenes and majority of the villages and Mohallas are either named after Saiva or viasnava rulers of Kashmir or after the Hindu god or goddesses or their incarnations or the brahminical religious institutions. Muhammad Ashraf Wani, *Islam in Kashmir*, p. 38- 42

3.2 Administration

Regarding the organization, each Mohalla comprises local elder or leaders known as Mohalla *zeuthor* Mohalla *zeth*.¹ Most matters of the concern used to be settled by him.² While as in respect of rural areas, the dominant caste or section settles the disputes, generally the Muqadams/Lamberdars³ were supposed to do this job. Adding to this during marriages and deaths, the neighbors in Mohalla provide mutual help in domestic and other work like cooking, distribution of food, arranging the funerals of the deceased, holding feasts for the bereaved families till the end of the 3rd or 4th day depending on the practice in a given Mohalla.⁴ Also at the time of building house, the work was done by the people working in co-operation on such occasions. Food was served to the friends who voluntarily assist in construction process.⁵ The sort of help provided by the neighbors or friends was called palzun (help) in local language. Besides this, in rural Mohallas where agriculture was a major occupation; all the members of the Mohalla were obliged to assist in the construction of and repair of dams. The absentees were indeed fined in cash or kind.⁶

3.3 Structure

Usually the border of a Mohalla were not walled in, comprising three or four storey, big and small houses, each resting on top of stone wall and surmounted by airy pavilions of called zoon dubs. Some of the houses located in Mohallas away from the river would be surrounded by large gardens fenced off from neighbors by means of a mud compound wall.⁷ By the side of every Mohalla markets were founded, which were also famous for the sale of specific crafts/commodities. Indeed most of the streets in Mohalla were lined up with bazaars, which sometimes open into the side streets or ramify off in other directions.⁸ The intersection of road with the perpendicular lane leading to the bridge formed the chowk- a vibrating and pulsating centre of city life.⁹ It was here on the narrow wooden ledge of the shop mostly of barbers, tailors and other mercantile shops having lots of space were centers for political gossip. Over a period of time, some of these shops had assumed the

¹ These community headmen are known in Sanskrit works as kulala or srenimukhya, and in Persian chronicles qabildar. It was these community heads who formed the power structure of the state from village to the central level according to their respective economic and muscle power. Muhammad Ashraf Wani, *Islam in Kashmir*, p. 227-28

² Ali Mohammad Rather, "Mohalla System of Uzbekistan & Kashmir, A Comparative Study," p. 155

³ Muqadam or Lamberdar was an influential person of a village Mohalla chosen by the community members of that village. He exercises his powers by keeping an eye on the theft and other irregularities that took place in mohalla. He was locally recognized leader of his Mohalla community and settles minor disputes between the villages themselves. He was respected in his village and in the neighboring areas mostly because of being physically strong mentally witty, economically sound and more to it being vocal. Parvez Ahmad, *Economy and society of Kashmir, a Study in Change and Continuity (1885-1925)*, p. 235

⁴ Ali Mohammad Rather, "Mohalla System of Uzbekistan & Kashmir, A Comparative Study," p. 155

⁵ Walter R. Lawrence, *The Kashmir Gazetteer volume 1*, Shubhi Publications, New Delhi: 1999, p. 207

⁶ In old days every main water channel there was a Mirab one of the villagers whose duty was to see to repairs and call out labour. M.L. Kapur, *Social and Economic History of Jammu and Kashmir State*, p. 239. See also. Walter R. Lawrence, *The Valley of Kashmir*, Chinara Publishing House, Srinagar: 1992, p. 323.

⁷ In case of Mohallas which were occupied by members of the same family, the individual compounds of different homes would be interred connected by means of a small side door. Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 27

⁸ F. Ward Denys, *Our Summer in the Vale of Kashmir*, Gulshan Books, Srinagar: 2012, p. 48

⁹ The chowks occupied the central and prominent areas of Mohalla and always a very crowded place, e.g. Lal-chowk. While small markets were known as bazaars. The main feature of the bazaar was that all sorts of good and commodities such as cloth, grain food stuffs, drugs, sweets, tobacco, fruits, vegetables, toys etc, were on sale. Similarly bazaars with retail and wholesale commodities were known as gunj like maharaja gunj. It is a walled enclosure which was also used for storing the grain. Sometimes it represented the entire pura or Mohalla and was named after it's founded. Similarly, mandi used to denote wholesale market, e.g. sabzi mandi. Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 26

significance of non-conventional political centers that came to be known as SiyasiPenjies (political centers).¹ Away from the bustle of bazaar life and within the residence of the wealthy traders, were located the various kharkhana² and the chatthaals.³ Also for the children of the affluent, it was Mohalla Maktab or pathshala that provided them with the basic of worldly as well as religious life. Lessons from gulistan, Bastan and Karima served as the principals of elementary education.⁴ Moreover the traders and shopkeepers also appoint chowkidar (watch man) to carry out the watch and ward for their shops during night to prevent theft. In the rural Mohalla's, the chowkidars who are numerous, vigilant, and having inquisitorial body, were belonged mostly of the Doamb⁵ class, who everything of the slightest interest which occurs in rural Mohalla's was promptly reported to the police about the slightest occurrence in rural Mohalla.⁶ He received pay from the Mohalla residents, who contributed warmly for his sustenance.⁷ In the urban mohallas the duty of watch and ward was in the hands of Kotwals who not only looked after the Mohallas but the whole town. The kotwal was to establish night watch chauki in every mohalla. He himself was to ride out patrolling partly loudly pronouncing the word khabardar (alert) the other patrolling parties in the neighborhood street were to repeat the same word. On receiving the information of a theft or dacoits, the kotwal used to visit along with his forces to the spot. The responsibility of kotwal was to apprehend the guilty and recover stolen property. If failed, he was required to compensate the victims within his jurisdiction. He was instructed particularly to discover the real culprits and so deal with him as to prevent recurrence of the crime. In the rural areas the duties of watch and ward were performed by Muqadams/Lamberdars.⁸

3.4 Human Relations and Mutual Support

Historically speaking, the Mohalla provided a platform where the people bounded together and built their collective identities and mutual relationships. Women also participate in wider social networks within Mohalla. Whereas outside their families, the men gossip in the Mosques and on the shops for hours and the topics range from domestic problems to national and international affairs.⁹ At the same time the women in Mohalla conduct the bulk of information exchange, since they are more active, less reserved and less selective in their information exchange than men. Many barbers, tailors and grocers who were having petty shops in the Mohallas

¹ It was from these shops that the political programmes would be communicated even to rural areas through people who visited the city business centers like Zaina Kadal and MaharajGunj for shopping. Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 185

² Kharkhana was a place where carpet weavers. Shawl embroiders and paper- mache artists were engaged in their trade. These karkhanas was somber place which relieved the drudgery of the daily life. It was here that the ancient oral tradition of the spoken word was recited over and over again. And as children worked along with their parents, as they became a living repository of this culture and the Kashmiri language. Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 27

³ Chatthaals, though the term is also used for traditional elementary schools, yet its original association was with the workshops mostly used by shawl weavers. Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 27

⁴ Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 27

⁵ The Doamb's are very important people of Kashmir, for they are the watchmen of the villages. The Doamb's claim descent from a Hindu king, who fear of his numerous sons scattered them over the valley. Walter R. Lawrence, *Kashmir and Jammu, Imperial Gazetteer*, Gulshan Books, Srinagar: 2012, p. 40

⁶ During sultanate period each tehsil or pargana had a police officer called sarhangzada who had under him a group of villages. Dums were under this police officer who swept the streets in the day and kept watch in the night and for this service they were given food by the people in Mohalla. Walter R. Lawrence, *The Kashmir Gazetteer, Volume 1*, p. 228. See also; Mohibbul Hasan, *Kashmir Under the Sultans*, Aakar books, Delhi: 2005, p. 221-222

⁷ Parvez Ahmad, *Economy and society of Kashmir, a Study in Change and Continuity 1885-1925*, p. 302

⁸ The post of Lamberdar was introduced for the first time by Raja Todar Mal during Akbar's time. G.M Rabbani, *Kashmir Social and Cultural History*, Gulshan Books, Srinagar: 1986, p. 11 Parvez Ahmad, *Economy and society of Kashmir, A Study in Change and Continuity 1885-1925*, p. 303

⁹ Bashir Ahmad Dabla, *Ethnicity in Kashmir, Studies in Culture, Religion, Economy and Social Structure*, Jay Kay Book Shop, Srinagar : 2009, p. 51

served as centers for gossip for men.¹ Addition to this in Mohalla, Sarkar-Nalka (public water post) a mini women assembly and a club without membership where girls gathered after dusk used to exchange their views and share each other's joys.² Most of the times the gossip would be about the family issues especially on daughter-in-law's behavior, sociability or marriage. Issues pertaining to boys and girls who crossed puberty, and were considered baaleng were often talked about asking one or other for finding a match.³ The newly wedded also seek advice from elderly people to overcome their day to day problems.⁴ Not only was this sitting in each other compound, basking under sun, they even shared what they were cooking for the evening meals and had an intimate knowledge about each other's' small wardrobes.⁵ Moreover, the other platforms of social activity within Mohalla were Ghats and Yarbals.⁶ These platforms of pre-modern times were a meeting place of friends,⁷ mostly used by womenfolk. There are also several places in Kashmir with yar connected with their names like Khanyar, Naidyar, Surasyar, Shurashyar, Badyar, Sehyar, Ganpatyar, Batyar, Hassanyar, etc. Women would sing rouf (folk song) on Muslim festivals of Eid on the bund and such festivals add color to the event.⁸ Mosques were ordinarily built within the Mohalla; they were sometimes laid out in a garden close to habitation and were usually built by collective contribution from the Mohalla residents. Besides being used as places of worship, these mosques served for imparting elementary education. There are references to Madrasas and Maktabas attached to mosques.⁹

The political development of the 18th century which culminated in the end of independent rule of Kashmir and the establishment of Mughal rule left the social structure of Kashmir society unchanged. The change of political power from Mughal to Afghan rule in the 18th century however exhibited the beginning of decay of traditional Mohalla system and the old ways of spending leisure within Mohalla had lost its significance. The traditional and core features of Mohalla were severely challenged during 20th century.¹⁰ Under the influence of modernization new education gave severe blow to the pivotal institution of Mohalla like Maktabas, Madrasas and home based handicraft centres since under Dogra rule alternative working centre were provided away from home.¹¹ As a consequence Mohalla started losing their original character. People, whose forefathers had lived in

¹ Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 185

² The public water posts in every Mohalla were a place of catharsis for women, a place of great hustle and bustle in the evening. Women generally remained indoors, but after dusk they gathered at the public water posts for fetching water. Mostly the girls and young women attended this job. Zahid G. Mohammad, *Srinagar: The City of Resistance and Culture, Story of Downtown Boy*, p. 163. Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 112

³ Zahid G. Mohammad, *Srinagar: The City of Resistance and Culture, Story of Downtown Boy*, p. 348

⁴ Zahid G. Muhammad, *Srinagar My City My Dreamland*, p. 113

⁵ If some woman owned a kamkab, at last zarbaf or makmal, pheran inherited from mother or grandmother in good condition or had newly stitched gold thread embroidered Kashmiri pheran, in her wardrobe, it was no secret from women of the mohalla. It in fact was seen as property of the mohalla. Zahid G. Mohammad, *Srinagar: The City of Resistance and Culture, Story of Downtown Boy*, p. 438

⁶ A ghat and a yarbal is a platform made of a local stone on the river bank and connected with a stone-stair going up to the bund. These places had witness great hustle and bustle and remained crowded throughout the day. People belonging to different faiths would begin their day with a visit to these Ghats and yarbals for cleaning their bodies before morning prayers. Khalid Bashir Ahmad, *Jhelum the River Through My Back Yard*, Gulshan Books, Srinagar: 2001, p. 68-69.

⁷ C.E. Tyndale Biscoe, *Kashmir in sunlight and shade*, Mittal Publication, New Delhi: 1921, p. 105

⁸ Khalid Bashir Ahmad, *Jhelum the River through My Back Yard*, p. 68-69

⁹ M.P. Singh, *Town, Market, Mint and Port in the Mughal Empire, 1556-1707: An Administrative-Cum-Economic Study*: Tabellen, Adam, New Delhi: 1985, p. 6

¹⁰ The period from the late 19th century to 20th century witnessed the beginning of a continuous process of migration from the inner, older core to the outlying city suburbs. New residential colonies sprang up, some of which were planned like those at Bal Garden, Karan Nagar, SamenderBagh; but most continued to be disorganized organic developments. Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 23-27

¹¹ Hakim Sameer Hamdani, *Shehar-I-Kashmir, Cultural Resources Mapping of Srinagar City*, p. 23-27

a single Mohalla for generations, were forced to move out. With their dislocation the network of family and community life, which had tied the fiber of the Mohalla together, began to break down.

However, the departure of Maharaja and his council of minister in 1947 created political vacuum and at this critical juncture Sheikh Abdullah, the party leader of National Conference reactivated the Mohalla committees to step in and ensure law and order, boost the moral support of the people at large. Later on, this practice of an organized Mohalla support ended and Mohalla lost its relevance as they had no political role henceforth and were never incorporated into the public administrative system. Nevertheless, with the political catastrophe after 1990 the age old neighborhood and community spirit revolved and gained currency. At Mohalla level, various Mohalla committees and relief organization have been formulated for mutual help and assistance within the neighborhood on voluntary bases.

CONCLUSION

Kashmir was the home of many empires and Civilizations, It was by the time of 14th century Islam entered the valley and gained a fair number of followers. The old Hindu realm was displaced by chain of Muslim rulers. In 1339 A.D, Rinachin Shah, embraced Islam and adopted the Muslim name of Sadruddin. After his death Shahmir of Swat who adopted the name of Shamsuddin became the first Sultan of Kashmir. One of the most benevolent, excellent, popularly known as “Budshah” and most respected of these local rulers was Zain-ul-abideen who ruled Kashmir for years. he establishment of Muslim Rule coupled with the mass scale conversation at the hands of Central Asian Sufis and saint which resulted in drastic socio-economic and political transformation in Kashmir. The sultans reorganized the kingdom of Kashmir into 3 administrative divisions, Kamraz, (territory to the south of Srinagar) Maraz (territory on both sides of Jhelum and south including Srinagar) lohrah modern poonch and mundi areas. These divisions were subdivided into parganas. It was during this period that many Islamic institutions took deep roots in the soil of Kashmir, among these remarkable institutions, the institution of Mohalla left deep imprints in the composite culture of Kashmir. The paper anlysis Mohallas system in Kashmir society, its structure, admistration, its human relation etc. from empirical studies, it is found that Mohalla System in Kashmir lost much of its significance in contemporary period, is again proved true. The hypothesis is supported by the fact that from 19th century onwards very less has been written on the institution of Mohalla in modern Kashmir. The social scientists working on socio-cultural institutions of Kashmir eulogies and patronize the reminiscences of traditional socio-cultural institutions of Kashmir.

BANKING SCENARIO IN INDIA: A COMPARATIVE STUDY

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INTRODUCTION

Financial system plays a vital role in the economic growth of the country. It intermediates between the flow of funds belonging to those who save a part of their income and those who invest in productive assets. It mobilizes and usefully allocates scarce resources of a country.

A financial system is a complex, well-integrated set of sub-systems of Financial Institutions, markets, instruments and services which facilitates the transfer and allocation of funds, efficiently and effectively.

FORMAL AND INFORMAL FINANCIAL SECTORS

The financial systems of most developing countries are characterized by coexistence and cooperation between the formal and informal financial sectors. This coexistence of these two sectors is commonly referred to as 'financial dualism'. The formal financial sector is characterized by the presence of an organised, institutional, and regulated system which caters to the financial needs of the modern spheres of economy, the informal financial sector is an unorganised non-institutional and non-regulated system dealing with the traditional and rural Spheres of the economy

The informal financial sector has emerged as a result of the Intrinsic dualism of economic and social structures in developing countries, and financial repression which inhibits the certain deprived sections of society from accessing funds. The informal system is characterized by flexibility of operations and interface relationships between the creditors and the debtors. The advantages are: low transaction costs, minimal default risk and transparency of procedures. Due to these advantages of a wide range and higher rates of interest prevail in the informal sector.

INDIAN FINANCIAL SYSTEM

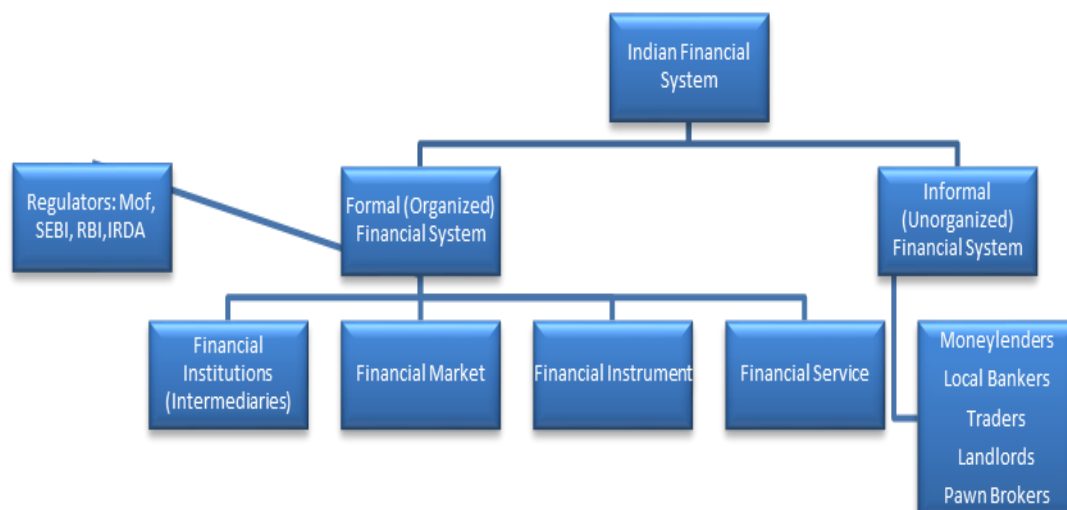
The Indian Financial System can also be broadly classified into the formal (organized) financial system and the informal (unorganized) financial system. The formal financial system comes under the purview of the Ministry of Finance (MoF), the Reserve Bank of India (RBI), the Securities and

Exchange Board of India (SEBI), and other regulatory bodies. The informal financial systems consist of:

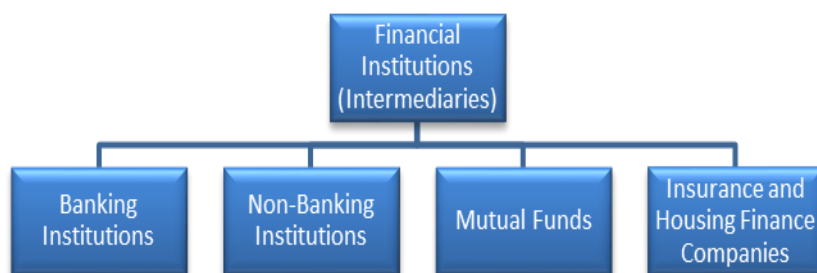
Independence

- Individual moneylenders such as neighbours, relatives, landlords, traders and storeowners
- Groups of persons operating as 'funds' or 'associations'. These groups function under a system of their own rules and use names such as 'fixed funds', 'association' and 'saving club'
- Partnership firms consisting of local brokers, pawnbrokers, and non-bank financial intermediaries such as finance, investment and chit-fund companies.

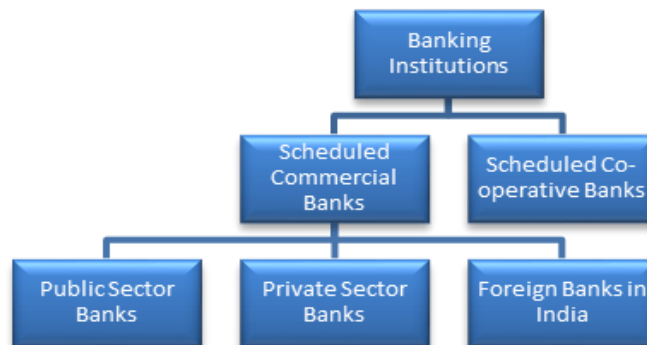
INDIAN FINANCIAL SYSTEM



INDIAN FINANCIAL INSTITUTIONS



INDIAN BANKING SYSTEM



BANKING INSTITUTIONS

The banking sector is the lifeline of any modern economy. It is one of the important financial pillars of the financial system which plays a vital role in the success / failure of an economy. Banks are one of the oldest financial intermediaries in the financial system. They play an important role in the mobilization of deposits and disbursement of credit to various sectors of the economy. The banking system is the fuel injection system which spurs economic efficiency by mobilizing savings and allocating them to high return investment.

Section 5(1)(b) of the Banking Regulation Act defines banking as ‘the accepting, for the purpose of lending or investments, of deposits of money from the public, repayable on demand or otherwise and withdrawable by cheque, draft, order or otherwise.’ section (1)(c) defines banking company as ‘any company which transacts the business of banking in India.

The essential characteristics of banking business as defined in Section 5(b) of the Banking Regulation Act are as follows:

- Acceptance of deposits from the public
- For the purpose of lending or investment
- Repayable on demand or otherwise
- Withdrawable by means of any instrument whether a cheque or otherwise.

SOCIO ECONOMIC SIGNIFICANCE

1. Banks are regarded to be a pivotal economic institutions which contributes sizably to the socio-economic development of the country
2. Serves as an intermediary connecting link between the two important sections of the society viz. people with savings and people with financial needs
3. Inculcate saving habits among people.
4. Promote financial literacy
5. Shoulder social responsibility as a custodian of financial resources
6. Promote capital formation
7. Contribute immensely towards equitable distribution of lendable resource for inter-regional and inter sectoral growth.
8. Cater to the credit and capital needs of entrepreneurs, industrialist, traders, consumes and public at large

9. Promote financial inclusion through opening ‘no frill accounts’ and bringing hitherto excluded groups into the banking net
10. Extend banking services to the under banked and unbanked rural areas
11. Generate employment opportunities
12. Safeguard interest of stock and stakeholders
13. Promote overall Socio-Economic development of the country

OBJECTIVES AND METHODOLOGY

The boarder objective of the study is to examine the banking network in India with regard to total number of banks, bank branch, ATM’s deposits, advances, credit to deposit ratio, total population per bank branch and per ATM’s, pre-capita deposit, per capita advances, cost of funds and return on funds. Further, the banking scenario in Goa is compared with the banking scenario in India. The necessary required data is gathered from reports on Trend and Progress of Banking in India, 2016-17. RBI bulletin, Mumbai, Lead Bank Report, SBI, Panaji – Goa 2017-2018, Indian bank Association(www.iba.org.in) and from reference books in Economics. Simple averages and percentages are used to analysis the collected data.

ANALYSIS AND DISCUSSION

Table-1: Trend and Progress of scheduled commercial banks as on 31st March, 2017

Sr. No.	Parameters	PSB	Private Banks	Foreign Banks	Total
01	Total No. of Banks (in Number)	29 (30)	21 (22)	46 (48)	96 (100)
02	Total No. of Branches (in Number)	93348 (76.00)	29520 (23.76)	299 (0.24)	123167 (100)
03	Total No. ATMs (in Number)	148555 (71.29)	58833 (28.25)	966 (0.46)	208354 (100)
04	Total Deposits (Rs. In Crores)	8076781 (72.00)	2564729 (24.00)	465523 (4.00)	11107033 (100)
05	Total advances (Rs. In Crores)	5557231 (69.00)	2219475 (27.00)	295844 (4.00)	8072550 (100)
06	Credit to Deposit Ratio (%)	68.80	86.53	63.55	72.96
07	(Projected population as on 2017) Total population per Bank Branch (Actual)	14346	45365	4478929	10873
08	Total population per ATM (Actual) (projected population as on 2017)	9014	22762	1386335	6472
09	Per capita deposits (Rs. in actual)	60310	19151	3401	82937
10	Per capita advances (Rs. in actual)	41496	16573	2209	60278
11	Cost of funds (%)	5.62	5.76	4.24	5.21
12	Return on funds (%)	8.15	9.28	7.97	8.47
13	Spread (%)	2.53	3.52	3.73	3.26

Source: RBI Reports on Trend and Progress of Banking in India 2016-17

It can be witnessed from the table that the Indian banking sector has made a record of total 96 banks as on 31-03-2017 comprising of public sector banks, private banks and foreign banks. The analysis reveals that in terms of number of banks, the foreign banks represent more than 48% of the total commercial banks in the country followed by PSB (30%) and private sector banks (22%). The total number of bank branches show that more than 76% of the total number of bank branches are accounted by the public sector banks indicating the presence of bank branches at every nook and corner of the nation, followed by private banks i.e. 23% and the number of bank branches are negligible in case of foreign banks i.e.(0.24%). This clearly conveys that the public sector banks dominate the lion’s share in the total number of bank branches. In case of the total number of ATM’s are concerned, the whole banking sector has made a remarkable growth in the total numbers of ATM’s that are available to the customers. The analysis shows that again the public sector banks are found to have accounted more than 71% of the total number of ATM’s of the banking sector, followed by private banks (28%) and in case of foreign banks, the number of ATM’s are less than one percent. In case of deposit mobilization, the

PSB's are noticed to have represented more than 72% of the total deposits mobilized by the commercial banks in the country. The private banks account more than 24% followed by foreign banks i.e. just 4% of the total deposits. A similar observation is made in case of funds deployment of the banks. Again, the PSB's have contributed more than 69% of the total deposit mobilized by the banks. Where as private banks have advanced to different economic activities to the tune of 27% of the total advances. The foreign banks have made just 4% of the total advances.

Credit to deposit is one of the significant performance indicators of the banking sector. The bank sector-wise calculated C/D ratios show that the private sector banks have registered 86.53% C/D ratio followed by public sector banks (68.80%) and foreign banks recorded 63.55%. This shows that all the banks are found to have advanced their funds efficiently. The overall credit to deposit ratio for the whole banking sector is observed to be 72.96% denoting more than 72% of their total deposits are made available for economic activities and the overall C/D ratio is found satisfactory.

The total population per bank branch analysis reveals that in case of public sector bank, for every 14346 population, there is one bank branch and in case of private banks, for every 45365 population, there is one bank branch available where as in case of foreign banks, for every ,4478929 population there is one branch. The overall analysis shows that for every 10873 population, there is one bank branch. This indicates that still considering the growth of population, the branch networking needs to be enhanced. The total population for one ATM analysis depicts that in case of PSB's for every 9014 population, there is one ATM's and in case of private banks for every 22762 population, there is one ATM. Where as in case of foreign banks for every 1386335 population, there is one ATM. It further reveals that as compared to the total member of bank branches the ATM's are more in case of all the three sectors of banks.

The analysis of per capita deposit indicates that the PSB's are noticed to have recorded the highest deposit per person followed by private banks and foreign banks. Similarly, the per-capita advances show that the public sector banks have recorded the highest per capita advances followed by private banks and foreign banks.

The cost of deposit is one of the major cost components of the banks in terms of payment of interest on deposits. The analysis of cost of funds reveals that the foreign banks are found to have recorded the lowest cost of funds i.e. 4.24% followed by PSB's and private banks. The interest received on funds shows that private banks are found to have received the highest returns on their advances i.e. 9.28% followed by PSB's and foreign banks. The spread analysis of all the three sectors indicates that the foreign banks have accounted the highest spread followed by private banks and the lowest spread in case of public sector banks. It tells that the margin between cost of fund and return on funds in case of public sector banks is very thin as compared to private and foreign banks.

BANKING SCENARIO IN GOA

Goa was liberated from the Portuguese regime yoke on 19th December, 1961 and remained union territory along with Daman and Diu for several years; Goa was elevated to the status of 25th state in the Indian Union on 30th May 1987. It has a geographical area of 3702 Sq. Kms and a population of 14.59 lakhs (2011 Census). The state is divided into two districts (North and South Goa) and twelve talukas. This state has the highest per capita income in the country and the second lowest with respect to poverty ratio. Tourism, agriculture, industry, mining, construction, banking, trade and fishery are the main stay of the Goan economy. Goa with its unique natural beauty has emerged as one of the best and the most attractive tourist destinations in the world.

Banking as an integral part of territory sector has made a remarkable progress and expansion in the state of Goa. The banking system in the state is broadly comprised of SBI and its associates, nationalized banks, private banks, state co-operative banks and urban co-operative banks besides, urban credit co-operative credit societies and primary agriculture credit co-operative societies. The average population per bank branch office is the lowest in India is 1766 as against the national average.10873.

The working and functioning of banks is being closely monitored by the different committees under the leadership of state bank of India. A separate Lead Bank Department for each district, state and block level committees have been working efficiently towards the growth and progress of banks in the State.

These committees will set bank-wise operational targets and the actual performance of the banks is reviewed in the light of set targets. The National Bank for Agriculture and Rural Development (NABARD) as an apex level body established for the promotion of agriculture and rural development, has been also supporting and supplementing efforts of the banks towards the agriculture and rural development in the state. The NABARD extends refinance facility to banks for financing agriculture and allied activities such as minor irrigation

projects, land development, farm mechanization, dairy and poultry etc. Over and above, this institution plays a key role in promoting socio-economic empowerment of rural poor.

Table-2: Banking Scenario in Goa as on 31st March, 2018 (Rs. In crores)

Sr.No	Parameter	Figures
1	Total No. of Banks (Actual)	53
2	Total No. of Branches (Actual)	826
3	Total Population per Bank Branch (Actual) Population (Census 2011)	1766
4	Total Deposits (in crores)	Rs 70108.74
5	Total Advances (in crores)	Rs 21748.84
6	Credit to Deposit Ratio (%)	31%
7	Per capita Deposits (Rs in actual) Population (census 2011)	Rs 480525
8	Per capital Advances (Rs. In actual) Population (Census 2011)	149066

Source: Lead Bank Report, SBI, Panaji-Goa 2017-18

It can be seen from table 2 about the banking scenario in Goa as on 31st march, 2018. The total number of banks have stood at 53 banks comprising of PSB, private, foreign and co-operative banks. The banking sector has made a progress in the total number of bank branches to the tune of 826 bank branches. The total population per bank branches (census 2011) is 1766. It is interesting to note that the total population per bank branch in the state of Goa is the lowest as compared to the total population per bank branches at the national level. This really speaks about the strength of branch banking network in the state of Goa.

The total deposits of the banking sector stood at Rs. 70108.74 crores and the total advance have reached Rs. 21748.84 crores for the corresponding period. The credit to deposit ratio is found to be more than 31% and indicating only 31% of the total deposit mobilized are advanced to different economic activities. It is further noted that more than 69% of the total deposits mobilized are parked idle with the banks not earning anything except incurring cost towards deposit. The pre-capita deposit and per capita advances analysis reveals that the banking sector in Goa has made a record of having the highest pre-capita deposit as compared to the per capita deposit at all India. Similarly, the per capita advances is also found to have registered the highest in the state as compared to per capita advance at all India level.

Table-3: Performance Under Priority Sector Advances in Goa as on 31/03/2018

Sr.No.	Parameters	Benchmark	31.03.2018
01	Total Deposits	NA	70108.74
02	Total Advances	NA	21748.84
03	C.D. Ratio	NA	31.02%
04	Total PSA	-----	7906.77
	Percentage of PSA to total advances	40%	36.35%
05	Dir Advances	-----	0.33
	Parentage of Dir Adv. To Total Advances	1%	0.001%
06	Weaker Section Advances	-----	1087.36
	Percentage of weaker Sec. Ad. To Total Adv	10%	5.00%
07	SC/ST Advances	-----	319
	Percentage of SC/ST Adv. To Total Advances	5%	1.47%
08	Advances to women	-----	2563.09
	Percentage of Adv. To Women to Total Adv.	10%	11.79%
09	Direct Agriculture Advances	-----	805.37
	Percentage of Direct Agri. Adv. To Total Adv.	18%	3.70%

Source: Lead Bank Report, SBI, Panaji-Goa 2017-18

Some of the key indicators like priority sector advances, direct advances, weaker section advances, advances to SC/ST, advances to women and direct agriculture advances are displayed in table 3. It is learnt from the table that the total priority sector lending is 36.35% which is closed to priority sector/lending target i.e. 40% of the total advances. The weaker section advances is stood at 5% which is less than the target. The total advances to SC/ST population is less than 2% as against the target 5%. It is interesting to note that women section has

availed considerably good advances from the banks and advances to agriculture is observed to be negligible. The overall analysis reveals that the many priority sector lending have not achieved the targeted advances.

CONCLUSION

The necessary data pertaining to physical and financial key indicators of scheduled commercial banks for the trend 2016-17 and banking network in the state of Goa in particular is analyzed and discussed based on the analysis and discussion, it is concluded that the public sector banks represented the highest share in the parameters like number of banks, bank branches, ATM's deposit, advances, per capita deposit, per capita advances etc. as compared to private and foreign banks. On the other hand, the banking network in the state of Goa has made a remarkable progress in terms of number of bank branches, the lowest population per bank branch, highest per capital deposit, highest per capita advances as compared to the scheduled commercial bank in the country. The performance in the credit deployment of banks in Goa is found to be very poor and credit to deposit ratio is just 31%. The major challenges like bad loans, non-performing assets, cyber-crimes, managerial problems and growing competition have a close impact on the performance of the banks.

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A STUDY OF DIGITAL MARKETING IN RURAL INDIA

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ABSTRACT

In recent years, marketers see an untapped potentiality in the rural area of the country due to the economic shifts which in turn led to rise in purchasing power of the rural community. The word digital marketing is prospered and stands for booming growth in rural India and the technology up gradation being prominent have a strong influence on the rural marketing by moving towards digital marketing. The companies are facing huge challenges to meet the needs of rural people and this brings rural marketing to grow faster than that of urban marketing. So the marketers are looking for extending their product categories to an unexplored market i.e. the rural market. Introductions of schemes by major telecom players such as cutting down cost of data packs have resulted in significant rise in number of internet users in the rural segments. Use of mobiles and internet will help both business organization and rural customers to meet the demand by giving required products.

The main aim of the study to observe the potentiality of digital marketing effect on rural people and find various challenges that are being faced by rural people, enabling opportunities for further technological advancement of rural markets.

Keywords: Customers, Digital Marketing, Opportunities, Challenges, Rural Marketing

INTRODUCTION

Rural marketing India, the fastest growing large economy in the world, is still popularly known as the country of villages. Around 70% Indians are still staying in 6.5 lakhs villages with 50% of nation's population heavily dependent on agriculture. Heavy dependence on agriculture is one of the reasons of poverty in rural India. This can be very well observed from the big gap in per capita income of urban and rural parts of India. As per statistics of 2016-17, urban per capita income was INR 1, 01,313 while rural per capita income was INR 40,772.

MARKET SIZE

India's per capita GDP in rural regions has grown at a Compound Annual Growth Rate (CAGR) of 6.2 per cent since 2000. The Fast Moving Consumer Goods (FMCG) sector in rural and semi-urban India is expected to cross US\$ 20 billion mark by 2018 and reach US\$ 100 billion by 2025. The growth potential of the rural markets is depicted in the table below:

Products	Amount in Billion (INR)
Consumer Durables	500
Agriculture Inputs	4500
Automobiles(2 & 4 Wheelers)	500
FMCG	6500
Total	12300

*Source: NCAER Report, 2011

DIGITAL MARKETING

Digital Marketing means to promote the products and services offered by the use of digital technologies. Most common platform is the internet, mobile and televisions are also the prime platform examples. 10 years ago televisions were the primary source of digital advertising. Currently digital marketing is referred as the online marketing because of techniques like search engine optimization (SEO), search engine marketing (SEM), pop up advertisements, e-commerce, email marketing etc.

TECHNIQUES OF DIGITAL MARKETING

1. Online tracking - This includes keeping the tabs on the user behavior to collect information about his preference and interests and provide him advertisements based on that. This helps in tempting the customer towards its need.

2. Social Media - Social media has become quite popular in the current days as it provide a platform for the company to promote its product freely or in an economic way. Consumers are also encouraged to share their views about the products and their experiences.

3. E-commerce - These types of website/ platforms perform the data driven advertising. User has to provide data on to the website like their email ids and contact numbers. Customers receive the text or emails about the offers of particular brand.

4. Remarketing - This has pivotal role in the marketing and it helps in segregating the interested customers direct them to the website by placing the ads in front of him. In this system people search for something or visit a particular website and based on that the specified ad is placed in front of him.

HOW WILL RURAL INDIA BENEFIT FROM DIGITAL?

With digital, information flow to rural people will become easier. Info regarding weather, daily rates of crops, milk and milk products, poultry etc. can be made available on mobile phone either by government or by NGOs. Many Indian villagers have capability to produce user specific products but they cannot be sold in cities where demand for such products is available. Online merchandisers' can extend their services for such products so that they can be sold in cities. In long term, digital will help to increase the consumption in rural India and will also create employment opportunities; thereby increasing disposable income- this in turn will have positive effect on economic growth of the country.

OPPORTUNITIES

10 years back, it was very difficult to get mobile network in rural India. With rising competition in telecom industry, need of increasing customer base and high band width, mobile usage has grown in villages. No. of mobile users in rural India has gone up. Though feature phone volumes are higher than smart phone volumes, we can easily observe the shift towards smart phones with entry of next generation in rural employment. Social media tools like Face book and YouTube are at nascent stage but have started gaining momentum (though twitter has long way to go in rural India).

Major opportunities that are available in rural market are as follow:

1. Direct Advertising: Direct advertng helps an advertiser to create awareness about a product or brand. Recently every company can easily show their advertisements for products or services on different digital channels. Direct advertising is a good option for a marketing strategy. It can attract a large mass and develop your business.

2. Easy Consumer Reach: The main advantage of digital marketing is – it can reach a wide range of audience as early as possible. Nowadays people spend a large portion of their time in searching the web. Using internet channels, a marketer can easily and quickly approach to target a number of consumers. There are so many social media platforms for advertising. They are Facebook, WhatsApp, Twitter, Blogs, Instagram, Google+, YouTube, Pinterest, and LinkedIn etc. Using these social media, a marketer can easily reach its targeted customers.

3. Easy Brand Promotion: As the technology and internet have developed a lot, the brand"s may take a great advantage of customer"s reach and co-operate it"s clients successfully. Development of a company depends on the existence of the internet. It can develop your company from any regional market to nationwide and worldwide marketplaces at the same time.

4. Reduced Cost: Digital marketing allows the marketers to save cash. It costs comparatively low than the so-called traditional marketing channels like television, newspapers, radio, banners, magazine etc. Some websites and business profiles generate huge traffic for absolutely free. It is a great option for marketers to spread their business throughout the world without any high cost.

5. Helping Marketers Career: It is a great opportunity for an individual who is making digital strategies and helping companies to expand their business. These strategy makers help to grow the business of a company and himself/ herself makes their own career also. Digital marketing has spread huge career options for digital marketers.

6. Available 24/7: The World Wide Web never rests for any time. So the advertisement will work for 24 hours. Using the electronic industry, your advertisement will physically present for 24 hours a day and 7 days a week and 365 days in a year. Advertisement will always be in front of your targeted customers. This is one of the main important features of digital marketing that we cannot avoid while talking about advantages and disadvantages of digital marketing.

7. Consumer's Convenience to Shop Online: Online shopping is a growing trend. For the popularity and capabilities of digital marketing, customers are more interested in online shopping. A customer can buy a thing whether it is in his/her country or in abroad. Today distance is not a matter to a customer. Also, a customer can get the opportunity of choosing his/her material from so many options. A large portion of people now likes

online shopping for its so many benefits. So, digital marketing opens up a new opportunity for both the company and the customer. Now a retailer and a customer can connect with each other very easily.

8. Global Advertisement: This is one of the most important features of digital marketing. It enables the companies to advertise worldwide and there is no barrier, having so many geographical differences. So, a company can easily expand its business without any extra effort. Sitting in a remote place, a company can spread its business throughout the world. This will lead the company to show off its features to the rest of the world. This global advertisement will spread your company's reputation worldwide.

CHALLENGES

As much as Rural India presents a great opportunity, there are still many challenges that have to be overcome.

- 1. Poor Infrastructural Problems** -Infrastructure is an essential part of e-commerce business. It is not possible to continue the business without a good infrastructure. The Internet is an essential tool for e-commerce infrastructure. Infrastructure is not only essential for the trader but also essential for the buyer. The major e-commerce infrastructures are available computers, mobile and electronic devices of buyer and seller, available internet service providers and internet penetration rate, quality and speed of internet connectivity, internet security, and online payment gateway. Now the traders of various part of India faces poor e-commerce infrastructure, though the penetration rate is 60% in urban areas and 20.26% in rural areas. The growth rate of penetration is increasing day by day. But the logistics and supply chain infrastructure and financial infrastructure are not up to mark for conducting e-commerce business in rural India.
 - 2. Lack of proper Cyber Laws** -Cyber security is a vital tool for maintaining trust in the e-commerce business. The appropriate cyber law is necessary to maintain the cyber security in the country But cyber law is not up to mark in rural India, it needs reform and makes law according to the types of offense for its proper implementation.
 - 3. Lack of Privacy and Security** -The privacy and information of buyer and trader should be secure for maintaining a trustworthy business relation. Because sometimes data may be used by the criminal groups for hacking customer and trader's money which decrease the trust of e-commerce business. Lack of privacy and security is a big challenge for e-commerce business in India. Privacy has been and continues to be a significant issue of concern for both current and prospective electronic commerce customers.
 - 4. The confidence of Customers for Payment and Tax Related Issues** -Most of the people of the rural areas are not aware of the tax-related issues. As a result, it creates some problems in the e-commerce business. People are anxious about the products which are available in e-commerce business because of the price which integrated with tax. Tax administration should be cooperative to put the tax in a way to avoid double taxation. Another issue is related to the payment system. People do not want to use their credit card for online payment to avoid fraudulent activities. Indian e-commerce market can easily gain success by reducing the tax on consumer goods.
 - 5. Lack of Digital Illiteracy** -Digital illiteracy is a top requirement for adopting e-commerce. But in India, the digital literacy rate is not satisfactory which creates a barrier for smooth development of e-commerce in India. Though e-commerce requires a group of top-level IT professional for software development. Infrastructure development, customization of software according to consumer's demand, and negotiate global level e-commerce service providers but top-level IT professionals are interested to go abroad for personal gain as a process of brain drain. So, it is a major challenge for a country like India to engage his IT expert and researcher to engage spreading the e-commerce market. Besides this, an e-commerce friendly curriculum is necessary to develop new professionals and spreading digital knowledge.
- Virus Problem** -A computer virus is a threat to e-commerce. There are thousands of viruses' manufacturer who continuously develop a various virus to steal the information of various levels of people. Indian e-commerce is not out of the influence of the harassment. A computer virus is a tough problem for execution of e-commerce in India. Many buyers and traders are worried about a computer virus, as a result, their trust level on e-commerce are very low. The government should take initiative to implement the antivirus related program for the smooth running of e-commerce in India.
- 6. Localization in-terms of place and language** -India is a big country in terms of population and area. So, e-commerce business in one province is not enough to deliver their product to other areas because of carrying cost, time and other related risks. So, localization is necessary to deliver the product timely

which can stimulate the e-commerce business easily. But unfortunately, it is not up to the mark in India. Internet-based e-commerce has besides, great advantages; posed many threats because of its being what is popularly called faceless and borderless.

7. **Consumer's Perceptions** -Consumer's perception is an important element for e-commerce business. E-service replacements may seem unfamiliar, artificial and non-authentic in comparison to traditional service processing methods. Consumers may believe that new Internet-based processing methods expose them to new potential risks the dangers of online fraud, identity theft, and phishing swindles means schemes to steal confidential information using spoofed websites, have become commonplace, and are likely to cause alarm and fear within consumers.

CONCLUSION

Digital marketing in rural area is quite untouched area and has lot of untapped potential but the techniques are yet being devised to explore this area. Being the time efficient, largely impacted and easy availability, there are certain benefits of digital marketing. The increase in technology diversification also increase the exposure to the people, and it opens up the possibility of social networking, online courses, ticket booking system and various much more. Up until now rural market is product driven not the service driven, with information of product available beforehand to the consumers lets the company to predict behaviour of actual product before launching it, which helps in planning for the outcomes.

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BIODIVERSAL SCENARIO OF LONAR LAKE

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ABSTRACT

Lonar crater is a biogeographically natural wonder found in Buldhana district of Maharashtra State India. It is the world's third largest meteoritic crater and only one saline water ecosystem of this kind occupying most of its floor. It is formed about 50,000 years ago due to the impact of a huge meteorite with high velocity. The lake lies in a nearly circular depression surrounded by a steeply rising escarpment to an even height 135 meter above the water level. The Lonar crater is an assemblage of about six different kinds of ecosystems at one place providing vast scope to the researchers to investigate them from all angles. Very little information is available still today about the flora and fauna naturally flourishing in and around Lonar lake in different ecosystems. Hence the present work has been undertaken to investigate the biodiversal scenario of Lonar crater lake.

Keywords: Lonar crater Lake, biodiversity, saline lake.

INTRODUCTION

Lonar crater is situated in Buldhana District of Maharashtra State India, between latitude of 19° 58' and longitude 76° 31'. The Lonar lake is India's largest and world's third largest meteorite crater. It is formed some 50,000 years ago (Lafound and Dietz 1964).

It contains a shallow saline lake occupying most of its floor. Part of its floor being flooded by a supply of perennial fresh water springs of unknown origin, chief among these are dhara, Ramgaya and Sitanhani. Another geological peculiarity of this lake is, it is the only known terrestrial impact crater in basalt rock, around the rim of crater, occur scattered glass splinters, similar to those collected by Apollo astronauts from moon occur & contain a rare element maskelynite in drill holes through the crater floor. (Frederickson K. 1973).

Lonar crater lake is a biogeographical natural wonder with hung biodiversity. Besides this very little work has been done by the different researchers to investigate the biodiversal scenario of Lonar crater lake. Biodiversity in simple sense is the variety of all living organisms throughout the world. According to kotwal and Banerjee (2002) biodiversity is defined as, "the variety and variability of organisms and ecosystems is referred as biological diversity."

MATERIAL & METHODS

The present work has been undertaken to study the biodiversity scenario of Lonar lake along with some physico- chemical parameters like P^H , temperature, odour alkalinity & salinity.

To know, the present scenario of biodiversity in and around Lonar Lake an intensive survey was made in the month of August to October. 2015. Larger animals were observed with binocular and photographed by using telelense camera. Smaller animals were collected and preserved in 4% formalin flora in and around lake was observed & records were made. Standard analytical methods were utilized to examine water sample. With the help of an electronic portable P^H meter readings were taken and the temperature was noted down with the help of thermometer.

RESULTS AND DISCUSSION

The Lonar crater lake is highly rich in terms of biological diversity with its uniqueness. Around the lake water there is thick forest containing trees like Babul-Acacia longifolia, Gulmohar- Delonix regia, Custard apple- Annona squamosa, Neelgiri- Eucalyptus globules. Saig- Tectonia grandis, Badve (1993) studied the phytoplanktons of the Lonar lake consisting of eight genera of which three are dominant as Viz. Spirulina, Arthrospira and Oscillatoria. Ghanekar (1996) While studying on phytoplanktons have identified 14 genera of which spirulina is dominant. Spirulina contains 70% Proteins, 16% carbohydrates and 8% fat. Due to its high protein content it is the best food. Due to the abundance of spirulina the water birds have considerably been increased in population. The present investigation also support the fact of predominating spirulina population attracting different kinds of water birds.

The forest ecosystem of Lonar lake compares insects like ants (order: Hymenoptera), varieties of butterflies and moths (Order: Lepidoptera). The millipede spirololus (Order: Juliformia). Pedge and Ahirrao (2016) reported 20 Arthropod species out of which 13 species of butterflies belonging to 4 families of order

Lepidoptera, 5 species of order Orthoptera and 2 species of order Odonata. In the present investigation it has been observed that along with aforesaid fauna the lake area is predominantly dominated by *Julus* funnel spider and signature spider. (Order: Araneidae). Among the molluscs, the slug *Vaginulus* (order: Stylommatophora) has been observed in plenty during rainy season. In saline water *Nepa* commonly known as water scorpion has been observed along with chironomid larvae which are the bioindicators of polluted water. Reptiles like *Calotes* (Sub O: Lacertillia) has been observed commonly anywhere in the forest area. Among mammals the forest area of Lonar lake and the temples around the lake harbour genera *semnopithecus* (Indian Langur), *cynopterus* (Fruit bat), *vesperugo* (Bat) and *Megaderma*.

A small area in the North East region around the saline lake is occupied by local residents for the agriculture purpose, where banana and other crops of economic importance were taken.

During the present study it has been observed that the physico-chemical parameters like P^H , temperature, odour, alkalinity and salinity shows specific peculiarity. The P^H of saline water ranged between 9.5 to 10.5 and that of spring water between 6.5 to 8.2. The odour of saline water is an offensive and that of fresh water is normal. The main lake water is highly saline and alkaline and that of fresh water is normal. The lake water is not suitable for drinking as well as agriculture purposes but the spring water is very much suitable for drinking and agriculture purposes.

Similar findings were observed by previous researchers like Muley and Babar (1998), R.N. Choudhary, B.K. Handa (1978).

CONCLUSION

The Lonar crater lake is a biogeographical natural wonder with an assemblage of about six different kinds of ecosystems including one man made artificial ecosystem. The main saline water ecosystem is highly saline and alkaline having P^H range 9.5 to 10.5. The fresh water ecosystem is having normal salinity and alkalinity with P^H range 6.5 to 8.2. The main saline water ecosystem along with other ecosystems around it, like forest ecosystem, marshy areas, cropland ecosystem and fresh water springs have huge diversified flora and fauna naturally maintained. There is still further vast scope to the researchers to work in this field for further investigation.

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GEOGRAPHICAL INFORMATION SYSTEMS: A TOOL FOR BUSINESS & INDUSTRY

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ABSTRACT

Organizations adopt numerous business improvement methodologies to improve business performance. The growing use of Geographical Information Systems (GIS) in business for operations management and decision making activities. Geographic information system (GIS) technology helps users unlock the full potential of data to improve operational and business results. A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The basic functions of GIS are reviewed and other technologies that GIS can be integrated with to create new applications are explained. A number of application areas in the private sector are identified and a framework for considering applications of GIS as part of a manager's information system is put forward. It is likely that uses of GIS in the private sector will fall mainly within the category of decision support system, in contrast to uses in the public sector which are typically based on needs for operational information. Industries that are using GIS applications that have resulted in energy savings and reduced emissions are examined.

Keywords: Geographical Information system, Technology, Decision support system

INTRODUCTION

A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. Geographical Information Systems (GIS) were once the tools of scientists and geographers but have rapidly become a valuable tool for operations management and decision-making in several industries. The ability to integrate GIS technology with other technologies including the Geographic Positioning System (GPS), cell phones, mobile computing devices, and Radio Frequency Identification Tags (RFID), has helped expand the use of GIS (These technologies have been integrated to help create tools for use in logistics management, transportation services, and natural resources management Applications have also been developed for public utilities design and management health care ,marketing, agriculture, financial services and banking, urban planning , and even the insurance industry Military operations are also being aided with a wide array of GIS.

FUNCTIONS

GIS provides three core abilities that can be integrated or combined with other computer-based or computer-supported applications:

The ability to manage data within a spatial framework,

To perform spatial analyses of the relationship between data elements within the framework.

SPATIAL ANALYSIS

GIS data is maintained by sets of spatial data that can be used to depict layers on a map. There can be, for example, a layer for rivers, a layer for roads, and a layer for zip codes within each geographical boundary. A layer can consist of one or several different features, which are shown on map including points, lines, or boundaries (Rob, 2003).

The management of spatial data is performed through a database function. Database technology has been used in information systems for several decades. In traditional database applications, such as one that provides inventory management for a department store, there is a record for every item purchased or sold by the store. The status of that item along with descriptions, prices, universal product codes, and other information is stored in the database. In GIS the records in the database represent points in a geographical area along with geographic attributes and descriptors of other characteristics of the points.

Spatial analysis is performed by analyzing the relationship between various geographic points in the database. In the past many people relied heavily on printed paper maps to show streets or the topography of a geographical area. They would mentally combine the information on the map with knowledge from other sources including personal experience with the area, or written or verbal instructions on how to navigate to a specific location. This was typically how an individual would personally visualize how to accomplish their goal. With GIS, the combining of data and visualization is performed by the system.

In numerous situations map-based presentations of GIS data is the most effective way to format and present information in a readily usable form because maps are easier to interpret than tables or charts. GIS can also provide various cartographic functions including automatic symbolization based on values of data, automatic text placement, contouring, or surface fitting. In addition some advanced GIS applications can even provide three-dimensional mapping ability for multiple dimensional data. In GIS spatial analysis is performed by combining a wide variety of data sets that provide information for every geographic point in the system. However, the key to making the analysis of several data sets useful is to present the results in a visual manner and again, a map is one of the most popular forms of visualization. In-vehicle navigation systems combine GIS with other enabling technologies. This combination supports navigation with a map shown on a small computer screen along with additional information that helps drivers navigate or find a specific address.

Companies that have the need to manage high-intensity and high-volume logistics operations were among the first to push GIS beyond its basic geographical analysis abilities. The Corporate Transportation Department of Champion International and Federal Express (FedEx) both faced such challenges and in the 1990s started implementing GIS solutions for logistics management. These applications and the companies that pioneered them helped to push GIS into more widespread use and establish the need for people trained in GIS disciplines.

BUSINESS APPLICATIONS OF GIS (CONTRIBUTION FROM IT TO BUSINESS)

1. GIS in Mapping: Mapping is a central function of Geographic Information System, which provides a visual interpretation of data. GIS store data in database and then represent it visually in a mapped format. People from different professions use map to communicate. It is not necessary to be a skilled cartographer to create maps. Google map, Bing map, Yahoo map are the best example for web based GIS mapping solution.

2. Telecom and Network services: GIS can be a great planning and decision making tool for telecom industries. It enables wireless telecommunication organizations to incorporate geographic data in to the complex network design, planning, optimization, maintenance and activities. This technology allows telecom to enhance a variety of application like engineering application, customer relationship management and location based services.

3. Accident Analysis and Hot Spot Analysis: GIS can be used as a key tool to minimize accident hazard on roads, the existing road network has to be optimized and also the road safety measures have to be improved. This can be achieved by proper traffic management. By identifying the accident locations, remedial measures can be planned by the district administrations to minimize the accidents in different parts of the world. Rerouting design is also very convenient using GIS.

4. Urban Planning: GIS technology is used to analyze the urban growth and its direction of expansion, and to find suitable sites for further urban development. In order to identify the sites suitable for the urban growth, certain factors have to consider which is: land should have proper accessibility, land should be more or less flat, land should be vacant or having low usage value presently and it should have good supply of water.

5. Transportation Planning: GIS can be used in managing transportation and logistical problems. If transport department is planning for a new railway or a road route then this can be performed by adding environmental and topographical data into the GIS platform. This will easily output the best route for the transportation based on the criteria like flattest route, least damage to habitats and least disturbance from local people. GIS can also help in monitoring rail systems and road conditions.

6. Agricultural Applications: GIS can be used to create more effective and efficient farming techniques. It can also analyze soil data and to determine: what are the best crop to plant?, where they should go? how to maintain nutrition levels to best benefit crop to plant?. It is fully integrated and widely accepted for helping government agencies to manage programs that support farmers and protect the environment. This could increase food production in different parts of the world so the world food crisis could be avoided.

7. Disaster Management and Mitigation: Today a well-developed GIS system is used to protect the environment. It has become an integrated, well developed and successful tool in disaster management and mitigation. GIS can help with risk management and analysis by displaying which areas are likely to be prone to natural or man-made disasters. When such disasters are identified, preventive measures can be developed.

8. GIS Solutions in Banking Sector: Today rapid development occurs in the banking sector. So it has become more market driven and market responsive. The success of this sector largely depends on the ability of a bank to provide customer and market driven services. GIS plays an important role providing planning, organizing and decision making.

9. Assets Management and Maintenance: GIS helps organizations to gain efficiency even in the face of finite resources and the need to hold down the cost. Knowing the population at risk enables planners to determine where to allocate and locate resources more effectively. Operations and maintenance staff can deploy enterprise and mobile workforce. GIS build mobile applications that provide timely information in the field faster and more accurate work order processing.

10. Land Information System: GIS based land acquisition management system will provide complete information about the land. Land acquisition managements is being used for the past 3 or 4 years only. It would help in assessment, payments for private land with owner details, tracking of land allotments and possessions identification and timely resolution of land acquisition related issues.

11. GIS based Digital Taxation: In Local Governments, GIS is used to solve taxation problems. It is used to maximize the government income. For example, for engineering, building permits, city development and other municipal needs, GIS is used. Often the data collected and used by one agency or department can be used by another. Example Orhitec ltd can supply you with a system to manage property tax on a geographic basis that can work interactively with the municipal tax collection department. Using GIS we can develop a digital taxation system.

12. Deforestation: Nowadays forest area is decreasing every year, due to different activities. GIS is used to indicate the degree of deforestation and vital causes for the deforestation process. GIS is used to monitor deforestation.

13. Lease Property and Management: Revenue can be increased, operations and maintenance cost can be reduced when GIS is used to help manage space. Real estate and property managers can see and make queries about space including its availability, size and special constraints for the most cost effective use.

14. Infrastructure Development: Advancement and availability of technology has set a new mark for professionals in the infrastructure development area. Now more and more professionals are seeking help of these technologically smart and improved information systems like GIS for infrastructure development. Each and every phase of infrastructure life cycle is greatly affected and enhanced by the enrollment of GIS.

CONCLUSION

GIS represents a sophisticated information technology application that has grown in parallel with traditional business IT. As GIS techniques have come to focus on decision support, they have increasing potential for wider use in business, a potential that has yet to be fully realized. GIS has an important role to play in a variety of decision-making systems in specific functional areas, but GIS also needs to be incorporated in enterprise wide systems. Newer technologies such as e-commerce and location based services have an intrinsic spatial element and the spread of these applications will serve to further increase the importance of GIS.

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PHYSICO-CHEMICAL PARAMETERS OF MASOOLI RESERVOIR, PARBHANI DISTRICT

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ABSTRACT

Water is essential component of environment and it sustains life on earth. India has rich fresh water resources in the form of Rivers, Reservoirs, lakes and tanks. This paper deals with the study of some Physico-chemical parameters like Atmospheric temperature, Water temperature, Ph, Dissolved Oxygen and Carbon dioxide of Masooli reservoir from Parbhani District. The findings were carried out from two years of study period during July 2014-June 2015 from two stations (A and B) of Masooli Reservoir.

Keywords: Physico-chemical parameters, Masooli Reservoir, Parbhani District.

INTRODUCTION

Environmental stress is one of the important causes of decreasing fish production. In general large water bodies are very uniform, but smaller bodies of water were variable or subject to the environmental conditions. Various kinds of environmental changes are stressful and lower the resistance power of fishes to infection of pathogens.

District Parbhani is one of the eight district of Marathwada region of Maharashtra state, India. It was previously known as 'Parbhavatinagar. Parbhani city is headquartering of this district. District Parbhani is also known as Land of Saints because there were several saints from this part of Maharashtra. Parbhani District is located at 19.27N and 76.78 E. It has an average elevation of 407 Meters (1335 feet). Parbhani covers 6250 sq.kms of land mass and is located at an average height of 357 meter above sea level. It lies between 18.45 and 20.10 North latitude and 76.13 and 77.39 East latitude. Parbhani district is divided into three sub basins_Godavari, Godavari-Purna and Penganga.

Seasonal sampling of water was done during the course of two years of investigation. The physico-chemical analysis of water from Masooli reservoirs of Parbhani district was done.

The Masooli reservoir is medium sized reservoir constructed on the Masooli River near village Isad, Taluka Gangakhed, District Parbhani. The reservoir is constructed in 1982; lies in between 18°54'-10"N latitude 76°45'-5E longitude. The reservoir has peculiarity as it is naturally situated in hilly region on both sides. The reservoir is rich in flora and fauna around and in as there is no any industry on both sides as well as in catchment area hence it is totally free from pollution load. The reservoir is constructed basically for the irrigation purpose, but now it is also utilized for the fish culture.

MATERIALS AND METHODS**Water Sampling and their Analysis**

The samples of water were collected in separate wide mouthed crew capped, air tight, opaque polythene container. Each sample was collected from 15-20cm below the surface in separate five liter containers and brought to the laboratory for the analysis of physico-chemical parameters with the help of standard methods, Trivedi Goel (1986), APHA (1985) and Kodarkar (1992), IAAB Publication. Findings were compared with WHO and ISI, which are shown in table no.1

The atmospheric temperature, water temperature and PH were recorded with the help of digital potable kit at the field. The atmospheric and water temperature were recorded in degree centigrade, measured with the help of thermometer while pH was measured at the field with the help of digital pH meter. Dissolved Oxygen and Carbon dioxide were also recorded.

RESULT AND CONCLUSION

Temperature influences the parameters like dissolved oxygen solubility, pH, and conductivity etc influencing water chemistry (Ramchandra T. V. and Solanki M. 2007. Envis Technical report 25 Bangalore, India).

Masood Ahmed and R. Krishnamurthy (1990) during investigation on hydrobiological studies of Wohar Reservoir, Aurangabad observed the range of atmospheric temperature was 15.8°C to 30.8°C in (1976 -77) and 15.8°C to 32.8°C in (1977 -78). They recorded maximum atmospheric temperature during summer slightly lesser in monsoon and least during winter. Mathew Varghese Anil Chauhan and L.P Naik (1992) were studied on physic- chemical characteristics of a tropical pond at Chhindwara (M P) recorded highest temperature 45.5 ° c in summer 33.0° c in rainy season and 29.75 ° c in winter.

In the present investigation, the high atmospheric temperature was recorded in summer, moderate in monsoon and slightly lower in winter. The recorded atmospheric temperature was 27°C to 44°C at station A and 24.6 to 46°C at station B.

The range of water temperature was consistently lower than the atmospheric temperature. Shrinivasan (1962) on Bhavani Sagar Lake, Hussainy (1967) on Vihar Lake, Bombay and Verma (1967) on Dal Sagar lake noted that water temperature fluctuate according to the atmospheric temperature.

H. P. Singh (1998) was studies on primary production in Gobindsagar reservoir (H. P.) observed the water temperature varies in between 17°C to 31°C in 1986-87 and 16°C to 29°C in 1987-88.

D. K. Kaushal and V. K. Sharma (2001) while working on limnology and productivity of Badkhal Lake Harayana observed minimum water temperature during winter 15°C and maximum during post monsoon 31.2°C and moderate in summer 28°C respectively.

Narsimha Rao and Jaya Raju (2001) in sewage fed fish pond at Nambur (A.P.) the range of water temperature was recorded between 28°C to 36°C. Water temperature directly as well as indirectly influences many abiotic and biotic components of aquatic ecosystems. It also reflects to the dynamics of the living organisms such as metabolic and physiological behavior of aquatic ecosystem.

Water temperature variations are governed by climatic conditions. Rainfall and solar radiations are the major climatic factors that influence the physico-chemical hydrology of water bodies (Kadiri M. O. 2000, Acta, Hydrobiology 421 (2): 29-40, Odum, O 1992 Ph. D. Thesis, University of Benin Benin city 222pp.)

Temperature influences the parameters like dissolved oxygen solubility, pH, and conductivity etc influencing water chemistry (Ramchandra T. V. and Solanki M. 2007. Envis Technical report 25 Bangalore, India). Solubility of oxygen in the water increases when water temperature decreases (Joshi P. C. and Singh A 2001, Awasthi, U and Tiwari S. 2004).

In the present investigation, the higher values were recorded in summer months; moderate in monsoon and little lower in winter months in the two successive year of investigation. In the present investigation the range of water temperature was 22°C to 40°C at station A and 21.7°C to 40°C at station B

Solubility of oxygen in the water increases when water temperature decreases (Joshi P. C. and Singh A 2001, Awasthi, U and Tiwari S. 2004). Rabalais, N., 2002 used the term hypoxia for low oxygen content and anoxia for no oxygen content in waters. Higher dissolved oxygen in winter is due to absorption of oxygen by cooling (Dwivedi B. K. and Pandey G. C. 2002). Kumar, A, Qureshi T. A., Prashar, A. and Patiyal, R. S. 2006 stated that depletion of oxygen during summer may be attributed to the increase in surface water temperature as well as increases the mineralization of non linking matter that demands more oxygen.

In the present study, the values of dissolved oxygen were maximum in winter, less and identical in summer and monsoon months. In the present investigation the range of dissolved oxygen was between 6.1 to 11.3 mg/l at station A and 7.9 to 11.2 mg/l at station B.

Sharan and Sinha 1988 stated that, the increased bacterial population caused depletion of oxygen and production of more free carbon dioxide.

According to ISI, 1991, WHO the free CO₂ permissible limit for fish culture is 6 mg/lit. Excess of CO₂ and Carbonic acid in water have a marked effect on fish life.

Ekhande A. P. 2010 reported 0.9 to 4.23 mg/l free carbon dioxide in the Yashwant Lake at the same altitude of Lotus Lake. The range of CO₂ recorded was 1.3 to 2.6 mg/l at station A and 1.5 to 2.4 mg/l at station B.

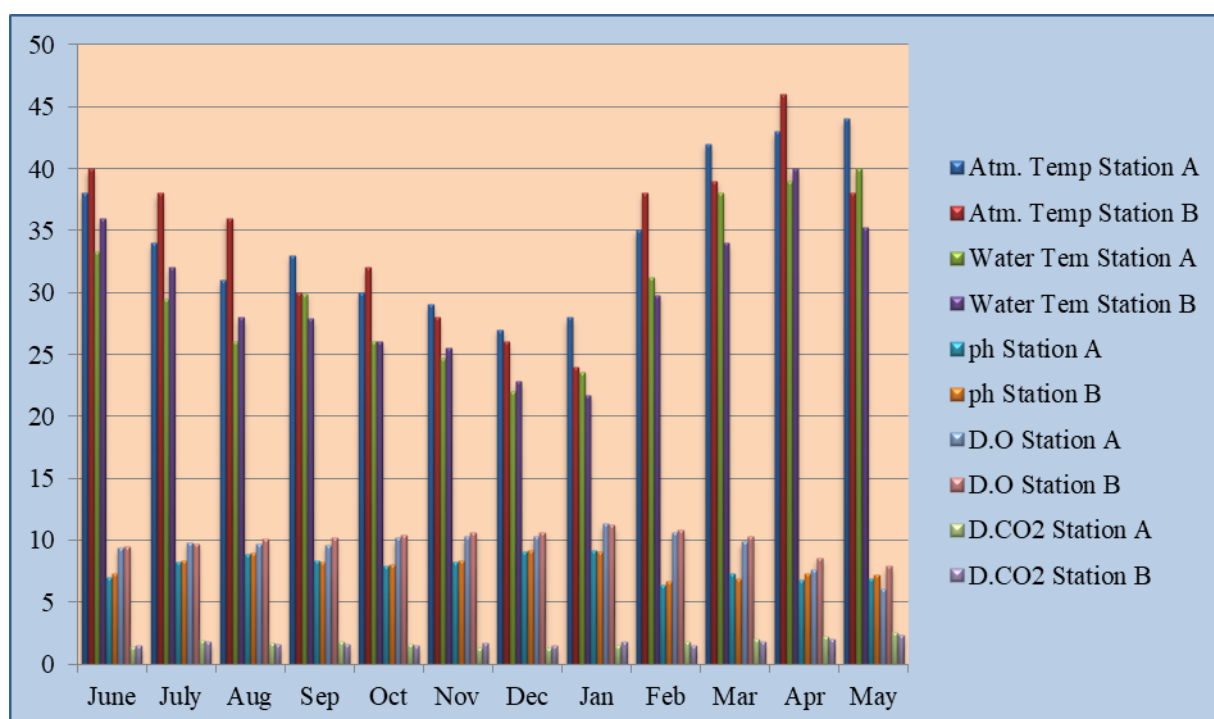
Kaul, V and Handoo J. K. 1980 and Satpathy k. K. Prasad K. E., Rajan M and Arulsamy K. S. 2007) reported that increased surface pH in water bodies is due to increased metabolic activities of aletotrophs because, they utilize the carbon dioxide and liberate oxygen thus reducing H⁺ ions concentration (:Boyd C. E. and Pillai V. K. 1984).

Yogesh Shastri (2000) worked on river Mosam Malegaon (M.S) observed the pH of water varied in between 7.1-8. D.N. Singh (2000) on ax-bow lake the ph of lake water is ranged 7.5- 8.4. Madhuri K. Pejarver and Narayan S. Raut (2002) in Lake of Thane city observed the pH 6.8 and 8.8. C.B. Joshi (1996) in river Sutlej observes pH range in between 7.6- 8.1.

The pH maximum was recorded in summer months with slight increase in monsoon months. In the present investigation the pH was found 6.4 to 9.4 ppm at station A and 6.7 to 9.2 ppm at station B.

Table No.1 showing monthly variation in physic-chemical parameters

Months/ Parameters	Atm. Temp		Water Tem		ph		D.O		D.CO ₂	
	Station A	Station B	Station A	Station B	Station A	Station B	Station A	Station B	Station A	Station B
June	38	40	33.3	36	7.0	7.3	9.4	9.5	1.4	1.5
July	34	38	29.5	32	8.2	8.3	9.8	9.7	1.9	1.8
Aug	31	36	26	28	8.9	9.0	9.7	10.1	1.7	1.6
Sep	33	30	29.9	27.9	8.3	8.2	9.6	10.2	1.8	1.6
Oct	30	32	26	26	7.9	8.0	10.2	10.4	1.6	1.5
Nov	29	28	24.7	25.5	8.2	8.4	10.3	10.6	1.3	1.7
Dec	27	26	22	22.8	9.1	9.2	10.3	10.6	1.3	1.5
Jan	28	24	23.6	21.7	9.2	9.1	11.3	11.2	1.5	1.8
Feb	35	38	31.2	29.8	6.4	6.7	10.6	10.8	1.8	1.5
Mar	42	39	38	34	7.3	6.9	9.9	10.3	2.0	1.8
Apr	43	46	39	40	6.8	7.3	7.6	8.6	2.2	2.0
May	44	38	40	35.3	6.9	7.2	6.1	7.9	2.6	2.4



Graph showing monthly variation in physic-chemical parameters from Station A & B of Masooli Reservoir.

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**EFFECT OF SALT STRESS ON GERMINATION AND SEEDLING VIGOUR OF CHICKPEA
(*CICER ARIETINUM* L.)**

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ABSTRACT

*The presence of salts in soil affects the agricultural soils and constrains the crop productivity. An experiment was done, to evaluate the effect of salinity on the germination of chickpea (*Cicer arietinum* L.) varieties BG 5023 and BGD 72 which were obtained from IARI, Pusa New Delhi. The salinity levels, exposed in terms of Sodium chloride, were control (deionized water), 25mM, 50mM, 75mM, 100mM and 125mM, in a Completely Randomized Design (CDR) with three replicates, containing seven randomly selected healthy and equally sized seeds per petri plate. The study showed that rate of germination and percentage germination significantly decreased with increase in salt concentration in both the varieties however cultivar BG5023 showed better germination percentage up to 100mM of salt concentration. Seed biomass and lengths of radical and plumule also showed significant reduction with the increasing salt concentration in both varieties while as variety BG 5023 showed less reduction than BGD72. Growth inhibition rate also increased as the concentration of NaCl increased, whereas the seedling vigour declined with increase in NaCl concentrations. Plants showed stress tolerance during germination at less concentration while 125mM had deleterious effects on the observed parameters.*

Keywords: Germination, growth, inhibition rate, salinity, stress, seedling vigour.

1. INTRODUCTION

Abiotic stresses like cold, drought, salinity, high temperature, alkalinity, ultraviolet radiations and pathogen attack is the key foundation of crop loss globally by more than 50%. Salinity stress among them is unique by instigating severe impression on crop production world-wide especially in arid and semi-arid agro ecological zone. (Rasool et al., 2013). It is one of the grave problems which restrict the yield of farmed crops with contrary impact on germination, crop vigour and crop productivity (Munns R and Tester M, 2008). Salinity had covered almost 953 million hectares of land in the world (Singh, 2009). Seed germination is one of the serious stage at which various crop plants display their inhibition signs due to salinity. In life cycle of higher plants seed germination is one most important stage and is said as sum of physiological processes occurring inside the seed which starts with the imbibition of water and culminates with emergence of embryonic root. Salt stress affects the plant at seedling stage much higher than other plant growth stages because seed germination usually occurs in the uppermost soil layers which accumulate soluble salts as a result of evaporation and capillary rise of water, thus drops uptake of water and hinders the activities of hydrolytic enzymes which, ultimately inhibits germination of seeds and their growth. (Dubey and Rani, 1990; Kumar et al., 1996). Under salt stress various crop cultivars were testified to differ in germination and seedling growth (Mandal and Singh, 2000) and increased concentration of salinity may influence the germination of seeds either by creating an osmotic potential that prevents the uptake of water or by accumulation of excessive Na⁺ and Cl⁻ ions.

Chickpea (*Cicer arietinum* L.) is one of the most important and primitive leguminous crop cultivated by man and ranks third among the edible legumes in tropical, subtropical and temperate regions of the world after beans and pea (FAD, 2008). Chickpea inhabits superior place about nutrition because it is the source of highest quantity of protein in human diet especially to those persons who are vegetarian and solves their problem of protein malnutrition. Seeds are also rich in fibre and are good source of iron, phosphorus and folic acid. Chickpea helps in reducing the amount of added nitrogenous fertilizers to the plants due to its ability to enter into a symbiotic nitrogen fixation with the bacterium *Rhizobium leguminosarum* (Neumann et al., 2011). Soil salinity due to chloride, sodium and sulphate accumulation is one of the major constrictions on chickpea (Asfaw and Ghosh, 2000) and affects almost all the aspects of plant growth and development. There are widely ranging effects of salinity on chickpea particularly at germination and early seedling stage (Khan et al., 2013). Chickpea differs from variety to variety for salinity; some are highly tolerant to salinity at germination stage while others very sensitive. Selection of tolerant variety would be a suitable approach to improve the contrary effect of salt at germination stage and has a huge significance for agriculture (Hasegawa et al., 2000). Germination and seedling characteristics are the most feasible conditions used for selecting salt tolerance in crop plants (Jamil and Rha, 2004). The current study was aimed to screen out the response of two chickpea varieties to different salt concentrations.

2. MATERIAL METHODS

A laboratory experiment was conducted in environmental physiology laboratory, Department of Botany, Aligarh Muslim University, Aligarh. Seeds were obtained from IARI Pusa New Delhi. Healthy and equally sized seeds were surface sterilized with the solution of mercuric chloride for one minute. After sterilization they were thoroughly washed with water two to three times in order to remove the adhered mercuric chloride particles. The experiment was performed in Petri plates lined with filter paper and seven randomly selected seeds of two chickpea genotypes were placed in each Petri plate. All the Petri plates were treated with salt that was given in terms of control (deionized water), 25mM, 50mM, 75mM, 100mM and 125mM of sodium chloride (NaCl). Same amount of each concentration was applied to each Petri plate and also same volume of deionized water was given to control petri plates. All the petri plates were covered with lid, were organised with a Completely Randomized Design and kept at room temperature (24°C). The counting of germinated seeds were started after 3 days and seeds were considered germinated when radicals appeared and enough visible to be counted. The period of experiment was 15 days and entire procedure was repeated for extent of 15 days. Germination count was made up to all the seeds were either germinated or dead.

Parameters studied

The following parameters were studied during our experimental setup.

I. Germination percentage

Germination percentage of seeds was calculated using the following formula:

$$\text{Germination percentage} = \frac{\text{Number of seeds germinated}}{\text{Total no of seeds}} \times 100.$$

II. Radical and plumule length

The radical length of seedling was measured from the point of first cotyledonary node to the tip of longest root using centimetre scale and was expressed in centimetres while as plumule length was recorded by measuring the length of stem of an embryo and expressed in centimetres.

III. Seedling biomass

Seedlings were uprooted from the Petri plates on 15th day, weighed using weighing balance in order to get their fresh weight. Dry biomass was determined by placing the seedlings in hot air oven for 48 hours at 50°C until they attain the constant weight.

IV. Seedling vigour index

Seedling vigour index was calculated based on the formula used by Hossein and Kasra (2011):

$$\text{Seedling vigour index} = \text{Germination \%} \times \text{Seedling dry weight}.$$

V. Inhibition percentage

The inhibition (%) was calculated using the formula described by Chung et al., (2001):

$$\text{Inhibition \%} = \left[\frac{\text{Control} - \text{Treatment}}{\text{Control}} \right] \times 100$$

2.1. Statistical analysis

Three biological replicates for all the treatments and control were used for application of statistical tests. Statistical analysis of the data, including data processing and variance analysis (ANOVA), was done using the SPSS software (16.0 version). The means were compared by Duncan test to study the significance at 5% level of probability.

3. RESULTS AND DISCUSSION

Analysis of variance showed that there were significant differences between salinity concentration levels. The results of this study revealed that various concentrations of NaCl had a significant effect on almost all measured parameters for two different varieties of chickpea. And also, analysis of variance showed that the interaction effects were significant for both the investigated traits.

3.1 Effect of salinity on germination of chickpea

Our work was designed to study the impact of salinity on the germination of the two different varieties of chickpea. The BGD72 shows continuous late appearance of the plumule and radicle with respect to the increase in salt concentration, as compared to the control. The difference was most ostensible at 125mM concentration of NaCl where seed germination percentage was reduced by 28.33% as compared to the control (Table 1). For BG5023, there was no significant difference in the germination percentage till 100 mM concentration of NaCl, after which rate significantly reduced by 8.4% as compared to the control (Table 1). In the controls, the

difference in the germination percentages between the two varieties under study is clearly due to the genetic variations. The BGD 72 seeds showed higher sensitivity to the NaCl as compared to the BG 5023. One possible reason among others may be the hard and rough seed coat of the former as compared to the later. The differences in the germination percentages in normal and salinity conditions may be attributed to the adverse effects of NaCl on the availability of amount of water required for the germination of seeds and its negative effects on the water absorbing ability of the seeds. Our results are consistent with the results obtained by (Ashagre H et al., 2013) in chickpea where they observed adverse effects of saline condition on the germination percentage. Similar results were obtained by (Ali M.A.S et al., 2014) where reduction in seed germination of chick pea was observed.

3.2 Effect of salinity on the radical length and plumule length of chickpea seedlings

Our results revealed that different concentrations of sodium chloride viz. (0, 25, 50, 75, 100 and 125) mM had a significant effect on both plumule length and radical length of two different varieties of chickpea. Both of the two varieties of chickpea namely BG 5023 and BGD 73 treated with above salt concentrations showed lower values of plumule and radical length as compared to their control. Figure 1 and 2 shows that the radical length of BG 5023 variety do not show significant decrease till 50 mM of NaCl, while as radical length of BGD 72 significantly decreased at all concentrations of NaCl, however variety BGD 72 was found highly affected as compared to BG 5023 and showed maximum decrease in radical length (48.90%) at 125 mM of NaCl as compared to its control. On the other hand BG 5023 showed comparatively less decrease in radical length (13.17%) at 125 mM of NaCl as compared to its control.

The plumule length of both the varieties also decreased, as concentration of salt increased. Both the variety showed significant decrease in plumule length after 25mM of salt concentration. The variety BG 5023 showed minimum decrease in plumule length (38.15%) at highest treatment of sodium chloride (125 mM) as compared to variety BGD 72 that showed maximum decrease of plumule length (57.82%) at 125 mM concentration of sodium chloride. From our results we can say that among the two varieties of chickpea the variety BG 5023 was tolerant to salinity as compared to BGD 72 as it showed less percent decrease in both plumule and radical length. The reduction in plumule length and radical length with increase concentration of NaCl could be attributed to the inhibitory effect of salinity on the growth and development of the seedling. Similar results were observed by (Zawude S and Shanko D, 2017) in seedlings of different varieties of chickpea.

3.3. Effect of salinity on dry biomass of radical and plumule of two chickpea varieties

As the concentration of sodium chloride increased, the dry weight of the plumule and radical in both cultivars significantly decreased although there was difference between genotypes. In case of BG 5023 the plumule dry weight decreased by 33.78% at 125 mM NaCl as compared to the control while, the same for BGD 72 was 57.29% as compared to its control (Figure 3). Similarly, the radicle dry weight decreased by 25.28% as compared to control at 125mM NaCl in the BG 5023 whereas for same concentration BGD 72 radicle dry weight decreased by 48.90% (Figure 4). Thus we can say that chickpea variety BG 5023 showed minimum reduction in plumule and radical dry biomass as compared to chickpea variety BGD 72 that showed maximum reduction. This observation was in agreement with (Al-Mutawa, 2003) who found negative correlation between shoot and root dry matter, and concentration of NaCl and (Memon et al., 2010) on *Brassica campestris* L. also studied that there are negative effects of salt stress on fresh and dry weight.

3.4. Effect of salinity on seedling vigour of two chickpea varieties

The seedling vigour of both cultivars decreased as the concentration of NaCl increased. Variety BG 5023 showed significant decrease in seedling vigour after 50mM of NaCl while as the variety BGD 72 showed significant decrease in seedling vigour with increased concentration of salt. The reduction in vigour was 39.41% at 125mM of NaCl in comparison to the control in BG 5023 whereas in BGD 72 decrease in vigour for the same concentration was 72.94% (Figure 5). Hence the seedling vigour index of variety BG 5023 was less as compared to variety BGD 72, depicting their contrasting sensitivity to salt stress. The SVI increased when the NaCl concentration decreased, which shows that increased NaCl concentration caused a harmful effect in the seed. The adverse effects may be possibly due to the interference of NaCl in the water uptake, disturbances in cellular metabolism and allocation of the extra energy for maintenance of cellular homeostasis. Our results are in line with the results reported by (Yan-Bing Wu et al., 2010), in wheat and (Khajeh-Hosseini et al., 2003) in soya bean.

3.5. Inhibition percentage of radicle and plumule length due salt stress in two chickpea cultivars

The inhibition percentage of plumule length of both the varieties increased significantly, as concentration of salt increased. The difference being large at 125mM concentration of NaCl where inhibition percentage of plumule length was noted 38.15% as compared to the control in BG5023 variety (Table 2). Similarly, for BGD72 the

maximum reduction was at the 125mM concentration of NaCl at which the inhibition % was 57.82% as compared to the control. The inhibition% of radical length of BG5023 variety was observed significantly increased after 25 mM concentrations of NaCl while in the case of BGD72 variety a significant increase in inhibition of radical length was observed after control treatment. The maximum inhibitory effect of NaCl on the radicle length was observed at 125mM NaCl where inhibition percentage was 21.97% as compared to the control in BGD 72 (Table 2). In contrast, the BG 5023 variety showed less inhibition percentage till 50mM NaCl after which significant increase occurred as compared to control. The increase in inhibition of plumule length and radical length with increase concentration of NaCl could be attributed to the inhibitory effect of salinity on the growth and development of the seedling. Similar results were observed by (Ashagre et al., 2013b) in seedlings of different varieties of chickpea.

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Conflict of interest

There is no conflict of interest in this article.

Contribution of authors

ZM and SB conducted the experimental work, BG analysed the results and drafted the manuscript and Dr SF edited the manuscript.

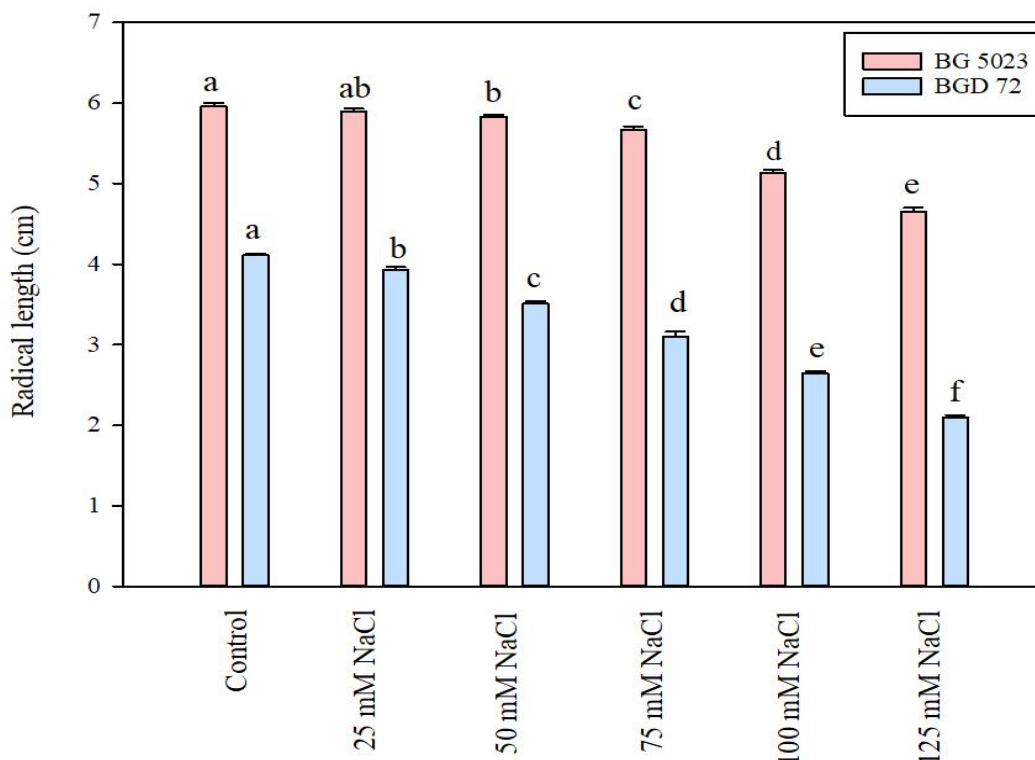
Ethical approval

This article did not involve any experiment or study with human participants or animals.

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Tables: Effect of salinity on germination of chickpea:

Chickpea Cultivar	NaCl Treatment						Mean
	Control	25Mm	50mM	75mM	100mM	125mM	
BGD72	91.66a	85ab	81.67b	76.67bc	70.00cd	63.33d	65.27
BG5023	100a	100a	100a	98.7a	98.7a	91.6b	98.00
Mean	95.83	92.5	90.83	87.68	84.35	77.46	-

Table 1. Shows the germination percentage of the two cultivars (BGD72 and BG5023) of chickpea. Different letters alongside the numbers indicate significant differences at $p < 0.05$, Duncan.

Inhibition percentage of radicle and plumule length due salt stress in two chickpea cultivars:

Salt treatment in (Mm)	Inhibition % in BG5023		Inhibition % in BGD72	
	Plumule length	Radicle length	Plumule length	Radicle length
0(Deionized water)	0.00a	0.00a	0.00a	0.00a
25	1.31	1.00	1.95	4.37
50	4.38	2.18	11.73	14.59
75	8.55	5.03	27.65	24.57
100	21.92	13.75	39.66	35.76
125	38.15	21.97	57.82	48.90

Table 2. Shows the inhibition percentage of radicle and plumule length of the two cultivars of chickpea BG5023 and BGD72 increases in both the cultivars with the increase in the NaCl concentration.

INFORMATION DISSEMINATION BEHAVIOUR OF GROUNDNUT GROWERS IN SALEM DISTRICT

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ABSTRACT

Groundnut is called as the king of oil seeds. Groundnut seeds contain high quality of edible oil, digestible protein and carbohydrates, calcium, iron and vitamins. India is the second largest producer of groundnut in the world. Adoption of improved groundnut technology by groundnut cultivators mainly depends on effective utilization of sources of agricultural information. It is observed that improved groundnut technologies are available but that technologies are not reaching to the groundnut cultivators in adoptable form for better crop yield. This gap may partially to be filled by disseminating of suitable scientific technologies to the other farmers and transmission of farm problems to the higher officials and researchers by the efficient and innovative groundnut cultivation. The study was taken-up in Sankari and Magudanchavadi block of Salem district. A sample size of 120 groundnut cultivating farmers were selected and thirteen socio-economic and psychological variables were selected for this study. The overall information dissemination behaviour of the respondents observed as 43.34 per cent had medium level, 38.33 per cent with high level and 18.33 per cent of the respondents had low level of information dissemination behaviour. Among the various channels in information dissemination process, under individual contact methods, telephone call for farmers (40.00 per cent), neighbouring farm and home (38.33 per cent), under group contact methods, group discussion (40.00 per cent), method demonstration (35.00 per cent) and mass contact methods, distribution of information materials to other farmers (40.83 per cent), farmers day (33.33 per cent) were the important channels utilized by the respondents.

Keywords: Groundnut technology, Individual contact, Group contact and Mass contact.

INTRODUCTION

Groundnut is one of the most important oil and cash crop. Its haulms and leaves serve as a rich source of cattle feed and raw material for preparation of silage. Groundnut shell is used as fuel for manufacturing coarse boards, cork substitutes etc. Groundnut seeds contain high quality of edible oil, digestible protein and carbohydrates. They are rich in phytonutrients and essential nutrients. It is a rich source of calcium, iron and vitamin B complex like thiamine, riboflavin, niacin and vitamin A. India is the second largest producer of groundnut in the world. India is known to produce 6.6 million tones of peanuts on a yearly basis whereas china leads the list with a production of 16.5 million tones yearly. In Tamil Nadu, the area under groundnut is about 3.38 lakh hectares. They produces approximately 894.9 thousand tones of peanuts yearly. They are cultivated as both irrigated crop and rain-fed crop. About, 90.00 per cent of the groundnut area is under Spanish-bunch varieties.

Information management in groundnut is an activity of primarily increase the knowledge level of the groundnut farmers, secondly it reduces or decreases uncertainty for decision-making process and thirdly, it can serve as representation of situation. The information dissemination behaviour has been conceptualised as a composite measure of information to be disseminated through various communication methods like, individual contact methods, group contact methods and mass contact methods by the respondents to fellow farmers. It is observed that improved agricultural technologies are available but that technologies are not reaching to the groundnut cultivators in adoptable form for better crop yield. This gap may partially to be filled by disseminating of suitable scientific technologies to the other farmers and transmission of farm problems to the higher officials and researchers by the efficient and innovative groundnut cultivation.

METHODOLOGY

The study was taken-up in Salem district of Tamil Nadu. Out of the twenty blocks in Salem district, Sankari and Magudanchavadi block was selected based on the maximum area under groundnut cultivation. A sample size of 120 groundnut cultivating farmers were selected by using proportionate random sampling technique. Thirteen socio-economic and psychological variables were selected for this study and They were measured by using appropriate tools and techniques.

In this study information dissemination behaviours referred to all the activities performed by the groundnut growers for disseminating of scientific technologies to farmers and transmission of farm problems to higher officials or researchers. Information dissemination behaviour was measured by the regularity in the extent of

use of individual, group and mass contact methods. The following scoring procedure adopted by Satheeskumar (2013) was used in this study. An inventory on agricultural information management behaviour, a dependent variable was developed and measured on a response continuum as 'Regularly', 'Frequently', 'Occasionally' and 'Never' with scoring 4, 3, 2 and 1 respectively. The score obtained on various information dissemination channels were added to get total score of the respondents on this variable. The data were collected by using well structured interview schedule, containing appropriate questions for bringing the required data. Percentage analysis and Cumulative frequency method were used for the analysis and interpretation of the data.

FINDINGS AND DISCUSSION

Overall Information dissemination Behaviour of the respondents are presented in table-1.

Table-1: Overall Information dissemination Behaviour of the respondents. (n=120)

S. No.	Category	Information dissemination behaviour	
		No	Per cent
1	Low	22	18.33
2	Medium	52	43.34
3	High	46	38.33
Total		120	100.00

It could be observed from the Table-1, with respect to information dissemination behaviour, more than forty per cent of the respondents (43.34 per cent) were found under medium level of information dissemination behaviour followed by high (38.33 per cent) and low (18.33 per cent) levels categories respectively.

Information dissemination behaviour

Information dissemination behaviour of the respondents analyzed under three category based on the nature of channels available. Namely individual contact, group contact and mass contact channels used by farmers for the dissemination of information with regard to groundnut cultivation. Hence, the respondents were enquired about their information dissemination behaviour and the results are presented in Table-2

Table-2: Information dissemination through various contact methods.(n=120)

S. No.	Source	Regularity of contact							
		Regularly		Occasionally		Rarely		Never	
		No	Per cent	No	Per cent	No	Per cent	No	Per cent
	Individual contactmethods								
1.	Farm and home visits	46	38.33	37	30.83	20	16.67	17	14.17
2.	Telephone calls	48	40.00	39	32.50	21	17.50	12	10.00
3.	Result demonstration	10	8.33	34	28.33	37	30.84	39	32.50
4.	Personal letter	14	11.67	29	24.17	35	29.16	42	35.00
5.	Counselling	40	33.34	32	26.66	28	23.34	20	16.66
	Group contactmethods								
1.	Participating in Method demonstration	42	35.00	32	26.67	25	20.83	21	17.50
2.	Group discussions	48	40.00	34	28.34	28	23.33	10	8.33
3.	Group meeting	38	31.67	31	25.83	29	24.17	22	18.33
4.	Farmers training programmes	18	15.00	27	22.50	33	27.50	42	35.00
5.	Field trips/study tours	10	8.33	18	15.00	40	33.33	52	43.34

III	Mass contact methods								
1.	Distribution of information materials to other farmers.	49	40.83	38	31.67	20	16.67	13	10.83
2.	Farmers day	40	33.33	32	26.67	25	20.83	23	19.17
3.	Radio programmes	9	7.50	13	10.83	39	32.50	59	49.17
4	TV programmes	8	6.67	12	10.00	42	35.00	58	48.33
5.	Activities of voluntary organisation	35	29.17	32	26.67	29	24.16	24	20.00
6.	Agricultural exhibitions	20	16.67	26	21.67	34	28.33	40	33.33
7.	Writing in news papers	7	5.83	12	10.00	42	35.00	59	49.17

Individual contact methods

With regard to individual contact methods, the data in Table-2, shows that majority of the respondents regularly made a telephone call for farmers (40.00 per cent) followed by visited neighbouring farm and home (38.33 per cent) and counseling (33.34 per cent) to disseminate the information on groundnut technologies. Telephone calls, visited neighbouring farm and home and counseling were the three individual contact methods regularly followed by the respondents. Because most of the farmers having cell phones and visit to nearby farm and home is usual day to day activities in rural areas. Counseling the neighbours, relatives and friends with regarding to cultivation of groundnut also a casual activity carried out by any farmers in village settings. Whereas, more than one-third of the respondents never utilised personal letter (35.00 per cent) and result demonstration (32.50 per cent). This finding is in accordance with findings of Sridharan (2011).

Group contact methods

With respect to group contact method the data in Table-2, the regularly utilised sources were group discussion (40.00 per cent) followed by participating in method demonstration (35.00 per cent) and group meeting (31.67 per cent). Groundnut cultivating farmers had excellent contact with state department of agriculture through meetings, discussion and participating in method demonstration.. This might be due to the possible reason for majority of them disseminate the groundnut technologies through group contact. Whereas, 43.34 per cent and 35.00 per cent of the respondents never used the participating in field trips/study and farmers training programme respectively. This finding is in accordance with findings of Kasidurai (2017).

Mass contact methods

In case of mass contact methods, it is evident from the Table-2, that distribution of information materials to other farmers (40.83 per cent), farmers day (33.33 per cent) and activities of voluntary organisation (29.17 per cent) were utilised regularly. Farmers might have thought that these mass contact methods act as an effective platform which could facilitate them to share the information with others. It is interestingly to note that most of the respondents never disseminate the information through radio programmes (49.17 per cent), writing in news papers (49.17 per cent), TV programmes (48.33 per cent) and agricultural exhibitions (33.33 per cent). The reason for less participation in radio, TV programmes and writing in newspapers might be due to shy feeling and lack of interest in going public and paucity of time to go out. This finding is in line with the findings of Satheehkumar (2013).

SUMMARY AND CONCLUSIONS

Adoption of improved groundnut cultivation practices varies farmer to farmer depending upon their situation, diffusion of information and use of communication media to transfer of information to other farmers. Therefore, the present study has been undertaken to know various sources utilized by groundnut growers to disseminate agricultural information. With this in view the present investigation was carried out and the salient findings are presented below.

The overall information dissemination behaviour of the respondents show that, more than forty per cent of the respondents (43.34 per cent) were found under medium level of information dissemination behaviour followed by high (38.33 per cent) and low (18.33 per cent) level categories respectively.

The focusing results of Information dissemination behaviour of the groundnut cultivators, under individual contact methods, majority of the respondents regularly made a telephone call for farmers (40.00 per cent) and followed by visited neighbouring farm and home (38.33 per cent) to disseminate the information on groundnut technologies. In the case of group contact methods, majority of the respondents with respect to group contact methods, the regularly utilised sources were group discussion (40.00 per cent) and followed by participating in method demonstration (35.00 per cent). Under mass contact methods, majority of the respondents distribution of information materials to other farmers (40.83 per cent) and farmers day (33.33 per cent) were utilised regularly

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KNOWLEDGE LEVEL OF INDIGENOUS AGRICULTURAL PRACTICES IN PADDY AMONG TRIBAL FARMERS ON LOWER SUBANSIRI DISTRICT OF ARUNACHAL PRADESH

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ABSTRACT

The paper deals with the knowledge of tribal farmers on traditional farming systems practiced by the indigenous communities. The study was conducted in Lower Subansiri District of Arunachal Pradesh in order to document the knowledge of tribal farmers on Indigenous Agricultural Practices. The information was collected using structural schedule, semi-structured interview, photo documentation, field observation and participant observation from the study area. This thesis argues that we need to identify the indigenous knowledge which has scientific rationality so that it can be incorporated in agriculture and allied fields. It also deals with the constraints of suggesting this knowledge in the study area and the strategy for using indigenous knowledge in agriculture and allied fields to get food security, livelihood and ecological balance on a sustainable mode. A total of 120 respondents were selected for the study. Finally through this study it can be revealed that identification and documentation will lead to food security with sustainability if the proper extension intervention for indigenous knowledge will be carried out in the study area.

Keywords: Indigenous agricultural practices, Assessing Knowledge Level, Paddy Cultivation, Tribal Society.

INTRODUCTION

Indigenous knowledge is a set of perceptions, information and behaviour that guide local community members to use the land and natural resources. Indigenous knowledge is created and sustained by local community members as a means to meet their needs for food, shelter, health, spiritual and savings. Indigenous knowledge is usually adapted and specific to local ecological conditions and to community members' social and cultural beliefs. This knowledge can be simple or complex. It is not static but evolves in response to changing ecological, economic and socio-political circumstances based on the creativity and innovation of community members and as a result of the influence of other cultures and outside technologies.

Through the long path from primitive agriculture, tribal farmer in particular have developed a number of farming techniques through their own age old experiments by trial and error in an attempt to overcome numerous problems faced during the farming operations. This knowledge is based on many generations of insight gained through close interaction within the natural and physical micro-environments.

Tribal farmer's knowledge has been the mainstay of the indigenous agricultural practices. Agriculture practices managed by farmers in tribal area embody practices that are logic and different from those contained in agriculture science imparted in institutions of formal education. It is in the between spaces, the interstices of sectors, the invisible ecological flows between sectors that tribal farmers work and their knowledge in agriculture is uniquely found and it is through these linkages that ecological stability and productivity under resource scare conditions are maintained.

Agriculture is the main occupation of the people of Arunachal Pradesh. About of the total population of state depend on agriculture for their livelihood. The state offer scope for cultivation of a wide variety of agricultural and horticultural crops because of highly diversified topography, altitude and climate condition. It is one of the most potential zones for eco-friendly agriculture. In the field of agriculture, Arunachal Pradesh is one of the states in India where indigenous knowledge is extensively used for the cultivation of crops. Lower Subansiri is one of the Districts of Arunachal Pradesh where immense use of indigenous knowledge is widely seen in agricultural and allied activities. Due to rapid urbanization traditional knowledge may be lost. Keeping this in view, an exploratory study was taken in the topic of 'A Study on adoption of indigenous agricultural practices among the tribal farmers of Lower Subansiri District in Arunachal Pradesh has been made to find out the knowledge level of indigenous agricultural practices.

METHODOLOGY

Lower Subansiri District of Arunachal Pradesh was purposively selected for the study considering the availability of tribal farmers engaged in indigenous agricultural practices. Among the two block (Ziro-I and Ziro-II), one block namely Ziro-I were selected based on the maximum numbers of tribal farmers engaged in indigenous agricultural practices and researcher's familiarity with the dialect and culture of people. From respective block, four villages were selected based on the maximum population. Thus a total number of four

village's viz., Hong-I, Hija-I, Old ziro-II and Mudangtage were selected for the study. Forty indigenous agricultural practices under various agricultural crops were collected from the tribal farmers belonging to the Lower Subansiri for determining the rationality.

Rationality of the collected indigenous practices was determined based on judge's opinion. Accordingly forty indigenous agricultural practices, twenty seven practices were found to be rational and thirteen indigenous practices were found to be irrational. Data were collected from 120 tribal farmers identified based on proportionate random sampling method. The responses on assessing the knowledge level of twenty seven rational indigenous agricultural practices were sought under two categories viz., correct and incorrect. Simple percentage was used for interpretation of results. A well-structured interview schedule was used for collection of data from the respondents. The frequency of the farmer's knowledge each of practices was calculated and expressed in percentage.

FINDINGS AND DISCUSSION

Extent of knowledge on indigenous agricultural practices

The findings on the extent of knowledge on indigenous agricultural practices were presented and discussed in this section.

Overall knowledge of the respondents on indigenous agricultural practices

The findings on overall knowledge of respondents on indigenous agricultural practices are presented in Table 1.

Table-1: Distribution of respondents according to their overall knowledge on indigenous agricultural practices (n=120)

Sl. No.	Category	Number	Per cent
1	Low	04	03.33
2	Medium	14	11.67
3	High	102	85.00
	Total	120	100.00

It is observed from the data in Table 18, that majority of the respondents (85.00 per cent) were found to have high level of knowledge followed by medium (11.67 per cent) and low (03.33 per cent). The level of knowledge on indigenous agriculture practices. Knowledge being a pillar to every understanding and majority of the respondents might have possessed high level of knowledge passed on from their ancestors, this findings is in line with the findings of Ram Kesha and Gordhan Singh Bhati (2015).

Practice wise knowledge of the respondents on recommended indigenous agricultural practices

In order to have an in-depth idea to assess the knowledge level of indigenous practices in Paddy was analysed and the results are presented in Table 2.

Assessing the knowledge level of various indigenous agricultural practices in paddy

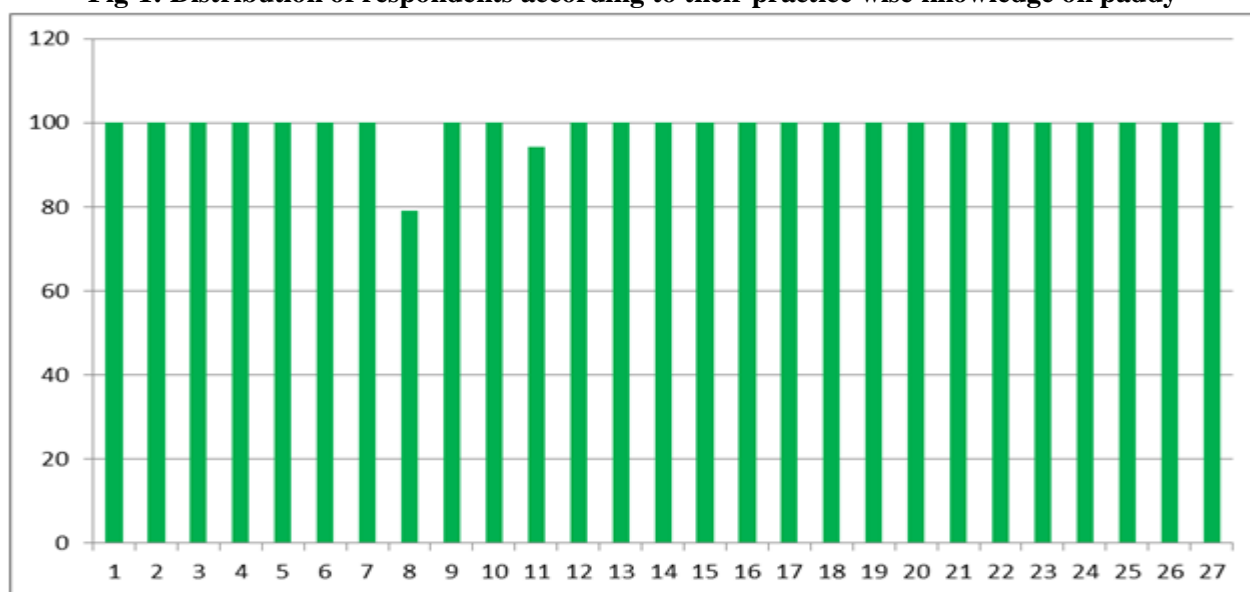
The findings of knowledge level of various indigenous agricultural practices in paddy cultivation are presented in Table 2 and Fig.1.

Table-2: Assessing the knowledge level of various indigenous agricultural practices in paddy (n= 120)

Sl. No.	Paddy (Andi)	Number	Per cent
Indigenous agricultural practices			
1.	Selection of indigenous variety	120	100.00
2.	Storing of paddy seeds (pyali) in pot made up of gourd (pinta)	120	100.00
3.	Broadcasting of paddy seeds (pyali) directly in nursery	120	100.00
4.	Weeding by using tools called keeley and palii made up of bamboo	120	100.00
5.	Raising nursery in elevated place in the field	120	100.00
6.	Summer ploughing	120	100.00
7.	Using wooden tray used for carrying weeds (sampya)	120	100.00
8.	Planting 2 or 3 seedlings per hill	95	79.16
9.	Transplanting of seedlings in flooded field	120	100.00
10.	In nursery area no other crops grown	120	100.00
11.	Leveling the surface of field by using legs	113	94.16
12.	Incorporation of crop residue in the soil to improve soil fertility	120	100.00
13.	Sieving paddy seeds before sowing to control weeds	120	100.00

14.	Incorporating weeds before flowering stage in the soil	120	100.00
15.	Keeping bamboo traps (gwrii) at the entrance of the rat hole	120	100.00
16.	Keeping puppet dolls to scare away birds	120	100.00
17.	Keeping sound producing device made up of bamboo (poper)	120	100.00
18.	Construction of irrigation channel in the middle of field (Hetey)	120	100.00
19.	Soil conservation by indigenous soil bunds (Ajiagiir)	120	100.00
20.	Constructing water outlet made up of bamboo or tree trunk (siicho) in field	120	100.00
21.	Threshing by hitting the paddy bundles with wooden blocks (Entiipatta)	120	100.00
22.	Sun drying of the harvested and threshed paddy for one or two days	120	100.00
23.	Winnowed by taking the grains in a winnower called 'yapyo'	120	100.00
24.	Dehusking of paddy using tools called ' Yaper' and 'hunyi'	120	100.00
26.	Separation of husk by the use of yapyo	120	100.00
27.	Storing harvested grains in store room called "Nesu"	120	100.00

Fig-1: Distribution of respondents according to their practice wise knowledge on paddy



1. Selection of indigenous variety
2. Storing of paddy seeds in pot made up of gourd
3. Broadcasting of paddy seed directly in nursery
4. Weeding by using tools called keeley made up of bamboo
5. Raising nursery in the elevated place in the field
6. Summer ploughing
7. Using wooden tray used for carrying weeds (sampya)
8. Planting 2 or 3 seedlings per hill
9. Transplanting of seedling in flooded field
10. In nursery area no other crops are grown
11. Leveling the surface of field by using legs
12. Incorporation of crop residue in the soil to improve soil fertility
13. Sieving paddy seeds before sowing to control weeds
14. Incorporating weeds before flowering stage in the soil
15. Keeping bamboo traps at the entrance of the rat hole
16. Keeping puppet dolls to scare away birds

17. Keeping sound producing device made up of bamboo
18. Construction of irrigation channel in the middle of the field
19. Soil conservation by indigenous soil bunds
20. Constructing water outlet made up of bamboo or wooden trunks
21. Threshing by hitting the paddy with wooden blocks
22. Sun drying of the harvested and threshed one or two days
23. Winnowed by taking grains in a winnower called yapyo
24. Dehusking of paddy using tools yaper and hunyi
25. Separation of husk by using yapyo
26. Storing harvested grains in store room called Nesu.

It is observed from the Table 1 that out of twenty seven indigenous agricultural practices only two practices have less than cent percent that is 79.16 per cent in planting of one seedling per hill and 94.16 per cent in levelling the surface of field using legs where rest of the practices have cent per cent knowledge among the respondents. This may be due to most of the respondents of the study area are belong to the old age group and their experience of indigenous farming method.

The practices like selection of indigenous variety, storing of paddy seeds in pot made up of gourd, broadcasting of paddy seeds directly in the nursery, weeding by using tools called “keeley” and “palii” made up of bamboo, raising nursery in elevated place in the field, summer ploughing, using wooden tray for carrying weeds, transplanting the seedling in the flooded field, in nursery area no other crops are grown, levelling the surface of the field by using legs, incorporation of crop residue in the soil to improve soil fertility, sieving rice seeds before sowing to control weeds, incorporation weeds before flowering stage in the soil, keeping bamboo trap at the entrance of the rat hole, keeping puppet dolls to scare away birds, keeping sound producing device made up of bamboo, construction of irrigation channel in the middle of the field, soil conservation by indigenous soil bunds, constructing water outlet made up of bamboo or tree trunk, threshing by hitting the paddy bundles with wooden blocks, sun drying of the harvested and threshed paddy for one or two days, winnowed by taking the grains in a winnower called “yapyo”, dehusking of paddy using tools called “yaper” and “hunyi”, separation of husk by the use of “yapyo” and storing harvested grains in store room called “nesu”. Reports about these practices were made else were (Sangma, 2017).

CONCLUSION

From the present study it can be concluded that tribals farmers have greater responsibility in agriculture, which drive them interact more with the surroundings. As observed adoption of indigenous agricultural practices results with eco-friendly environment and is necessary to make promotional efforts for the preservation and spread of these practices.

The findings of the study revealed that majority of the tribal farmers had high level of knowledge on indigenous agricultural practices in paddy cultivation with large extent in the study area. This shows the conviction of tribal farmers had high level knowledge in the indigenous agricultural practices. Therefore extension workers and research associates and policy makers should identify and include them in the technology transmission process for the effectiveness of cultivation practices in paddy technology.

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PERCEPTION OF RESEACHERS ABOUT EXTENSION CLIENTELE LINKAGE ACTIVITIES

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ABSTRACT

The past experience of the extension system revealed that the communication of agricultural information was inefficient and ineffective, leading to an increased gap between innovation in the lab and the adoption in the fields by the farmers. Therefore, it is felt vital to study indepth the concept of information management behaviour of the extension personnel and farmers engaged in development and transfer of technologies. So far no systematic study has been conducted in this area. This study was undertaken to assess the information management behavior and extent of linkage between extension and clientele systems. The study was conducted in cuddalore district of Tamil Nadu with a sample size of 60 extension personnel and 60 sugarcane farmers. Majority of the extensionists were found under high category of information management behaviour. Assistant director of agriculture, superiors and farm and home visits were the regularly contacted channels for information acquisition. Majority of farmers belonged to high category of information management behaviour. Cane development officer, neighbours/fellow farmers and viewing telecasts were found to be their regularly used channels for information acquisition.

Keywords: Information system. Extension personnel, sugarcane Clients.

INTRODUCTION

Sugarcane (*Saccharumofficinarum* L.) belongs to the Andropogoneae tribe of poaceae (Grass family), which includes sorghum (*Sorghum bicolor* L.) and maize (*Zea mays*). *Saccharum* is characterized by high chromosome number and high level of polyploidy, which has been largely responsible for the genetic complexity and taxonomic difficulties. Modern cultivated sugarcane are mostly hybrids of different species of the geneussaccharum which is placed in sub-tribe of saccharinae and sub family of Panicoidae.

The earliest references of sugarcane are from India and China, several centuries before the Christian era. Kishore (1986) Detailed sugarcane agriculture was described in Tamil literature “Agananouru” and Purananouru”. The flowering habits, agronomic traits, harvest and transport and extraction of sugar were well stated. It is also found in the sacred book, “Atharva-Veda”, (3000 B.C), which was composed during pre-christian era. Sugar was also used extensively in Sidda and Ayurvedic medicines. Tamil literature (Silapathigaram, 120 B.C) illustrated the sugar trade between India, Thailand, South-East Asia, Indonesia, Philippines, Egypt and Middle East.

Sugar from cane accounts for approximately 70.00 per cent of the world’s sweetener and is an economically important cash crop in the tropical and subtropical regions of many countries. In India, sugar industry is the second largest industry. Sugarcane is cultivated in 4.4 million hectares in India and in Tamil Nadu, it occupies 0.33 million hectares. India produces 300 million tonnes of sugarcane and 18 million tonnes of sugar in 2001-02. Tamil Nadu produced 36 million tonnes of sugarcane and 1.64 million tonnes of sugar during 2001-02. The average cane yield in India is 68.2 tonnes per hectare in India and 111.4 tonnes per hectare in Tamil Nadu (Rolling, 1988)..

India has a long history of cane growing. The growth of Indian sugar industry has been fairly steady and rapid since 1930. In the early years, sugarcane varieties did not possess good milling quality, yields per unit area was low and sucrose content of juice was poor. This was overcome by researches carried out by Sugarcane Breeding Institutes (SBI) and Plant breeding scientists around the world.

RESEARCH METHODOLOGY

It was decided to have a sample size of sixty sugarcane registered farmers as that of researchers and extensionists based on random sampling procedure. Among sixty farmers, thirty registered farmers of M.R.K Co-operative sugar factory were selected from the villages situated nearer to the sugarcane research station, Cuddalore. Accordingly, two villages viz., Srimushnam and Solatharam of Keerpalayam block which had the maximum area under sugarcane cultivation as well as with highest number of registered farmers of M.R.K Co-operative sugar factory were selected (Arunmozhi Devi, 2004). Accordingly, fifteen sugarcane farmers were selected at random from each of the villages. The same procedure was followed for the selection of registered sugarcane farmers of EID Parry (India) Ltd, Nellikuppam. Fifteen registered sugarcane farmers were selected from each of the selected villages viz., Valayamadevi and Annagramam of Annagramam block.

PERCEPTION TOWARDS LINKAGE ACTIVITIES

Perception towards linkage was operationalised as the degree of importance of linkage activities as perceived by the respondents. The respondents were asked to give their opinion on the linkage activities as perceived by them on a four-point continuum, Very Important (VI), Important (I), Less Important (LI) and Not Important (NI) and scores of 4, 3, 2 and 1 were given respectively. The respondents were categorized based on the individual perception scores on linkage activities into 'low', 'medium' and 'high'. The cumulative frequency method was used for categorization. Perception about research- extension and research - clientele linkages as perceived by researchers.

FINDINGS AND DISCUSSION**PERCEPTION OF RESPONDENTS ABOUT LINKAGE ACTIVITIES****Researchers' perception about research – extension linkage**

Results on the distribution of respondents according to their perception about research-extension linkage activities are presented in Table1.

Table-1: Researchers' perception about research – extension linkage activities. (n=60)

Sl. No.	Linkage activities	VI		I		LI		NI	
		No.	%	No.	%	No.	%	No.	%
A. Technology Development									
1.	Involving extension personnel in identifying research problems	51	85.00	6	10.00	3	5.00	-	-
2.	Involvement in developing technologies	30	50.00	18	30.00	9	15.00	3	5.00
3.	Findings solutions to research problems	30	50.00	17	28.33	11	18.33	2	3.34
4.	Conducting field trails	54	90.00	4	6.67	2	3.34	-	-
5.	Evaluation of technologies	17	28.33	41	68.33	2	3.34	-	-
6.	To get feedback from clients	29	48.33	31	51.67	-	-	-	-
B. Technology dissemination									
1.	Involving extension personal monthly workshops	6	10.00	30	50.00	18	30.00	6	10.00
2.	Involvement in training programmes	15	25.00	45	75.00	-	-	-	-
3.	Involvement in awareness campaigns for introduction of new technologies	23	38.33	37	61.67	-	-	-	-
4.	Involvement in field demonstration	15	25.00	39	65.00	4	6.67	2	3.34
5.	Involvement in exhibition	17	28.33	41	68.33	2	3.34	-	-
6.	Involvement in sugarcane production technology	18	30.00	42	70.00	-	-	-	-

VI – Very Important, I- Important, LI- Least Important and NI – Not Important

Among the technology development activities, majority of the researchers perceived to involve the extension personnel in conducting field trials (90.00 per cent) and in identifying research problems (85.00 per cent) as very important linkage activities. Most of the respondents (68.33 per cent) perceived the involvement of extension personnel in the evaluation of technologies as important. Equal percentage of respondents (50.00 per cent) perceived involvement of extension personnel in developing technologies and in finding solutions to research problems and in getting feedback from clients as very important linkage activities This finding is in line with the findings of Prasad,(1996).

Among the technology dissemination activities, majority of the respondents perceived the involvement of the extension personnel in training programmes (75.00 per cent) as important This finding is in line with the findings of Sampath(1994).

Majority of the researchers perceived involvement of extension personnel in exhibitions (68.33 per cent) as important. Involvement of extension workers in field demonstrations (65.00 per cent) and involvement in awareness campaigns for introduction of new technologies was perceived as important by most of the respondents (61.67 per cent).

The possible reason could be that the researchers perceived the technology development activities as important as the main objective of their research is to evolve technologies. Hence, their perception of involvement of extension workers in technology development was comparatively higher than their involvement in technology dissemination activities. This finding is in line with the findings of Arunmozhi Devi (2004).

Researchers' perception on research – extension and research – clientele linkage

The results on the overall perception of researchers on research – extension and research – clientele linkage activities are presented in Table 2.

Table-2: Researchers' perception about research – extension.

Category	R-E	
	No.	%
Low	9	15.00
Medium	31	51.67
High	20	33.33

R-E : Research – extension; R-C : Research – clientele

It could be seen from the above table that medium level of perception was expressed by 51.67 per cent of the researchers in case of research – extension linkage. The obtained result of 51.67 per cent R-E linkage under medium level may be due to the importance of R-E linkage activities perceived by the researchers based on the nature of their work, personal interest and frequency of contact with the extension workers. This finding is line with the findings of Arunmozhi Devi (2004).

Researchers' perception about research – clientele linkage

Results on distribution of researchers according to their perception on research – clientele linkage activities are presented in Table 33.

Table-2: Researchers' perception about research – clientele linkage activities (n=60)

Sl. No.	Linkage activities	VI		I		LI		NI	
		No.	%	No.	%	No.	%	No.	%
A. Technology Development									
1.	Identifying field problems	24	40.00	30	50.00	6	10.00	-	-
2.	Finding solution to field problems	7	11.67	26	43.33	15	25.00	12	20.00
3.	Conducting field trials	27	45.00	24	40.00	6	10.00	3	5.00
4.	Involvement in technology refinement	21	35.00	27	45.00	9	15.00	3	5.00
B. Technology dissemination / utilization									
1.	Involvement in transfer of new technologies	23	38.33	33	55.00	4	6.67	-	-
2.	Involvement in training programmes	18	30.00	30	50.00	12	20.00	-	-
3.	Involvement in farmers' days / field days	11	18.33	42	70.00	7	11.67	-	-
4.	Involvement in exhibition	15	25.00	27	45.00	9	15.00	9	15.00
5.	Interaction during village visits	12	20.00	33	55.00	6	10.00	9	15.00
6.	Interaction during institution visits	13	21.67	27	45.00	12	20.00	8	14.33
7.	Involvement in farm broadcast	9	15.00	27	45.00	18	29.00	6	11.00
8.	Involvement in farm telecast	12	20.00	30	50.00	12	20.00	3	10.00
9.	Involvement in writing farm articles	15	25.00	33	55.00	9	15.00	3	5.00
10.	Answering mail queries / phone calls	6	10.00	39	65.00	9	15.00	6	10.00

Among the technology development activities, 45.00 per cent of the researchers perceived that involving farmers in conducting field trails and in finding solutions to field problems (40.00 per cent) as very important.

Among the technology dissemination activities, majority of the respondents perceived involvement of farmers in farmers days / field days (70.00 per cent), in writing mail queries / phone calls (65.00 per cent) for technical advice as important. An equal percentage of researchers (55.00 per cent under each) perceived involvement of farmers transfer of new technologies, in interaction during village visits and in writing for farm articles as important. Half of the researchers (50.00 per cent) perceived involvement of farmers in training programmes as important.

It could be seen from the above results that the researchers' perception was found to be more in technology dissemination than technology development activities. The possible reason could be that the farmers involvement is very vital in the dissemination activities as they are the end-users of the technologies. Hence, the researchers' perception of involvement of farmers would have been more in technology dissemination activities.

SUMMARY AND CONCLUSION

Medium level of perception was expressed by 51.67 per cent of the researchers in case of research – extension linkage and 40.00 per cent in case of research - clientele linkage activities. Moderate level of linkage was found between research – extension, while the linkage between research - clientele was found to be weak. Hence, efforts should be taken to strengthen the linkage between research-extension and research – clientele systems by way of policy decisions.

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STUDIES ON EFFECT OF PGPR CONSORTIUM ON FRUIT QUALITY OF TOMATO VARIETY PKM-1

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ABSTRACT

Beneficial free living soil bacteria occurring in the plant rhizosphere are usually referred as plant growth promoting bacteria and abbreviated as PGPR. PGPR is a mixture of beneficial microorganisms which can increase the crop yield, plant growth and also protect against plant pathogen. Pot culture experiment was conducted to evaluate the performance of PGPR inoculation with graded level of N.P and K on fruit quality of tomato variety PKM-1. The study revealed that the treatment receiving 50% NPK with PGPR consortium showed better performance in term of Total soluble solid content, titrable acidity \times ascorbic acid content followed by (100%NPK + PGPR).

Keywords: PGPR, Total soluble solid content, titrable acidity, ascorbic acid content.

INTRODUCTION

Tomato (*Lycopersicon esculantum* L.) is one of the most popular garden vegetables in the world and known as protective food because of its special nutritive value. The total global area under tomato cultivation is 46.16 lakh hectares and the global production is approximately 1279-93 lakhs tones. The area and production of tomato in our country is about 5.72 lakh hectares and 102.60 lakh tones respectively. Global agriculture largely depends on fertilizer for the production of vegetables. Besides low input efficiency of N and P fertilizer, greenhouse gases are some economic and environmental factors that must be considering the use of inorganic fertilizer. Bacteria that colonize the rhizosphere and plant roots and enhance plant growth by any one mechanism are referred as plant growth promoting Rhizobacteria (PGPR). PGPR is a mixture of beneficial microorganisms which can increase the crop yield, plant growth and also protect against plant pathogen (Seleim *et al.*, 2011). PGPR help in solubilization of mineral, phosphates and other nutrients, enhance resistance to stress, stabilize soil aggregates and improve soil structure and organic matter content (Al – Taweil *et al.*, 2009).

Utilization of PGPR in order to increase the productivity may be a viable alternative to organic fertilizers which also helps in reducing the pollution and preserving the environment in the spirit of an ecological agriculture (Stefan *et al.*, 2008). Thus rhizosphere bacteria can be a promising source for plant growth promoting agent in agriculture (Chaiarn *et al.*, 2005) and are commonly used as inoculants for improving the growth and yield of agricultural crops.

Biological nitrogen fixation contributes 180×10^6 metric tons/year globally, out of which symbiotic associations' produces 80% and the rest comes from free-living or associative systems. The ability to reduce and derive such appreciable amounts of nitrogen from the atmospheric reservoir and enrich the soil is confined to bacteria and Archaea. These include symbiotic nitrogen fixing forms, viz., *Rhizobium*, the obligate symbionts in leguminous plants and *Frankia* in non-leguminous trees, and non-symbiotic (free-living, associative or endophytic) N_2 -fixing forms such as cyanobacteria, *Azospirillum*, *Azotobacter*, *Acetobacter diazotrophicus*, *Azoarcus* etc.

MATERIALS AND METHODS

ENUMERATION OF PLANT GROWTH PROMOTING RHIZOBACTERIA (PGPR) FROM THE RHIZOSPHERE SOILS OF TOMATO

The rhizosphere soil samples of tomato were used for further isolation and enumeration of *Azospirillum*, *Azotobacter*, *Pseudomonas* and *Bacillus* (phosphate solubilizing bacteria).

Enumeration of *Azospirillum*

Ten fold serial dilutions of each soil sample, ranging from 10^{-1} to 10^{-4} were made in mineral salts solution of Day and Dobereiner (1976). One ml of each dilution was inoculated in a set of five tubes containing 9 ml of nitrogen free semisolid malate medium (Day and Dobereiner, 1976). At least three consecutive dilutions were inoculated and tubes were incubated for three days at $30 \pm 2^\circ\text{C}$. Tubes showing sub-surface, thin pellicle growth were identified as positive tubes for *Azospirillum*. The MPN counts of *Azospirillum* were calculated on the basis of positive tubes by referring the MPN table (Cochran, 1950).

Enumeration of *Azotobacter*

Azotobacter population was enumerated from rhizosphere soil samples of tomato plant by serial dilution and plating technique. The soil samples were serially diluted up to 10^{-4} dilution. One ml of aliquots of last dilution was plated in Waksman's base medium No. 77. The plates were incubated at 30°C for 3-4 days, plates showing soft milky, mucoid colonies would be seen and later brown to black pigment. The population was expressed as cfu g^{-1} of oven dry soil (Allen, 1953).

Enumeration of *Pseudomonas*

Pseudomonas population was enumerated from rhizosphere soil sample of tomato plant by serial dilution and plating technique. The soil samples were serially diluted up to 10^{-4} dilution, one ml aliquots of last dilution were plated in King's B agar medium (King's *et al.*, 1954). Colonies were obtained after 48 h of incubation at room temperature and expressed as cfu g^{-1} of oven dry soil.

Enumeration of *Bacillus* (phosphate solubilizing bacteria)

Bacillus population (Phosphate solubilizing bacteria) was enumerated from the rhizosphere soils of tomato plant by serial dilution and plating technique (Sperber, 1958). The soil samples were serially diluted up to 10^{-4} dilution. One ml of aliquots of last dilution were plated in using Sperber's hydroxy apatite medium. The plates were incubated up to two weeks at $28 \pm 2^{\circ}\text{C}$. The bacterial colonies showing clear zone were enumerated and expressed as cfu g^{-1} of oven dry soil. Based on the results of the performance of the plant growth promoting traits, three different PGPR isolates viz., *Azospirillum lipoferum* TMAzs-13, *Pseudomonas fluorescens* TMPs-19 and *Bacillus megaterium* TMB-3 were selected for further studies.

Preparation of pots and seed inoculation

The seeds were mixed with carrier based rhizobacterial inoculants as dual and consortium of organisms separately having a cell load of 1×10^9 cfu ml^{-1} and shade dried for 30 min. After shade drying, the seeds were sown at 25 seeds per pot and finally five seedling were maintained. A control pot without inoculation was also maintained. The experiment was conducted in completely randomized block (CRD) design with three replications. The treatments are as follows:

T ₀	-	A b s o l u t e c o n t r o l				
T ₁	-	5	0	%	N	& P
T ₂	-	7	5	%	N	& P
T ₃	-	1	0	0 %	N	& P
T ₄	-	50% N & P + <i>A. lipoferum</i> TMAzs-13 + <i>P. fluorescens</i> TMPs-19				
T ₅	-	50% N & P + <i>A. lipoferum</i> TMAzs-13 + <i>B. megaterium</i> TMB-3				
T ₆	-	50% N & P + <i>A. lipoferum</i> TMAzs-13 + <i>P. fluorescens</i> TMPs-19 + <i>B. megaterium</i> TMB-3				

RESULT**EFFECT OF PGPR INOCULATION ON THE FRUIT QUALITY OF TOMATO VARIETY PKM-1**

The total soluble solid content, titrable acidity and ascorbic acid content of tomato varied from 4.80 to 6.15 per cent, 0.46 to 0.84 per cent and 12.80 to 23.25 mg / 100 g^{-1} fresh fruit weight in the various inoculated treatments (Table 1). Among the seven treatments tested, maximum total soluble solid content, titrable acidity and ascorbic acid content was recorded in the treatment T₆ (50% N & P + *A. lipoferum* TMAzs-13 + *P. fluorescens* TMPs-19 + *B. megaterium* TMB-3) (6.15 per cent), (0.84 per cent) and (23.25 mg / 100 g^{-1} fresh fruit weight) and the treatment T₆ was on par with T₃ (100% N & P) (6.00 per cent), (0.81 per cent) and (21.15 mg / 100 g^{-1} fresh fruit weight). Minimum total soluble solid content, titrable acidity and ascorbic acid content was recorded in the treatment T₀ (Control) (4.80 per cent), (0.46 per cent) and (12.80 mg / 100 g^{-1} fresh fruit weight). The maximum total soluble solid content, titrable acidity and ascorbic acid content in the treatment containing PGPR consortium followed by dual inoculation and chemical fertilizer.

Effect of plant growth promoting rhizobacteria (PGPR) inoculation on fruit quality of tomato variety PKM-1

S. No	T r e a t m e n t s	Total soluble solid Content (%)	Titrable acidity (%)	Ascorbic acid content (mg/100 g^{-1} of fresh fruit weight)
1	T ₀ - C o n t r o l	4 . 8 0	0 . 4 6	1 2 . 8 0
2	T ₁ - 5 0 % N & P	5 . 4 0	0 . 6 0	1 5 . 4 0
3	T ₂ - 7 5 % N & P	5 . 6 5	0 . 6 3	1 7 . 0 0
4	T ₃ - 1 0 0 % N & P	6 . 0 0	0 . 8 1	2 1 . 1 5
5	T ₄ - 50% N & P + <i>A. lipoferum</i> TMAzs-13 +	5 . 8 4	0 . 7 5	2 0 . 1 0

	<i>P. fluorescens</i> T M P s - 1 9			
6	T ₅ .50% N & P + <i>A. lipoferum</i> TMAzs-13+ <i>B. megaterium</i> T M B - 3	5 . 7 0	0 . 6 8	1 8 . 0 5
7	T ₆ - 50% N & P + <i>A. lipoferum</i> TMAzs-13 + <i>P. fluorescens</i> TMPs-19 + <i>B.megaterium</i> TMB-3	6 . 1 5	0 . 8 4	2 3 . 2 5
S	E D	0 . 0 7	0 . 0 1	0 . 8 2
C D	(p = 0 . 0 5)	0 . 1 3	0 . 0 2	1 . 9 8

DISCUSSION

Among the seven treatments tested, the consortium treatment of T₆ (50% N & P + *A. lipoferum* TMAzs-13 + *P. fluorescens* TMPs-19 + *B. megaterium* TMB-3) showed maximum nutrient content and nutrient uptake of tomato plant. The treatment T₆ was on par with T₃ (100% N & P). Minimum growth and fruit yield was recorded in the treatment T₀ (Control). The inoculation of PGPR consortium recorded maximum plant N, P and K contents in tomato, and in soil which indicated the positive effect of consortium in augmenting the availability of nitrogen and phosphorus to plants. Singh *et al.* (2012) reported that the single (or) combined inoculation of *Glomus fasciculatum* and *Pseudomonas monteilii* significantly influenced the nutrient uptake (N, P, K) by *Coleus forskohlii*. Similarly findings were reported in other crops with beneficial fungal and bacterial consortia (Sastry *et al.*, 2000; Srinath *et al.*, 2003). The fruit quality (total soluble solid content, titrable acidity and ascorbic acid content) of tomato was found to be higher at harvest in the treatment T₆ (50% N & P + *A. lipoferum* TMAzs - 13 + *P. fluorescens* TMPs - 19+ *B. megaterium* TMB-3) which recorded the highest of 6.15 per cent of total soluble solid content, 0.84 per cent of titrable acidity and 23.25 mg/ 100 g⁻¹ fresh fruit weight of ascorbic acid content when compared to other treatments. Based on the results of the present study, it is concluded that the PGPR consortium of *A. lipoferum* TMAzs-13 + *P. fluorescens* TMPs-19 + *B. megaterium* TMB-3 can be recommended to augment the growth, yield and quality of tomato crop besides saving 50% of recommended nitrogen and phosphorus nutrients.

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COMPARATIVE STUDY OF BODY COMPOSITION BETWEEN SPORTS PERSONS AND NON-SPORTS PERSONS IN VARIOUS AGE GROUPS IN KASHMIR DIVISION

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ABSTRACT

The study aimed to compare the Body Composition Between Sports Persons And Non-Sports Persons In Various Age Groups in Kashmir Division. A total 120 subjects, 60 sports person and 60 non-sports persons from Kashmir Division (Jammu and Kashmir). The Subjects were selected by using purposive sampling. The age of the subjects were distributed in three age groups; first group was in between 20-25, second group 25-30 and third group 30-35. To analyze the Body Composition Between Sports Persons And Non-Sports Persons In Various Age Groups in Kashmir Division, Following equipment's and test were used for collection of data, Body Composition was measured by Skin fold Calipers, B.M.I was measured by Stadiometer and weighing machine. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Body Composition Between Sports Persons And Non-Sports Persons In Various Age Groups in Kashmir Division and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: BMI, Fat percentage, sports and non-sports persons, kashmir

INTRODUCTION**Body Composition**

In physical fitness, body composition is used to describe the percentages of fat, bone and muscle in human bodies. Two people of equal height and body weight may look completely different from each other because they have a different body composition. The human body is composed from many major components at the cellular and tissue levels. These include water, minerals, protein and fat. Increases in the levels of fat components are detrimental to health and also sports performance. The mineral components are mainly associated with bone. The assessment of body composition is not only common in sport and exercise sciences but also in medicine. Most of the interest is in quantifying body fat in relation to health and to sports performance. The human body is made up of about 50 elements at the atomic level, of which 98% is due to combination of carbon, oxygen, nitrogen, hydrogen, calcium and phosphorus. At the molecular level, the body is essentially made up of the chemical compounds water, carbohydrates, protein, fat and minerals and these are organized into cells which are the basis of tissues and organs. The relative amounts of adipose tissue, muscle and bone are of importance for health and sports performance, and as a result of methods of body composition analysis have been categorized into fat mass and fat-free mass.

Body Fat Percentage

The body fat percentage of a human or other living being is the total mass of fat divided by total body mass; body fat includes essential body fat and storage body fat. Essential body fat is necessary to maintain life and reproductive functions. The percentage of essential body fat for women is greater than that for men; due to the demands of childbearing and other hormonal functions. The percentage of essential fat is 3–5% in men, and 8–12% in women (referenced through NASM). Storage body fat consists of fat accumulation in adipose tissue, part of which protects internal organs in the chest and abdomen. The minimum recommended total body fat percentage exceeds the essential fat percentage value reported above. A number of methods are available for determining body fat percentage, such as measurement with callipers or through the use of bioelectrical impedance analysis.

Skin fold method

The skin fold estimation methods are based on a skin fold test, also known as a pinch test, whereby a pinch of skin is precisely measured by calipers at several standardized points on the body to determine the subcutaneous fat layer thickness. These measurements are converted to an estimated body fat percentage by an equation. Some formulas require as few as three measurements, others as many as seven. The accuracy of these estimates is more dependent on a person's unique body fat distribution than on the number of sites measured. As well, it is of utmost importance to test in a precise location with a fixed pressure. Although it may not give an accurate reading of real body fat percentage, it is a reliable measure of body composition change over a period of time, provided the test is carried out by the same person with the same technique. Skin fold-based body fat estimation is sensitive to the type of caliper used, and technique. This method also only measures one type of fat: subcutaneous adipose tissue (fat under the skin). Two individuals might have nearly identical

measurements at all of the skin fold sites, yet differ greatly in their body fat levels due to differences in other body fat deposits such as visceral adipose tissue: fat in the abdominal cavity. Some models partially address this problem by including age as a variable in the statistics and the resulting formula. Older individuals are found to have a lower body density for the same skin fold measurements, which is assumed to signify a higher body fat percentage. However, older, highly athletic individuals might not fit this assumption, causing the formulas to underestimate their body density.

BMI: (Body Mass Index)

The body mass index is a statistical measurement derived from your height and weight. Although it is considered to be a useful way to estimate healthy body weight, it does not measure the percentage of body fat. The BMI measurement can sometimes be misleading. A musclemen may have a high BMI but have much less fat than an unfit person whose BMI is lower. However, in general, the BMI measurement can be a useful indicator for the 'average person'. The BMI equation (BMI = Body Mass Index) was originally framed by Adolph Quetelet, a Belgium mathematician and scientist, between 1830 and 1850. Adolph was the first person to think of relating weight to height in a statistical, expressible manner. While the BMI tool is fairly reliable, it is only one tool that physicians use in evaluating a person's health status. It is important to take other measures like blood pressure, cardiac health, physical inactivity and abdominal girth. Also keep in mind that BMI does not distinguish between muscles mass and fat mass. A particularly athletic person whose weight is higher due to muscle may have a BMI that indicates that they are overweight, when their weight is simply higher due to muscle mass. We can find out the BMI by using the formula: $BMI = \frac{WEIGHT}{HEIGHT^2}$ (in kilograms).

Procedure and Methodology

A total 120 subjects, 60 sports person and 60 non-sports persons from Kashmir Division (Jammu and Kashmir). The Subjects were selected by using purposive sampling. The age of the subjects were distributed in three age groups; first group was in between 20-25, second group 25-30 and third group 30-35 were taken for the study.

Equipments Used For Collection of Data

Following equipment's and test were used for collection of data:

Body composition

Body Composition was measured by Skin fold Calipers.

Purpose: To measure fat percentage of Thigh skin fold, Chest skin fold, Abdomen skin fold:

Equipment: Skin fold calliper.

B.M.I: (Body mass index)

Purpose: To measure the Standing height and Body weight:

Equipment: Stadiometer and weighing machine.

Table-1: Comparison of BMI from 20-25, 25-30, 30-35, Age groups between sports and Non-sports persons

Age Group	Group	Mean	S.D.	M.D.	D.F.	O.T.	T.T.
20-25	Sports Persons	21.72	2.42	2.66	38	3.81	2.02
	Non-Sports Persons	19.06	1.96				
25-30	Sports Persons	21.23	1.96	0.24	38	0.25	2.02
	Non-Sports Persons	21.47	3.87				
30-35	Sports Persons	20.30	2.15	2.86	38	2.97	2.02
	Non-Sports Persons	23.17	3.74				

Graph-1: Graphical representation of means of BMI from 20-25, 25-30, 30-35 Age groups between sports and non sports persons

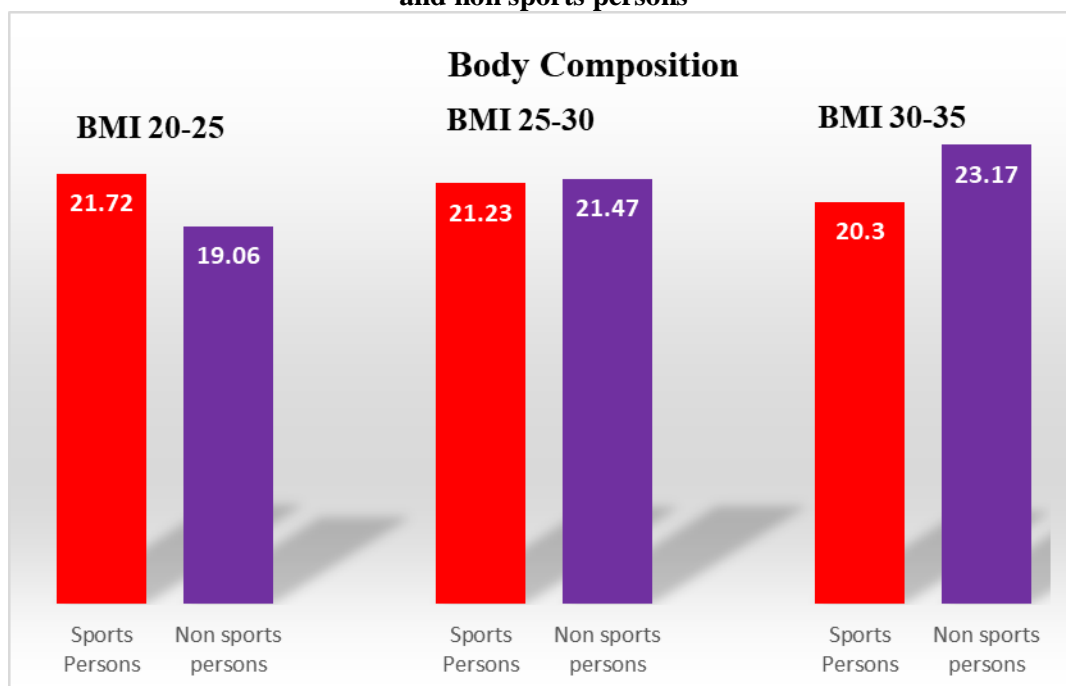
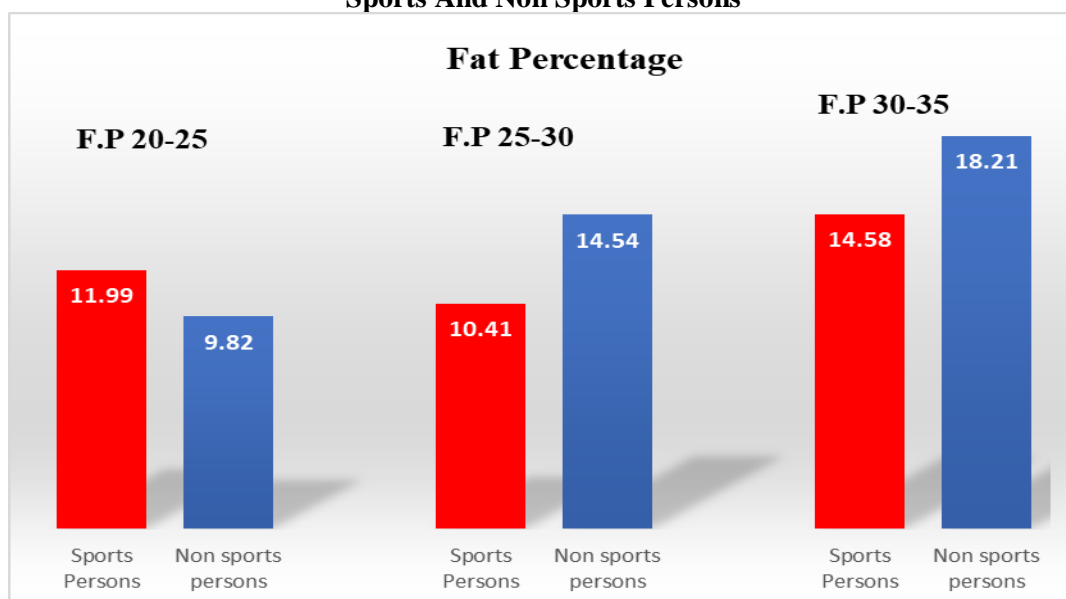


Table-2: Comparison of Fat Percentage from 20-25, 25-30, 30-35, Age groups between sports and non sports persons

Age Group	Group	Mean	S.D.	M.D.	D.F.	O.T.	T.T.
20-25	Sports Persons	11.99	4.83	2.17	38	1.52	2.02
	Non-Sports Persons	9.82	4.18				
25-30	Sports Persons	10.41	3.53	4.13	38	2.23	2.02
	Non-Sports Persons	14.54	7.48				
30-35	Sports Persons	14.58	2.81	3.64	38	2.58	2.02
	Non-Sports Persons	18.21	5.64				

Graph-2: Graphical Representation Of Means Of BMI From 20-25, 25-30, 30-35, Age Groups Between Sports And Non Sports Persons



CONCLUSION

On the basis of the result drawn with the mentioned methodology the following conclusion were drawn out.

There was found significant difference in body composition as BMI and fat percentage between sports and non sports person under three age groups, I 20-25, II 25-30, III 30-35. The study showed the partially significant

difference among the mean of selected items of the groups. The conclusion of this research work May aware sports and non- sports persons about physical and physiological parameters while performing any physical activity.

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COMPARATIVE STUDY OF SELECTED MOTOR FITNESS COMPONENTS AMONG SWIMMERS AND FOOTBALL PLAYERS

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ABSTRACT

The study aimed to compare the Selected Motor Fitness Components Among Swimmers And Football Players. A total of sixty (60) subjects, comprising 30 swimmers and football players. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-25 years. To analyze Selected Motor Fitness Components Of the subjects of both the groups I.e Swimmers And Football Players, The following tests or equipment's were used cardiovascular endurance was measured by harwards tep test, Speed,. Was measured by 50 meters run, Agility was measured by shuttle run. Explosive strength was measured by standing broad jump. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Selected Motor Fitness Components Among Swimmers And Football Players and the level of significance was set at 0.05 levels ($p < 0.05$)

Keywords: Motor fitness, Simmers, Football players.

INTRODUCTION

The term motor fitness is most often used synonymously with physical fitness by the coaches but it is very important for the physical education students to understand the basic difference between physical fitness and motor fitness. Physical fitness is used to denote only the five basic fitness components (muscular strength, muscular endurance, cardiovascular endurance, freedom from obesity and flexibility), whereas motor fitness is a more comprehensive term, which includes all the ten fitness components including additional five motor performance components (power, speed, agility, balance and reaction time), important mainly for success in sports. In other word, motor fitness refers to the efficiency of basic movements in additional to the physical fitness. Physical educators, exercise physiologists, and physicians have proposed many tests to demonstrate the effect of such programs. These tests have generally been labeled "Motor Fitness Test" "Physical Fitness Tests" and "Cardiovascular Tests". Additional tests have been developed by many colleges and universities. With so many groups and individuals promoting different fitness test, the practitioner may easily become confused especially when the same items appears in both motor and physical fitness tests

CARDIOVASCULAR ENDURANCE CARDIOPULMONARY OR CIRCULATORY- RESPIRATORY ENDURANCE

The ability to performance muscular work at sub maximal level by moderate contractions for a long time. Is known as cardiovascular endurance. The direct testing of cardiopulmonary endurance is made by measuring one's aerobic power or maximum oxygen uptake capacity while indirectly it is measured with the help of long duration activities like middle/long distance running, cycling of swimming.

ADDITIONAL FIVE COMPONENTS OF MOTOR PERFORMANCE INCLUDED IN MOTOR FITNESS**Muscular Power**

Ability to release maximum muscular force rapidly in an explosive manner in the shortest duration is known as muscular power, for example standing broad jump or vertical jump performance.

Agility

The speed with which an individual may change his body positions or fastness in changing directions while moving is known as agility. For example, shuttle run etc.

Speed

The rapidity of muscle movement or the rate of change of body movement is known as muscular speed. Literality speed is measured by dividing distance by time in short run. However, in sports, time of sprint of 60 yaed dash itself is considered as a measure of one's speed instead of converting it in meters per second it is recorded as seconds per 60 yard or per 30 M etc.

Meaning of Endurance

Endurance like strength is a conditional ability .it is primarily determined by energy liberation processes. The ability of the human body to maintain a certain level of energy production forms the physiological basis of

endurance. Due to its high importance for health and training and competition and also. Due to its physiological determinants, which can be relatively easily studied, it is an ability which has been studied in great detail and depth by the physiologists.

Balance

The ability to hold the body position in comparatively less stable positions is known as body balance. Balance is of two types' static balance and dynamic balance.

Reaction Time

The interval between presentation of stimulus and the first response is called Reaction Time. In other word it is the time taken in responding to a visual or auditory stimulus. It may also be divided into two categories. Visual Reaction Time and Auditory Reaction Time.

Procedure and Methodology

Sixty (60) subjects were selected for this study. Thirty (30) subjects were taken from Football while the remaining thirty (30) were taken from swimming game. The subjects were selected by simple random sampling method. The age of the subjects ranged between 18-25 years.

Equipments Used For Collection of Data

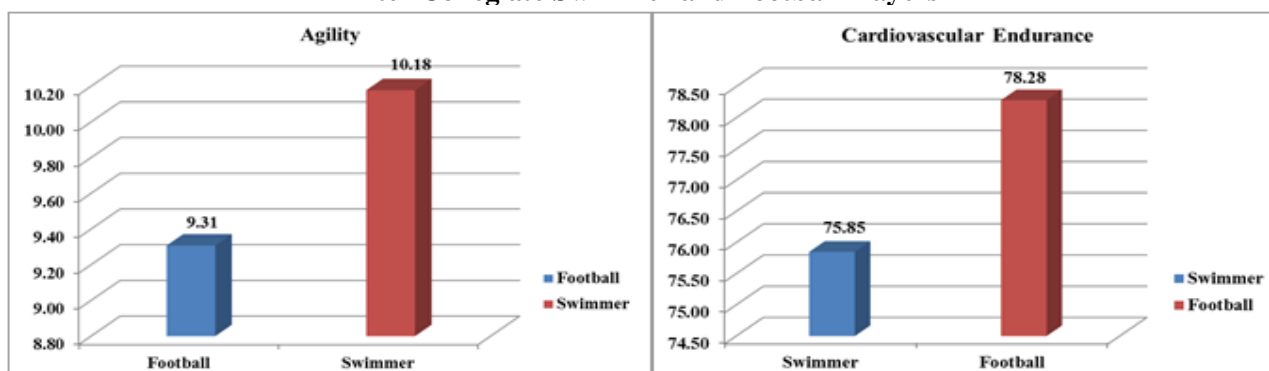
The following tests or equipment's were used cardiovascular endurance was measured by harward step test, Speed,. It was measured by 50 meters run, Agility it was measured by shuttle run. Explosive strength was measured by standing broad jump.

Sl. No.	Motor fitness components	Methods	Equipment/ Test items	Unit/Measures
01.	Cardio-vascular endurance	Harvard step test	Stopwatch, 20 inch high bench, metronome or tape recorder (optional), stethoscope.	Minutes
02.	Speed	50 meters run	Electronic stopwatch, starting Clapper.	Seconds
03.	Agility	Shuttle run	Playfield area, measuring tape, stopwatch, whistle and two wooden blocks.	Seconds
04.	Explosive strength	Standing broad jump	Measuring tape and marking powder.	Meters

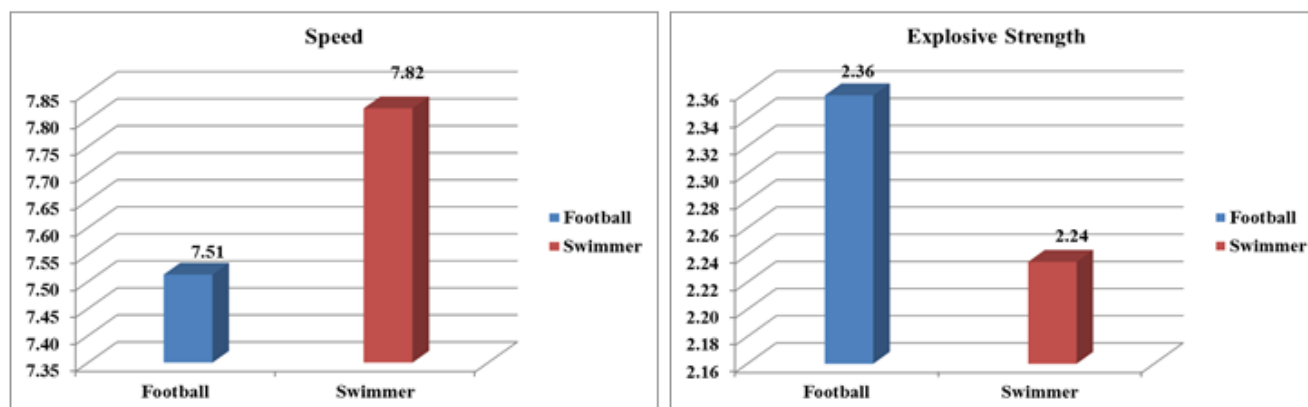
Table: Comparison of Aggression and Impulsiveness Among Woman Players Participating In various Games

Components	Group	Mean	S.D.	M.D.	S.E.	D.F.	O.T.	T.T
Agility	Football	9.31	0.37	0.87	0.18	58	4.82	2.02
	Swimmer	10.18	0.72					
Cardiovascular endurance	Football	78.28	3.20	2.43	1.13	58	2.16	2.02
	Swimmer	75.85	3.88					
Speed	Football	7.51	0.27	0.31	0.09	58	3.47	2.02
	Swimmer	7.82	0.29					
Explosive strength	Football	2.36	0.11	0.12	0.03	58	4.18	2.02
	Swimmer	2.24	0.07					

Graph: Graphical Representation of Mean Difference between Agility and cardiovascular endurance of Inter Collegiate Swimmer and Football Players



Comparison in Speed and Explosive Strength of Inter Collegiate Swimmer and Football Players



CONCLUSION

The researcher compared the selected motor fitness components among swimmers and football players. Within the limitations of the present study and on the basis of findings it is concluded that there is significant difference in selected motor fitness components between the Agility, Cardiovascular Endurance, Explosive Strength and Speed of inter collegiate swimmer and football players, it is found that there is also significant result in Agility, Explosive Strength, Speed and Cardiovascular Endurance. Hence the researcher's pre assumed has been accepted.

On the basis of finding and within the limitation of present study the following conclusions have been drawn:

On the basis of result it was found that there was significant difference in the selected motor fitness components of swimmer and football Players.

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COMPARATIVE STUDY OF STRESS LEVEL AMONG PHYSICAL EDUCATION STUDENTS AND OTHER PROFESSIONAL STUDENTS OF KASHMIR UNIVERSITY

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ABSTRACT

The study aimed to compare the Stress Level among Physical Education Students and Other Professional Students of Kashmir University. A total No. of Fifty (50) subjects were selected for this study. Ten (10) subjects were taken from Physical Education department and forty (40) subjects were taken from professional departments of Kashmir University. The Subjects were selected by using simple random sampling. The age of the subjects were selected from 18 year onwards. To analyze the Stress Level among Physical Education Students and Other Professional Students of Kashmir University, The standard questionnaire of stress inventory framed by Arun Singh, K. Singh and Arpana Singh was used for the collection of data. This Inventory consists of 35 items. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Stress Level among Physical Education Students and Other Professional Students of Kashmir University and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: Stress Level, Students, Kashmir University.

INTRODUCTION**Meaning of Stress**

Stress relates to the force applied to a system that invariably brings about some change or modification. Psychological stress is often thought of as the perceived demands of a situation in relation to the resources of the individual to cope with those demands. Some psychologists prefer to think of stress as the process itself; various emotional reactions might result from the stressor (i.e. the demand itself). For example, 'facing a tough opponent' (the stressor) is appraised as stretching one's resources (the stress process). Stress is a state to which the natural body equilibrium i.e. Homeostasis is disturbed caused by any threat to organism. Only some stresses are universal. One stress may be stressful to one person but it may not be a stressful to another. Stress is defined by Selye (1976) as non specific response of the body to any demand on it. The sources of stress are referred as stressors. The body reacts to different kinds of stressors in the same way.

Stress is a complex phenomenon. It is very subjective experience. What may be challenge for one will be a stressor for another? It depends largely on background experiences, temperament and environmental conditions. Stress is a part of life and is generated by constantly changing situations that a person must face. The term stress refers to an internal state, which results from frustrating or unsatisfying conditions. A certain level of stress is unavoidable. Because of its complex nature stress has been studied for many years by researchers in psychology, sociology and medicine. Stress is a state to which the natural body equilibrium i.e. Homeostasis is disturbed caused by any threat to organism. Only some stresses are universal. One stress may be stressful to one person but it may not be a stressful to another. Stress has been defined as the adaptative physiological response of the human organism to internal and external force and events which disturb the homeostatic balance of the individual. The imbalance may be caused by psychic, physical and social agents or conditions.

Meaning of Profession

In general, a profession is made up of a group of people who provide a unique social service to humankind. For providing this service, the members have secured specialized skills obtained in a body of knowledge of an academic discipline; the services are rendered according to the standards for moral behavior and ethical practices. In sports, a professional is someone who receives monetary compensation for participating. The opposite is an amateur, meaning a person who does not receive monetary compensation. The term "professional" is commonly used incorrectly when referring to sports, as the distinction simply refers to how the athlete is funded, and not necessarily competitions or achievements. Same thing can be called as business if ethics are not followed. A teacher teaching properly in the class-room, completing the course of study, solving the difficulties of the students, helping them in appearing the various examinations is called as he is professional man. While a teacher will not paying attention in the working of the school but inviting the students for highly charged private classes may be called as a businessman. Hence the purpose, the motto, the ethics is important for the same work to be called as business or profession, though in both the case earning is a common factor.

Physical Education as a Profession:

Our attempt to analyze and understand the emergence of the sport, fitness and physical education professions from 1885 into the twentieth century has been framed in the context of the general culture. We want to know why things happened as they did –and why some direction rather than others were taken. We cannot answer these questions satisfactorily without first in the painting in the background for the picture of the developing culture without sport, fitness and physical education began to emerge toward the end of the nineteenth century, to blossom as the umbrella profession of physical education in the first half of the twentieth century. Let us consider a few of the more important and Physical Education Professions:

- **Decline of Religious Opposition to Sports and Exercise:** The early development of physical education and leisure pursuits had been seriously hindered by religious sanctions. In the nineteenth century, however, religion and sport reached an accommodation in the physiology of muscular Christianity, the idea that the body and physical pursuits were not antithetical to a good, Christian life. The YMCA movement, and other like it, serves to consolidate this philosophical position, using sports and exercise as activities through which to reach and serve youth.
- **Immigration:** Between 1820 and 1880, 10 million immigrants came to America. From 1880 to 1890, another 9 million came. Immigrants brought with them new games and new attitudes, greatly enriching the sport and fitness culture of their new country, sometimes, sports was mechanisms through which they became acclaimed Americans. They settled mainly in cities and, with the rise of professional sport in large cities, found common loyalties with other immigrant groups and with groups already established in this country.
- **Industrialization:** The American Civil War had greatly intensified the move toward industrialization. Industrialization produced wealth –and some of that wealth helped to develop sport, fitness, and physical education. Industrialization created technologies for the development of facilities and equipment.
- **Urbanization:** As immigrants poured into the country and industries developed in and around major cities, the population of America inevitably shifted from predominantly rural to predominantly urban. Whereas hunting, fishing and other outdoor activities might sustain the leisure needs of a rural population, new activities had to be developed to meet the leisure needs of urban population. Concentrated populations in cities and the wealth produced by industrialization were also necessary forerunners for the development of professional sport.
- **Transportation and Communication:** The developing technologies in transportation and communication were especially important to the development and spread of sport. The telegram invented in 1840s, allowed instant communication of sports results. City newspaper became sufficiently sophisticated to have separate pages, or even sections, devoted to sport. In the 20th century, the development of radio and television was to have an even larger influence on sport and fitness.

Automatic vs. controlled processes/cognitive control

Dual process theory states that mental processes operate in two separate classes: automatic and controlled. In general, automatic processes are those that are experiential in nature, occur without involving higher levels of cognition, and are based on prior experiences or informal heuristics. Controlled decisions are effortful and largely conscious processes in which an individual weighs alternatives and makes a more deliberate decision.

Automatic Process: Automatic processes have four main features. They occur unintentionally or without a conscious decision, the cost of the decision is very low in mental resources, they cannot be easily stopped, and they occur without conscious thought on the part of the individual making them.

Aggression

Aggression is a part of human behaviour and is necessary for an individual to live and struggle for higher achievements. Struggle for supremacy, dominance, and excellence in sports obviously involves aggression. Aggression in one form or the other is inevitable and inescapable in sports activities. When hostility takes over aggression, the situation becomes alarming and it becomes an anti-social behaviour.

Aggression in sports

In sports today, aggression plays a major role. According to research it is apparent that sports is perhaps the only setting in which acts of inter personal aggression are not tolerated, but enthusiastically applauded by large segments of society, e.g., Tanenbaum, Stewart, Singer and Duda, (1996). Tanenbaum, et.al. 1996 define aggression as the infliction of an aversive stimulus, either physical, verbal, or gestural upon one person by

another. This definition encompasses two distinct types of aggression, hostile and instrumental. Tenebaum and colleagues describe hostile aggression as having a principal reward, or intent, to inflict pain upon another for the individuals own sake. In instrumental aggression the major reinforcement is the achievement of pa subsequent goal. Instrument aggression in sports is welcomed as it is beneficial to support both individual and team success, were hostile aggression is unhealthy and can be detrimental to all aspects of a given sport. Professional sports are becoming increasingly more violent. Social psychologists have discerned a number of influences that may be involved. Sports players have scripts for resolving problems with physical action, thus when problems arise, hey immediately seek to act, aggressively if necessary. Another influence is the violence inherent in over society and the media.

Procedure and Methodology:

Fifty subjects were selected for the collection of data which include 25 Volleyball players and 25 Kabaddi players.. The subjects were selected by purposive sampling method. The age of the subjects ranged between 18-25 years.

Equipments Used For Collection of Data:

The standard questionnaire of stress inventory framed by Arun Singh, K. Singh and Arpana Singh was used for the collection of data. This Inventory consists of 35 items.

Table: Comparison of Stress between M.P.Ed and M.Ed., M.P.Ed and M.C.A., MPed and M.B.A., MPed and M.Com, MPed and other professional Students of Kashmir University

Group	Mean	S.D.	M.D.	D.F.	O.T.	T.T.
M.P.Ed.	66.20	7.57	3.10	18	1.06	2.101
M.Ed.	63.10	5.34				
M.P.Ed.	66.20	7.57	8.60	18	2.72	2.101
M.C.A.	74.80	6.53				
M.P.Ed.	66.20	7.57	8.30	18	2.54	2.101
M.B.A.	74.50	7.04				
M.P.Ed.	66.2	7.57	1.40	18	0.47	2.101
M.COM.	64.80	5.47				
M.P.Ed	66.20	7.57	3.10	18	1.22	2.101
Other Professional	69.30	2.66				

Graph

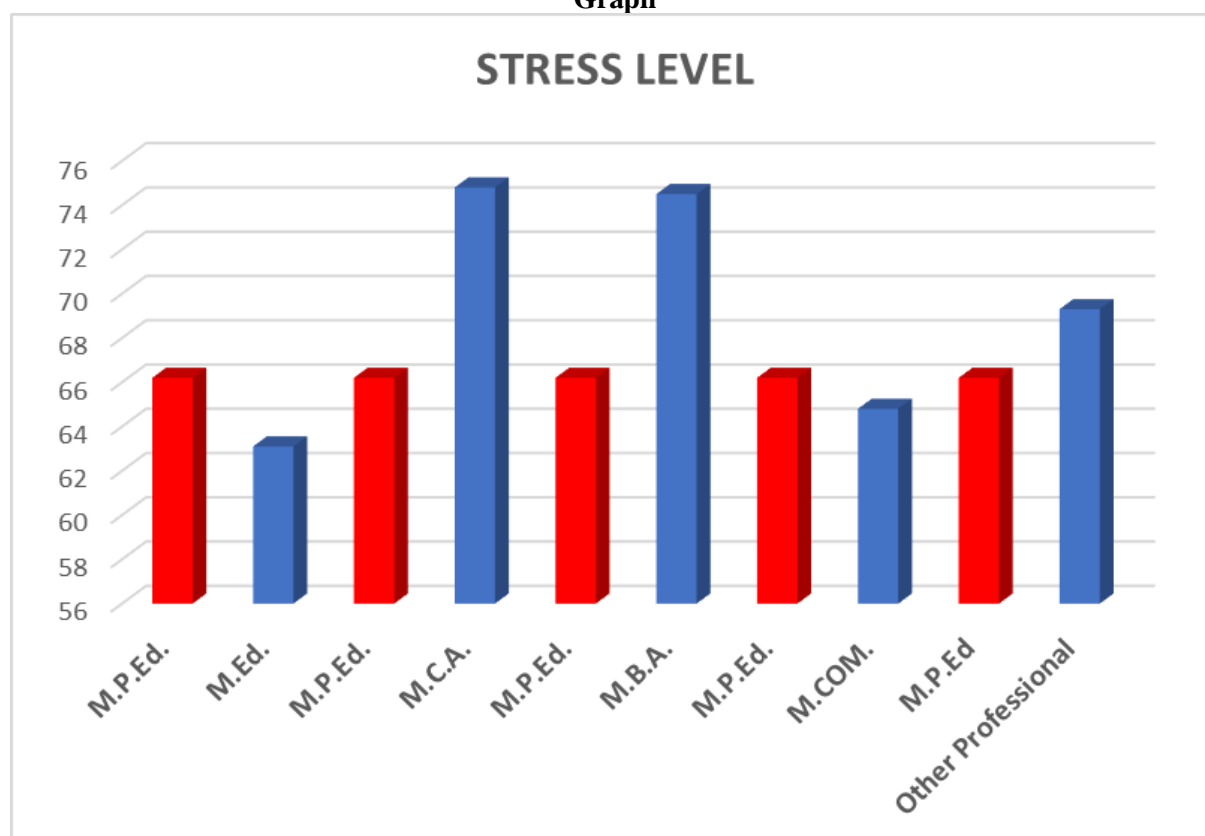


Table No-2: Showing stress in percentage between M.P.Ed and other professional Students of Kashmir University

S. No.	Subject	High		Moderate		Low	
		Actual	%	Actual	%	Actual	%
1.	M.P.Ed.	1	10	9	90	-	-
2.	M.Ed.	-	-	10	100	-	-
3.	M.B.A.	2	20	8	80	-	-
4.	M.C.A.	2	20	8	80	-	-
5.	M.COM.	-	-	10	100	-	-

CONCLUSION

Within the limitations of the study and from the statistical analysis the following conclusion is drawn. On the basis of available literature, researcher own experience and knowledge of Psychology, it was hypothesized that there will be a significant difference between the Stress level of physical Education Students of Kashmir University and other professional students of Kashmir University but after the statistical analysis of data related to the stress of various departments it was found that in all cases there was not found difference between the Stress level of physical Education Students of Kashmir University and other professional students of Kashmir University. Hence the Researchers Pre- assumed Hypothesis is partially accepted.

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COMPARATIVE STUDY ON EMOTIONAL INTELLIGENCE BETWEEN FEMALE SPORTS PERSON AND NON-SPORTS PERSON

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ABSTRACT

The study aimed to compare the Emotional Intelligence Between Female Sports Person And Non-Sports Person. A total of forty 40 subjects for this study. All the subjects divided into two groups consisting of 20 subject's female sports person and 20 non-sports. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-30 years. To analyze the Emotional Intelligence Between Female Sports Person And Non-Sports Person, The standard questionnaire of Emotional Intelligence (EI) scale is a cluster of traits or abilities relating to emotional side of life, compiled or developed by Dr. Sheetal Prasad was used for the collection of data it contain 40 items. The Emotional Intelligence (EI) scale is the set of 40 questions and each question has four responses viz. self confident, trustworthy, innovative, conscientious, and adjusted.. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Emotional Intelligence Between Female Sports Person And Non-Sports Person and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: Emotional Intelligence, Female Sports Persons, Female Non-Sports Persons

INTRODUCTION**Emotional intelligence**

A clear and scientifically useful definition of emotional intelligence, however, is recognizable because it takes the terms emotion and intelligence seriously, that is the meaning of emotional intelligence has something Specific to do with the intelligence intersection of the emotions and thoughts.

We define E.I as the capacity to reason about emotions and of emotions to enhance thinking. It includes the abilities to accurately perceive emotion, to access and generate emotions. So, as to assist thoughts to understand emotions and emotional knowledge and to reflectively regulate emotions. So as to promote emotional land intelligence growth. Emotional intelligence refers to an ability to recognize the meanings of emotions and their relationship and to reason and problem solve on the basic of them emotional perceive emotions, assimilate emotion related feelings, understand the information of those emotions and manage them.

Women and Emotions

In 2001, Gallup poll asked American adults whether a series of qualities applied more to men or to women. Ninety percent of those surveyed said that the characteristic "emotional" applied more to women. The survey didn't ask about particular emotions or specify positive or negative connotations for the word "emotion." But it seems likely from the results that most Americans view women as either able to experience or prone to experiencing a wider, more intense range of emotions than men do. The perception that women cry more than men is pretty widespread. But as babies and children, boys and girls cry about the same amount on average. Only during puberty do girls begin to cry more than boys do. In 2005, New York Times article by age 18, women cry four times as much as men.

A possible explanation for this is the hormone prolactin, which contributes to how much people cry. Prolactin is present in blood and tears, and it's more prevalent in women than in men. Women's tear ducts are also shaped a little differently from men's, which could be either a cause or an effect of increased crying. In addition, people who are depressed may cry four times as much as people who are not, and two-thirds of people diagnosed with depression are women of course, another common explanation is that some societies encourage women to cry while discouraging men from crying. In the United States, an exception to this standard seems to be the business world. In some businesses, crying is discouraged -- a woman who cries in the office may be viewed as weak or ineffectual.

Dimensions of Emotional Intelligence

Emotional intelligence calls for acquisition of certain emotional skills. Managers have to learn skills to be star performers and achieve success in their professional life. The three dimension of emotional intelligence.

6. Emotional Competency

The capacity to tactfully respond to emotional stimuli elicited by various situations, having high self-esteem and optimizing communication skills

7. Emotional Maturity

The ability to evaluate emotions of oneself and other; identify and express feeling; balance the state of hearts and mind; appreciate others points of view develop others; delay gratification of immediate psychological satisfaction; and being adaptable and flexible.

8. Emotional Sensitivity

Constitutes understanding the threshold of emotional arousal; managing the immediate comfort with others and letting others feel comfortable in four companies.

Procedure and Methodology

Forty 40 subjects for this study. All the subjects divided into two groups consisting of 20 subject's female sports person and 20 non-sports. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-30 years..

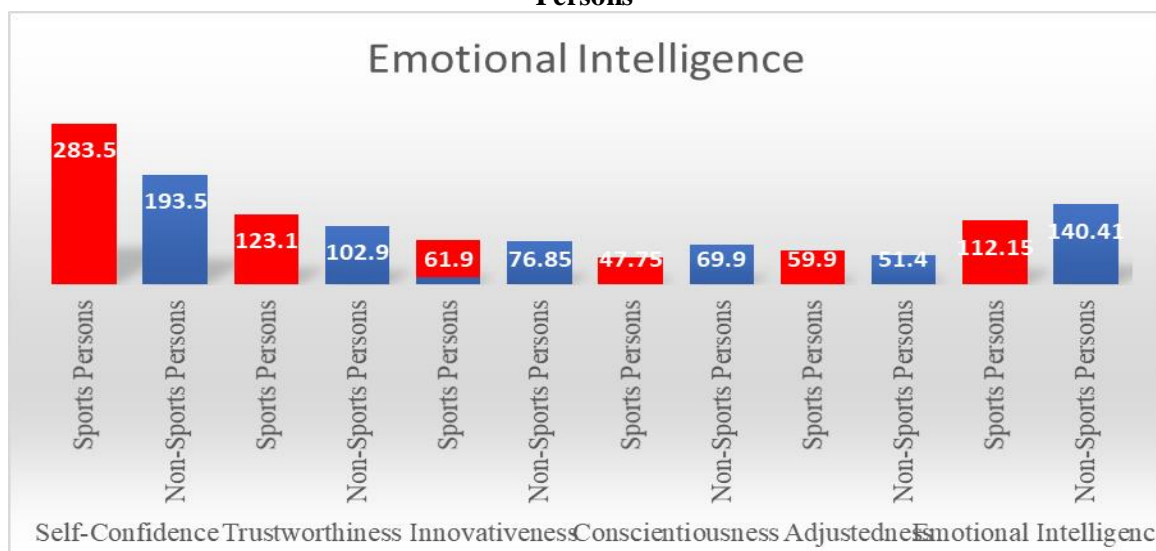
Equipments Used For Collection of Data

The standard questionnaire of Emotional Intelligence (EI) scale is a cluster of traits or abilities relating to emotional side of life, compiled or developed by Dr. Sheetal Prasad was used for the collection of data it contain 40 items. The Emotional Intelligence (EI) scale is the set of 40 questions and each question has four responses viz. self confident, trustworthy, innovative, conscientious, and adjusted..

Table-1: Comparison of Self-Confidence, Trustworthiness, Innovativeness, Conscientiousness, Adjustedness, Emotional Intelligence between Female Sports and Female Non-Sports Persons.

Group	Group	Mean	S.D.	M.D.	D.F.	O.T.	T.T.
Self-Confidence	Sports Persons	283.5	259.96	90	38	0.11	2.02
	Non-Sports Persons	193.5	75.39				
Trustworthiness	Sports Persons	123.1	45.25	20.2	38	0.18	2.02
	Non-Sports Persons	102.9	32.73				
Innovativeness	Sports Persons	61.9	38.92	14.95	38	0.089	2.00
	Non-Sports Persons	76.85	18.98				
Conscientiousness	Sports Persons	47.75	26.02	22.45	38	0.003	2.02
	Non-Sports Persons	69.9	18.94				
Adjustedness	Sports Persons	59.9	30.11	8.1	38	0.29	2.02
	Non-Sports Persons	51.4	9.78				
Emotional Intelligence	Sports Persons	112.15	45.88	28.26	38	0.52	2.02
	Non-Sports Persons	140.41	185.60				

Graph-1: Graphical representation of means of Self-Confidence, Trustworthiness, Innovativeness, Conscientiousness, Adjustedness, Emotional Intelligence between Female Sports and Female Non-Sports Persons



CONCLUSION

With the limitations of the study and from the statistical analysis of the collected data it is concluded that there is found no insignificant difference in Emotional Intelligence between Female Sports Person and Non-Sports Person. Hence the researchers hypothesis has been accepted.

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COMPARISON OF SELECTED HEALTH RELATED PHYSICAL FITNESS COMPONENTS OF FEMALE INDIAN CLASSICAL DANCERS AND PHYSICAL EDUCATORS

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ABSTRACT

The study aimed to compare the Selected Health Related Physical Fitness Components Of Female Indian Classical Dancers And Physical Educators. A total of fifty 50 subjects, comprising 25 physical educators and 25 classical dancers' subjects were selected from each group i.e. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-25 years. To analyze the Selected Health Related Physical Fitness Components Of the subjects of all the groups i.e. Female Indian Classical Dancers And Physical Educators, following Equipment's used for collection of data: 1. Stop watch and mat measuring for abdominal strength., 2. Skin fold caliper measuring fat percentage, 3. Yardstick and mat for measuring flexibility, 4. Vo2 max. Bench for cardiovascular endurance has been used for the collection of data. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Selected Health Related Physical Fitness Components of Female Classical Dancers And Physical Educators and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: Indian Classical Dancers, Physical Educators

INTRODUCTION

Exercise Physiology is the study of how exercise alters the function and structure of the body. A sports physiologist examines the acute responses and chronic adaptations to athletic performance in a variety of environments. The physiologist possesses a wide-ranging understanding of the body, enabling them to advise athletes and coaches of how training and preparation influence competition performance.

Testing can take place in the lab, which ensures a controlled environment to compare exercise test results. However, it is not always possible to simulate sporting activity in a lab and with advances in technology physiologists use field-based testing as much as possible. This work is vital as it can evaluate training as it happens; allowing the athlete and coach to objectively monitor what impact a particular session has had on the body. Physiology can improve an athlete's performance by giving important objective information which can help coaches to adapt training programmes to maximise their desired outcome. This will depend on many factors including the environment, diet, gender, age and health.

Resting heart rate

Before recording the resting heart rate, the subjects were instructed to remain lying on their beds for 10 minutes. To record the heart rate, automatic digital blood pressure monitor was used for one full minute. The start/stop button was pressed. All elements displayed '888' in 3 seconds. The moment the measuring blood pressure symbol flashed on the display, the air pressure automatically pumped up to 95 mmHg. Then it automatically started decreasing in order to detect heartbeat. No movement and talking were permitted in the midst of taking rate. Score was recorded in number of pulse per minute.

Cardiovascular Endurance

The ability to performance muscular work at sub maximal level by moderate contractions for a long time. Is known as cardiovascular endurance. The direct testing of cardiopulmonary endurance is made by measuring one's aerobic power or maximum oxygen uptake capacity while indirectly it is measured with the help of long duration activities like middle/long distance running, cycling of swimming.

VO₂ Max

It may be defined as the ability of the body to use maximum oxygen for the production of adenosine triphosphate which gives energy to the whole body for regulating and maintaining proper functioning of the body.

Physical fitness

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, moderate-vigorous Physical exercise physical activity, and sufficient rest. Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However, with automation and changes in

lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations. Fitness is defined as the quality of being suitable to perform a particular task. Around 1950, perhaps consistent with the Industrial Revolution and the treatise of World War II, the term fitness increased in western vernacular by a factor of ten. Modern definition of fitness describes either a person or machine's ability to perform a specific function or a holistic definition of human adaptability to cope with various situations. This has led to an interrelation of human fitness and attractiveness which has mobilized global fitness and fitness equipment industries. Regarding specific function, fitness is attributed to personnel who possess there from the deferent in significant aerobic or anaerobic ability, i.e. strength or endurance. A holistic definition of fitness is described by Greg Glassman in the Cross Fit journal as an increased work capacity across broad times and modal domains; mastery of several attributes of fitness including strength, endurance, power, speed, balance and coordination and being able to improve the amount of work done in a given time with any of these domains. A well rounded fitness program will improve a person in all aspects of fitness, rather than one, such as only cardio/respiratory endurance or only weight training. A comprehensive fitness program tailored to an individual typically focuses on one or more specific skills, and on age or health-related needs such as bone health. Many sources also cite mental, social and emotional health as an important part of overall fitness. This is often presented in textbooks as a triangle made up of three points, which represent physical, emotional, and mental fitness. Physical fitness can also prevent or treat many chronic health conditions brought on by unhealthy lifestyle or aging. Working out can also help some people sleep better and possibly alleviate some mood disorders in certain individuals.

Procedure and Methodology:

A total of fifty 50 subjects, comprising 25 physical educators and 25 classical dancers' subjects were selected from each group i.e. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-25 years.

Equipments Used For Collection of Data:

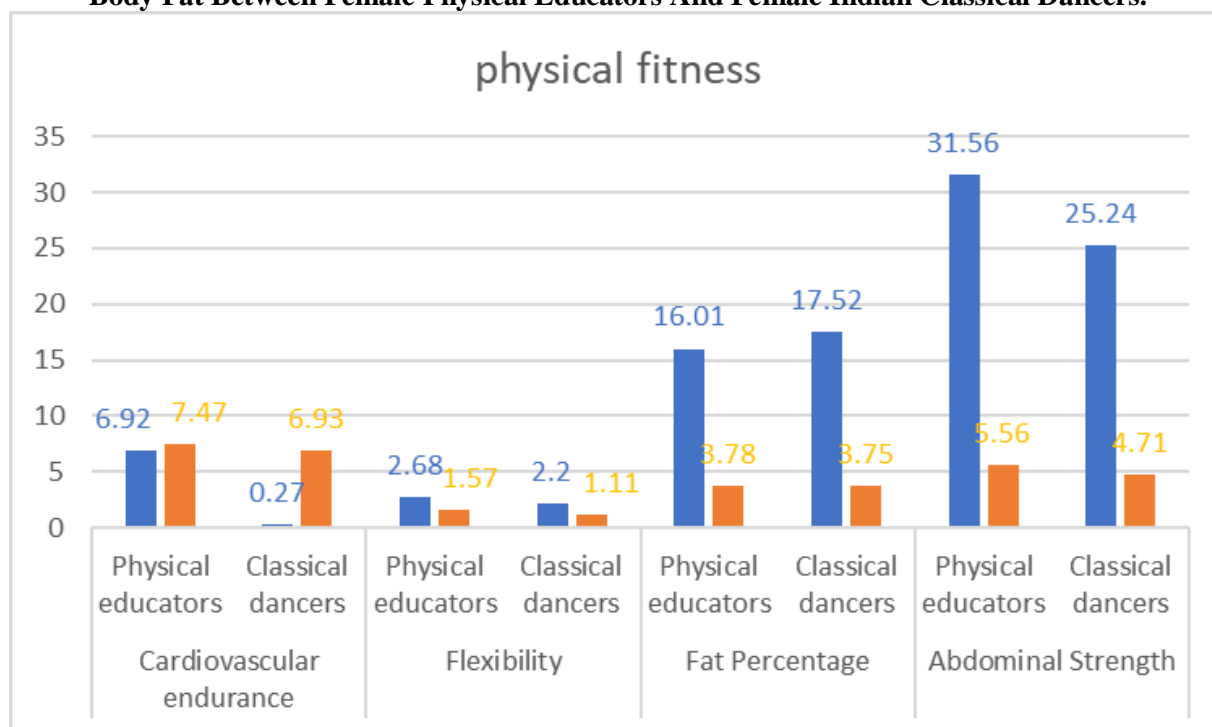
following Equipment's used for collection of data:

(1).Stop watch and mat measuring for abdominal strength, (2).Skin fold caliper measuring fat percentage, (3).Yardstick and mat for measuring flexibility, (4) .Vo2 max. Bench for cardiovascular endurance has been used for the collection of data.

Table: Comparison Of Cardio Vascular Endurance, Abdominal Strength, Flexibility And Body Fat Between Female Physical Educators And Female Indian Classical Dancers.

Components	Group	Mean	S.D.	M.D.	S.E.	D.F.	O.T.	T.T
Cardiovascular endurance	Physical educators	6.92	7.47	3.35	1.54	48	1.64	2.02
	Classical dancers	0.27	6.93					
Flexibility	Physical educators	2.68	1.57	0.48	0.38	48	1.24	2.02
	Classical dancers	2.2	1.11					
Fat Percentage	Physical educators	16.01	3.78	1.50	1.06	48	1.40	2.02
	Classical dancers	17.52	3.75					
Abdominal Strength	Physical educators	31.56	5.56	6.32	1.45	48	4.32	2.02
	Classical dancers	25.24	4.71					

Graph: Graphical representation Cardio Vascular Endurance, Abdominal Strength, Flexibility And Body Fat Between Female Physical Educators And Female Indian Classical Dancers.



CONCLUSION

Within the limitations of the study and from statistical analysis the following conclusion was drawn.

- Both dancers and professional physical education programmes are equally effective in inducing optimum physiological adaptations in various health related physical fitness components such as cardio vascular endurance, flexibility and body fat.
- Physical educator's activities produce better results than classical dancing in developing the selected component abdominal strength.

There was found insignificant difference in the cardiovascular endurance, flexibility and body fat but found significant difference in abdominal strength between female Indian classical dancers and physical educators. Hence the researchers pre-assumed is partially accepted.

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HUMAN PHYSIOLOGY AND THE ROLE PLAYED BY PHYSIOLOGICAL VARIABLES

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Abstract

The meaning of human Physiology is the study of body function. In physiology we study how our organs, systems, tissues, cells and molecules within cells work and how their function are put together to maintain our internal environment. Physiology is the study of how human body functions. Physiologists study the various characteristic of living things. Their studies range from the most basic unit of organism, the cell, to the more complex organs and organ systems such as the brain and respiratory systems.

Keywords: Haemoglobin, blood pressure, exhale capacity, red blood cells

INTRODUCTION**Hemoglobin**

Hemoglobin is a complex compound found in Red Blood Cells that contain iron (haemo) and protein (globin) and is capable of combining with oxygen. Hemoglobin is basically organic material with a very interested organic structure known as haeme. The interesting thing about this structure is that it contains iron and this iron is capable of combining with oxygen to form oxyhaemoglobin in Red Blood Cells by means of this function oxygen is carried to the tissues from the lungs.

The determination of blood constituents are of great importance in relation to health and disease in human beings. Physically fit consumes more oxygen. In fact, the hemoglobin is responsible for the transport of oxygen wherever the concentration of hemoglobin increases which helps in the required supply of oxygen. The normal average Red Blood Cells count in adult male is taken as 5.5 million per cubic millimeter and female 4.8 million per cubic millimeter, increasing the Red Blood Cell. Status of an individual it is necessary to evaluate the hemoglobin percentage.

Exhale Capacity

Exhale capacity is the total amounts of air that can be forcibly expire after a complete inspiration has been used frequently as a measure of adequacy of the respiratory system. Although it measures the approximately capacity of the lungs, recent information indicates it is of little use in predicting ability to perform tasks of endurance. Obviously other factors are more important. For example, any limitations of the oxygen delivery system to the cells will reduce the effectiveness of the delivery; regardless of vital capacity is the ability to take in more air per unit of time with fewer, but deeper inspiration, thus prolonging the onset of fatigue in the respiratory muscle.

Blood Pressure

Blood pressure (BP), sometimes referred to as arterial blood pressure, is the pressure exerted by circulating blood upon the walls of blood, and is one of the principal vital signs. When used without further specification, "blood pressure" usually refers to the arterial pressure of the systemic circulation, usually measured at a person's upper arm. A person's blood pressure is usually expressed in terms of the systolic pressure over diastolic pressure and is measured in millimetres of mercury (mm Hg). Normal resting blood pressure for an adult is approximately 120/80 mm Hg. Blood pressure varies depending on situation, activity, and disease states, and is regulated by the nervous and endocrine systems. Blood pressure that is pathologically low is called hypotension, and pressure that is pathologically high is hypertension. Both have many causes and can range from mild to severe, with both acute and chronic forms. Chronic hypertension is a risk factor for many complications, including peripheral vascular disease, heart attack, and stroke. Hypertension is generally more common, also due to the demands of modern lifestyles. Hypertension and hypotension go often undetected because of infrequent monitoring.

REVIEW OF RELATED LITERATURE

Literature reviews, if conducted carefully and presented well, add much to an understanding of problem selection and help place the result of the study in a historical perspective. Without review of the literature, it would be difficult to build a body of accepted knowledge on an educational topic.

Literature for the review includes many types of sources, professional journalists, reports, scholarly book and monograph and dissertations. In order to provide an understanding of an existing knowledge of a problem and

a rational for the research question, a literature reviews follow specific guidelines in the presentation and criticism of the literature. Since effective research is based upon past knowledge, this helps to eliminate the duplication of what has been done and provides useful hypothesis and helpful suggestions for significant investigation. A brief reporting of the review is given below:

Delextrat in the year 2008 conducted a study on, “Physiological Testing Of Basketball Players: Toward A Standard Evaluation Of Anaerobic Fitness.” The aim of this study was to examine whether the changes in the rules of the game instituted in 2000 have modified the physiological factors of success in basketball. The statistical difference in the anaerobic performances was assessed by Student's t test. The main results showed that, compared to average-level players, elite-level players achieved significantly better performances in the agility T test (+6.2%), VJ test (+8.8%), peak torques developed by knee extensors (+20.2%), and 1RM bench press (+18.6%, $p < 0.05$). In contrast, no significant difference between groups was observed on 20-m sprint, suicide run, and parameters of the Want ($p > 0.05$). These results emphasized the importance of anaerobic power in modern basketball, whereas anaerobic capacity does not seem to be a key aspect to consider.

Paul in the year 2012 conducted a study on, “The Effect Of Heart Rate Variability Biofeedback On Performance Psychology Of Basketball Players”. The purpose of the study was to find out Heart Rate Variability Biofeedback on Performance Psychology of Basketball Player. Coping with pressure and anxiety is an ineluctable demand of sports performance. Thirty basketball players of university level and above (both male and female) aged 18–28 years, who scored a minimum of 20 in state trait anxiety inventory, were randomly divided into three equal groups- Experimental (Biofeedback) group, Placebo group and Control (No Treatment) group. The heart rate variability biofeedback group received heart rate variability biofeedback training for 10 consecutive days for 20 min that included breathing at individual's resonant frequency through a pacing stimulus; Placebo group was shown motivational video clips for 10 consecutive days for 10 min, whereas No Treatment Control group was not given any intervention. Two way repeated measure ANOVA was applied to analyses the differences within and between the groups. Anxiety, coping self-efficacy, heart rate variability, respiration rate, and performance (dribbling, passing and shooting) at session 1, 10 and 1 month follow up were statistically significant in each group along with interaction of group and time ($p < 0.001$). Also, all the measures showed statistically significant inter group difference ($p < 0.05$). The findings are harmonious with existing data on heart rate variability biofeedback as a strategy for dealing with anxiety. The Placebo group showed improvement in self efficacy and performance post training. The Control group showed no change in any variable except performance. The results of the study support the idea that heart rate variability biofeedback lowers the anxiety and thus there seems to be a potential association between heart rate variability heart rate variability biofeedback and performance optimization.

Singh in the year 2012 conducted a study on “Studies Of Physiological Variables Of Basketball Players At Different Levels Of Competitions”. The purpose of this study is to analysis the differences of physiological variables of basketball players at different levels of competitions. This study is a part of doctorate study having a title “Study of Physiological, Body Composition and Psychomotor variables of Basketball Players at different levels of Competitions”. Study was conducted on 50 basketball male players (25 inter college and 25 under-19 School male basketball players) from. In This study physiological n variables were taken (i. Vital Capacity (FVC, PIF and PEF) ii. Vo2max). Results showed that there exists a significant difference between Inter College and Under-19 School Male Basketball Players among their Physiological variables. It showed that Vital Capacity and Vo2max. is Higher in Inter College Basketball Male Players when statistically compared with Under-19 School basketball male players.

Donald in the year 2007 conducted a study on “Physiological And Performance Characteristics Of Adolescent Club Volleyball Players”, the objective of this investigation was to examine the physical and performance characteristics of adolescent club volleyball players. Twenty-nine adolescent girls, aged 12 to 17 years (14.31 \pm 1.37) were participants in this investigation. All athletes were members of a competitive volleyball club. The following group values were obtained: height (HT) = 1.69 \pm 0.08 m, weight (WT) = 59.6 \pm 8.2 kg, body fat percentage (BF%) = 20.9 \pm 4.5, lean body mass (LBM) = 46.7 \pm 4.9 kg, modified sit and reach (MSR) = 38.7 \pm 7.1 cm, shoulder rotation (SR) = 29.4 \pm 5.6 cm, isometric hand grip (IHG) = 34.5 \pm 5.5 kg, isometric leg strength (ILS) = 77.4 \pm 18.1 kg, vertical jump (VJ) = 35.5 \pm 6.2 cm, standing broad jump (SBJ) = 178.8 \pm 20.3 cm, 1-minute sit ups (SU) = 47.0 \pm 6.7, T-test (TT) = 11.2 \pm 0.8 seconds., shuttle test (SHT) = 9.7 \pm 0.4 seconds, stork stand (SS) = 8.1 \pm 4.1 seconds, serving velocity (SVV) = 16.1 \pm 4.5 m[s-1], and spiking velocity (SKV) = 16.9 \pm 2.4 m[s-1]. For purposes of analysis, players were divided into 2 age groups: 12 to 14 years (group A) and 15 to 17 years (group B). Significant differences ($p < 0.05$) were found between age groups for the following values: HT, WT, LBM, IHG, ILS, SBJ, and SVV. Values for group

B were greater for each variable. Significant correlations include age and IHG ($r = 0.75$), age and ILS ($r = 0.51$), age and SBJ ($r = 0.67$), age and SVV ($r = 0.71$), LBM and IHG ($r = 0.90$), LBM and ILS ($r = 0.62$), LBM and SVV ($r = 0.58$), SVV and IHG ($r = 0.60$), and SKV and SS ($r = 0.60$). Our results suggest that age, experience, LBM, shoulder, hip, and thigh girths, strength, and balance are key physical performance characteristics of adolescent girls who play volleyball. Potentially, this type of information will allow coaches and athletes to identify physical and performance data specific to age groups for purposes of evaluation and player development.

Arija in the year 2011 conduct a study on, "Seasonal Changes In Jump Performance And Body Composition In Women Volleyball Players", González-Ravé, JM, Arija, A, and Clemente-Suarez V. Seasonal changes in jump performance and body composition in women volleyball players. *J Strength Cond Res* 25(6): 1492-1501, 2011—The present study aimed to evaluate the effects of different resistance training programs on jump performance and body composition of female volleyball players of the highest Spanish division league over 24 weeks of training. Ten female volleyball players (27.41 ± 4.94 years; 72.2 ± 8.5 kg; 179.7 ± 6.4 cm) completed 24 weeks of training and testing using a linear periodization, progressing from general conditioning (weeks 1-4), to hypertrophy (weeks 5-8), then to maximum strength and power (weeks 9-16) and concluding with a specific strength training (weeks 17-24). Body composition was measured using bioelectrical-impedance analysis, and neuromuscular capacity was estimated by squat jump, countermovement jump, Abalakov jump, and 2 repetition maxima (2RM). After initial evaluation (PRE), the players were tested on 3 different occasions (POST: fourth week, POST 1: eighth week and POST 2: 24th week) of the training cycle. Muscle mass increased on (4.5%, $p < 0.05$) and fat-free mass (4.38%, $p < 0.05$), whereas fat percent decreased (13.90%, $p < 0.05$). All neuromuscular performance tests were increased from PRE to POST 2 (ranging from 17.64 to 20.89%, $p < 0.01$) and from POST 1 to POST 2 (ranging from 4.62 to 7.56% $p < 0.01$). The results suggest that the volleyball players studied continued improving power and strength capacity together with body composition during the course of the study. Finally, as major application, these data provide normative and performance standards for female volleyball players.

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ORGANISATIONAL CLIMATE AND ADJUSTMENT OF DAY AND BOARDING SECONDARY SCHOOL STUDENTS OF KASHMIR

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ABSTRACT

Organisational climate is one of the most prominent factors responsible for the success of educational process. Research studies confirm that healthy and well sustained school organisational climate plays a vital role in the promotion of better academic achievement, adjustment and healthy development of students. The present study aims to study the organisational climate of day and boarding secondary schools of Kashmir and adjustment of day and boarding secondary school students. The sample for the present study comprised of 800 (400 Day and 400 Boarding) 11th and 12th class students from 55 (45 Day and 10 Boarding) Secondary Schools selected by using Disproportionate Simple Random Sampling technique. School Climate Scale (SCS-SSIA) 2015 by Dr. Shivendra Pratap Singh and Dr. Ali Imam and Adjustment Inventory for School Students (AISS-SS) 2017 by A.K.P. Sinha and R.P. Singh were used to collect the data from the sample subjects. The findings of the study revealed that boarding secondary schools have better school climate as compared to day secondary schools. It was also revealed by the study that boarding school students have better adjustment than their counterparts.

Keywords: Organisational Climate, Adjustment, Day and Boarding Secondary Schools.

Organisational Climate is just like the personality of an individual with varied factors that differentiate one institution from others. The issue of school climate and the way it affects the student and the learning environment has been a concern for the educational experts for so many years. It is a well established fact that the environment right from the beginning of a child modifies and intermingle with heredity to outline the individual and to control the level to which his/her maximum potential will be realized. As the individuals have characters, so too do schools; a school climate may be thought of as the personality of a school. According to Forehand and Gilmer, "Climate consists of a set of characteristics that describe an organisation, distinguish it from other organisations are relatively enduring over time and influence the behaviour of people in it". School climate has been characterised in four different ways: scholastic environment, community environment, feeling of safety, and institutional environment. These four general classifications give a comprehensive and the most exhaustive conceptualizations of the nature of the school atmosphere.

Adjustment is a state of balance between an individual and his environment by developing a harmonious relationship in such a way where most of the needs are satisfied in a positive manner (Veena et al., 2003). The satisfaction or gratification of these needs must not be only in accordance to the personal characteristics but at the same time social and cultural considerations must be taken care of. The consensus between the needs and gratification of these needs leads to the healthy adjustment and failing to develop a consensus often leads to maladjustment which in turn leads to mental abnormalities.

The review of the last few years of research studies shows a greater interest towards the academic environment along with other related variables. It has been confirmed by these research studies that healthy and well sustained school organisational climate is very essential for the promotion of good academic achievement, adjustment and healthy development of students. A good school climate plays an equal role in the promotion of the retention of the teachers, which itself enhances student success (Center for Social and Emotional Education, 2007; Cohen, McCabe, Michelli, & Pickeral, in press; Zins, Weissberg, Wang, & Walberg, 2004). School climate is one of the fundamental factors responsible for the success of the school. In the fifth Survey of Educational Research, Volume I, T.V Rao and B. Sridhar, mentioned in page no.717 that "*there is a need to conduct empirical research on different issues including institutional climate, effectiveness of leadership, administrative problems, teacher satisfaction, student attitudes and achievement.*" Keeping this statement in mind an analysis of the research studies of more than ten years was done and substantial evidences were found that positive school climate is the most important factor that contributes to the scholastic achievement of the students. Based on the literature scanning of different surveys, journals and other research inputs; it was also found that least research has been conducted in the relationship of the above stated variables. Hence the investigator found the selection of the proposed research study justified. The study is a modest effort to assess the organisational climate of Day and Boarding secondary schools and adjustment of Day and Boarding secondary school students of Kashmir.

OBJECTIVES

The following objectives have been formulated for the present study:

1. To assess the organisational climate of Day and Boarding secondary schools of Kashmir.
2. To assess the levels of adjustment of Day and Boarding secondary school students of Kashmir.
3. To compare Day and Boarding secondary school students on adjustment.

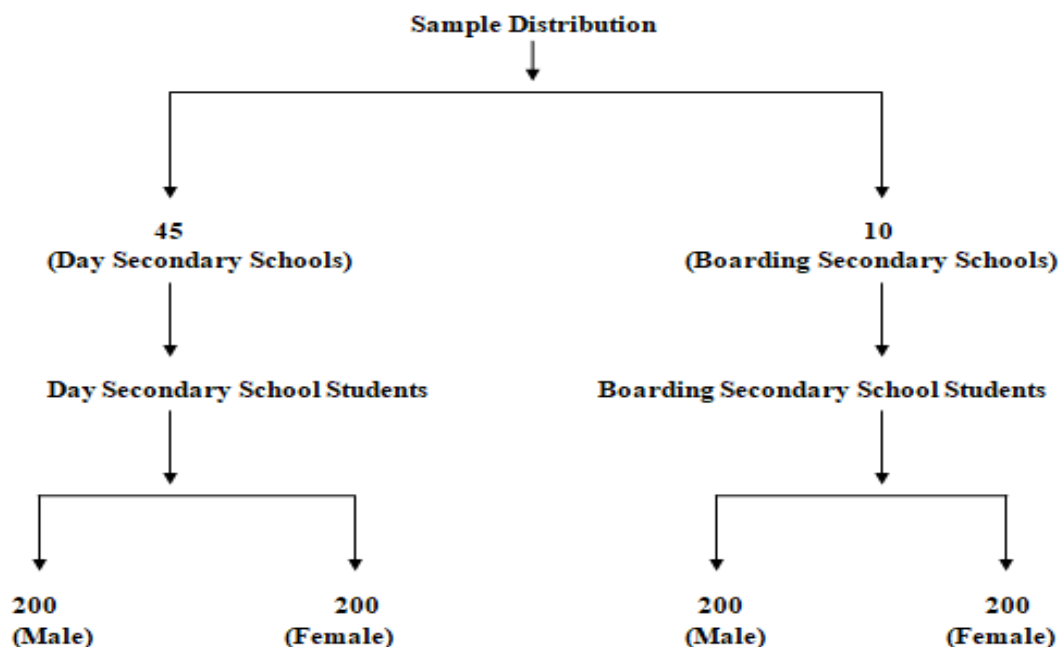
HYPOTHESIS

The following hypotheses were formulated for the present study:

1. Day and Boarding secondary school students differ significantly on overall dimensions of adjustment.

METHODOLOGY

In the present investigation, the descriptive survey type method of research was used by the investigator to achieve the selected objectives. The sample in this study was confined to the students of secondary schools of ten districts of Kashmir division of Jammu and Kashmir. A sample of 800 (400 Day and 400 Boarding) 11th and 12th class students from 55 (45 Day and 10 Boarding) Secondary Schools were selected by using Disproportionate Simple Random Sampling technique.



Tools Used: The investigator after screening a number of available tools found it suitable to select the following tools for the collection of data:

- School Climate Scale (SCS-SSIA) 2015 by Dr. Shivendra Pratap Singh and Dr. Ali Imam
- Adjustment Inventory for School Students (AISS-SS) 2017 by A.K.P. Sinha and R.P. Singh

ANALYSIS AND INTERPRETATION

Table-1: Showing the percentage of the levels of School climate of Day and Boarding Secondary Schools (N=55)

Levels of School Climate	Day Schools		Boarding Schools	
	N	Percentage	N	Percentage
Extremely Favourable	4	8.89%	2	20.00%
Highly Favourable	7	15.55%	3	30.00%
Above Average	14	31.11%	3	30.00%
Average	10	22.22%	2	20.00%
Below Average	6	13.33%	-	-
Highly Unfavourable	4	8.89%	-	-
Extremely Unfav.	-	-	-	-
Total	45	100%	10	100%

Table 1 shows the percentage of the levels of School climate of Day and Boarding Secondary Schools. It reveals that the Secondary schools possess varied levels of school climate. It was observed that 30% Boarding Secondary Schools have highly favourable climate whereas only 15.55% Day Secondary Schools have this level of climate. 20% boarding secondary schools were found to possess extremely favourable climate and only 8.89% Day Secondary Schools possess this level of school climate. It was also observed that 31% Day Secondary Schools and 30% Boarding Secondary schools have above average level of school climate. 22.22% Day Secondary Schools were found to possess Average level of school climate and only 20% Boarding Secondary Schools fall in this category. 13.33% and 8.89% Day Secondary Schools were found to possess below average and highly unfavourable levels of school climate respectively, where as no boarding school fall in this category.

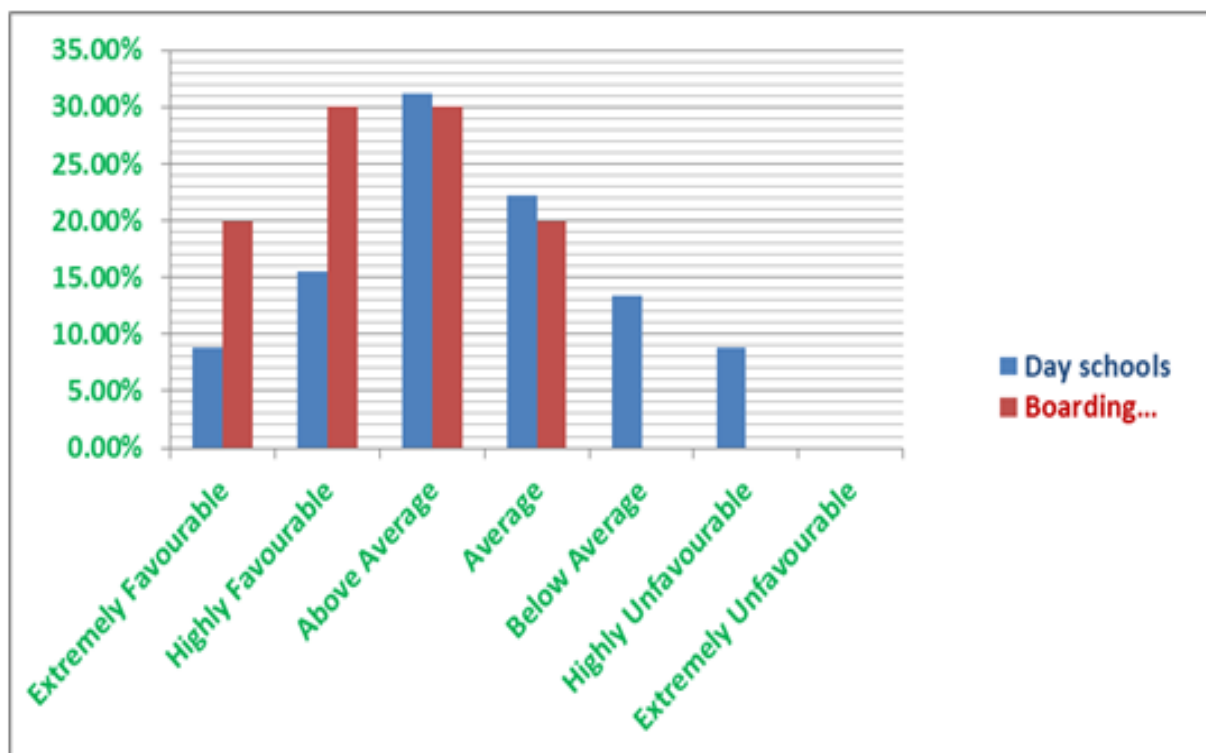


Fig-1: Showing the percentage of the levels of School climate of Day and Boarding Secondary Schools (N=55)

Table-2: Showing the percentage of the levels of Adjustment among Day and Boarding Secondary School students (N=800)

Levels	Day		Boarding	
	N	Percentage	N	Percentage
Extremely High Adjustment	10	2.5%	22	5.5%
High Adjustment	68	17.00%	101	25.25%
Above Average Adjustment	201	50.25%	205	51.25%
Average Adjustment	90	22.50%	61	15.25%
Below Average Adjustment	20	5.00%	8	2.00%
Unsatisfactory Adjustment	6	1.50%	2	0.50%
Extremely Unsatisfactory Adjustment	5	1.25%	1	0.25%
Total	400	100%	400	100%

Table 2: shows the percentage of levels of adjustment among Day and Boarding secondary school students. It was observed that the students possess varying levels of adjustment. It was observed that 51.25% of the Boarding and only 50.25% Day secondary school students possess above average level of adjustment. 25.25% of boarding school students possess high level of adjustment whereas only 17.00% Day secondary school students possess this level of adjustment. 5.50% of Boarding secondary school students possess extremely high level of adjustment whereas only 2.50% of Day secondary school students possess extremely high level of adjustment. The statistical data also reveal that 22.50% Day and only 15.25% Boarding secondary school Students possess Average level of adjustment. 1.50% and 1.25% Day Secondary School students possess unsatisfactory level and extremely unsatisfactory level whereas only 0.50% and 0.25% Boarding secondary school students possess unsatisfactory level and extremely unsatisfactory level of adjustment respectively.

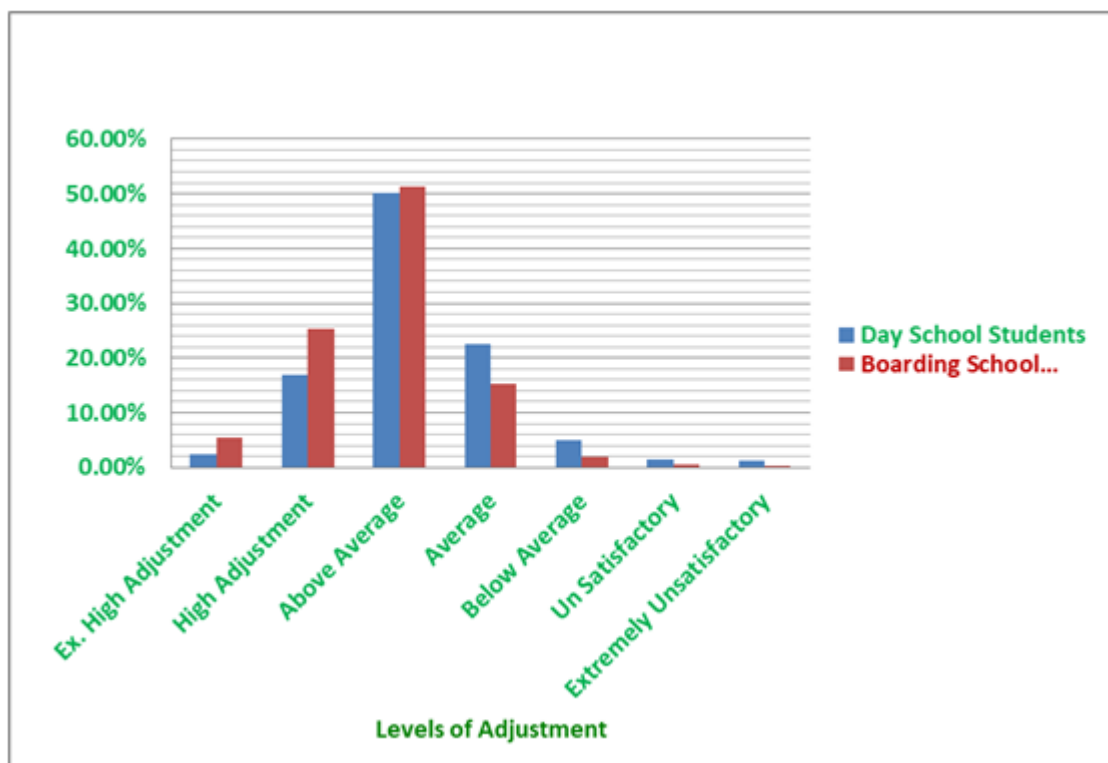


Fig-2: Showing the percentage of the levels of Adjustment among Day and Boarding secondary school students (N=800)

Table-3: Showing the mean comparison between Day and Boarding secondary school students on Emotional dimension of Adjustment:

Group	N	Mean	S.D	t-Value	Level of Sig.
Day School Students	400	16.97	3.21	1.84	Not Significant
Boarding School Students	400	17.32	2.22		

The perusal of the above table shows the mean comparison of means among students of Day and Boarding secondary schools on emotional dimension of adjustment. The table clearly confirms that there is no significant difference between the two groups on emotional dimension, confirming that students of both Day and Boarding secondary schools have almost similar emotional adjustment. Though the mean difference favours Boarding secondary school students but the difference failed to arrive at any level of confidence.

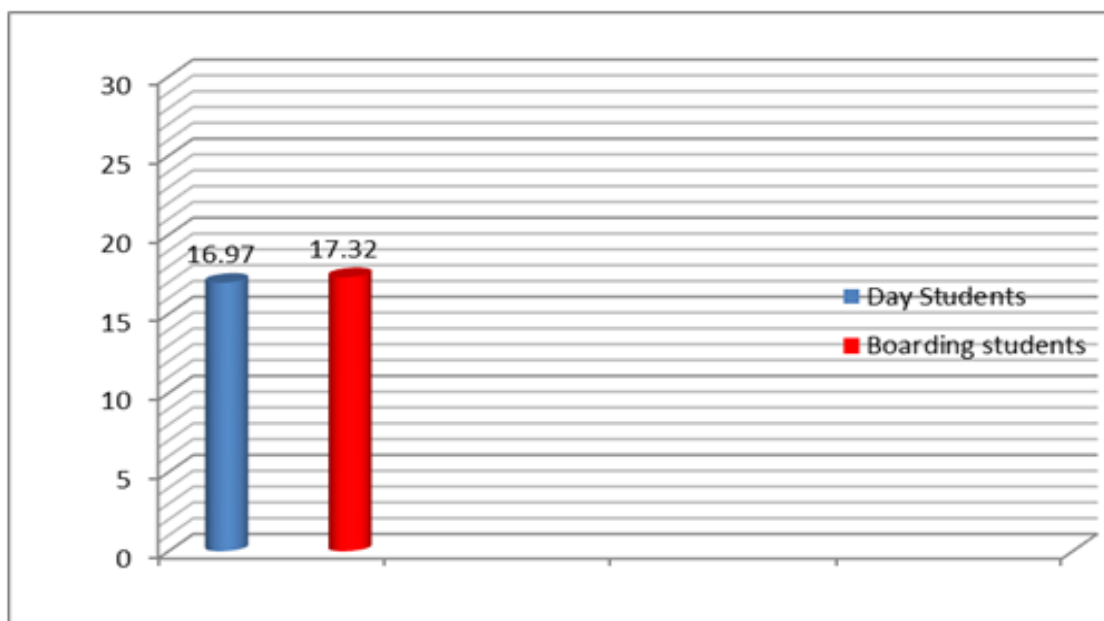


Fig-3: Graphical representation of mean scores of Emotional dimension of adjustment of Day and Boarding secondary school students

Table-4: Showing the mean comparison between Day and Boarding secondary school students on Social dimension of Adjustment:

Group	N	Mean	S.D	t-Value	Level of Significance
Day School Students	400	19.67	3.42	1.35	Not Significant
Boarding School Students	400	20.02	4.11		

A quick look at the above table shows the mean difference between Day and Boarding secondary school students on social dimension of adjustment. The statistical data reveals that there is no significant difference between the Day and Boarding secondary school students on social adjustment confirming that both the group of students have almost similar social adjustment. Though the mean difference favours the Boarding schools but failed to arrive at any level of confidence.

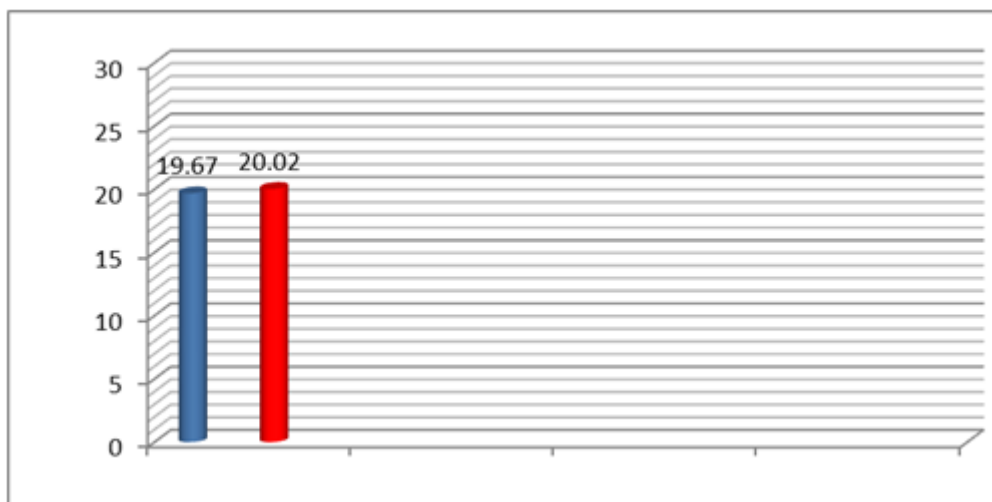


Fig-4: Graphical representation of mean scores of Social dimension of adjustment of Day and Boarding secondary school students

Table-5: Showing the mean comparison between Day and Boarding secondary school students on Educational dimension of Adjustment:

Group	N	Mean	S.D	t-Value	Level of Significance
Day School Students	400	16.01	3.61	4.72	Significant at 0.01 level
Boarding School Students	400	17.31	4.21		

The perusal of the above table shows the mean difference between Day and Boarding secondary school students on educational dimension of adjustment. The statistical data confirms significant difference between the two groups on educational dimension of adjustment and the difference was found to be significant at 0.01 levels. The mean difference favours the Boarding secondary school students which confirms that the Boarding secondary school students have better educational adjustment than Day secondary school students.

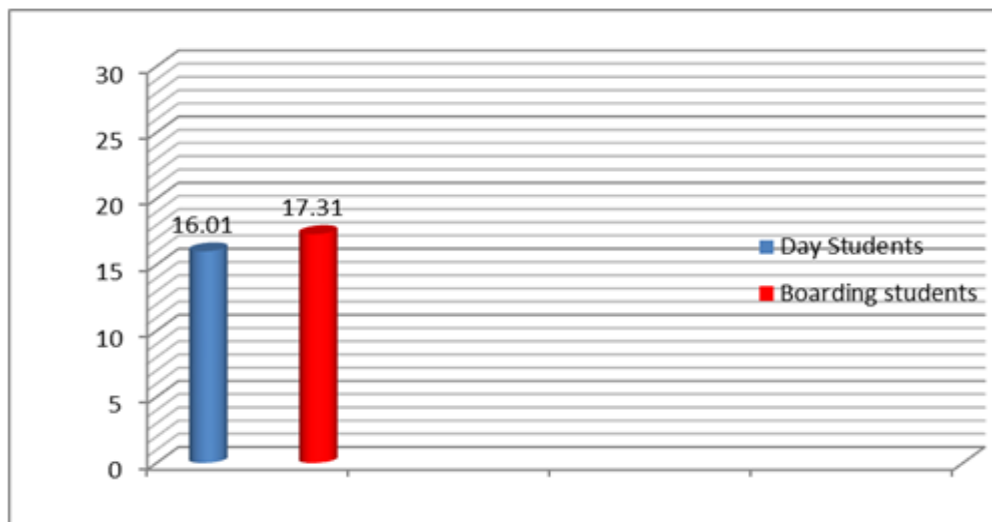


Fig-5: Graphical representation of mean scores of Educational dimension of adjustment of Day and Boarding secondary school students

Table-6: Showing the mean comparison between Day and Boarding secondary school students on overall dimensions of Adjustment:

Group	N	Mean	S.D	t-Value	Level of Significance
Day School Students	400	52.17	6.51	2.31	Significant at 0.05 level
Boarding School Students	400	53.12	5.26		

The perusal of the above table shows the mean comparison between Day and Boarding secondary school students on overall dimension and the difference was found to be significant at 0.05 levels of significance. As reflected in the statistical table, the mean score favours the Boarding secondary school students which confirm that Boarding secondary school students were found to have better adjustment than the Day secondary school students. *In the light of the above evidences the hypothesis No. 1 which reads as "Day and Boarding secondary school students differ significantly on adjustment" stands accepted.*

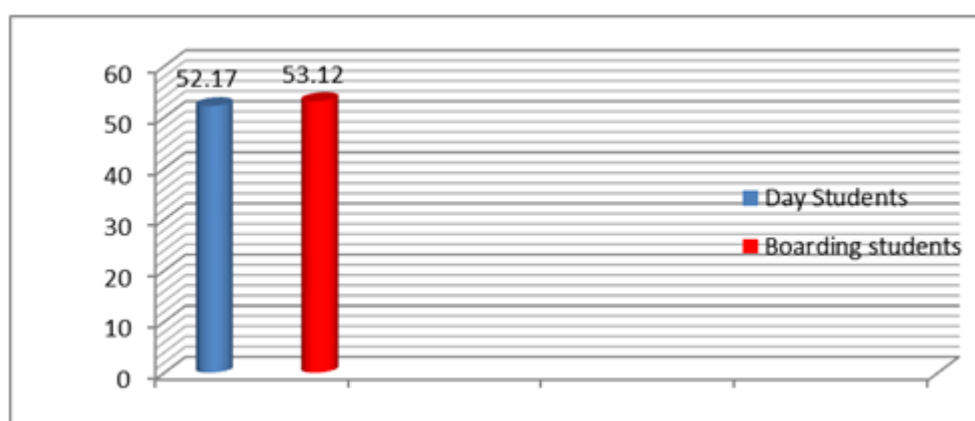


Fig-6: Graphical representation of mean scores of overall adjustment of Day and Boarding secondary school students

CONCLUSION

The success of any educational system is based on the quality of the organisational climate of the educational institutions. If an institution aims to improve the scholastic achievement of the students, it must improve its school climate-physical, interpersonal relationships and institutional environment. The school climate not affects only the academic performance of the students but it also has imprints on the adjustment as well as other factors of the students. The safe, caring and participatory school climate promotes greater attachment of the students to the school and improves their adjustment in the school setting. The organisational climate of the schools should be developed in such a way as the students should feel the school safe – physically, socially, emotionally and intellectually so that they find the school as a pleasant place of learning.

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STUDY ON MENTAL TOUGHNESS AND AGGRESSIVE TENDENCY AMONG DIFFERENT TEAM GAME PLAYERS

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ABSTRACT

The study aimed to compare the Mental Toughness and Aggressive Tendency among Different Team Game Players. A total of sixty (60) subjects, comprising 60 subjects and 20 subjects were selected from each game i.e. (20) from Volley ball, (20) from kabaddi and (20) from cricket. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-25 years. To analyze the Mental Toughness and Aggressive Tendency Of the subjects of all the groups i.e. volleyball, Cricket and kabaddi players, The standard questionnaire of aggression tendency designed by Dr. Rajeev Lochan Bhartwaj has been used for the collection of data. It contains 28 items. The standard questionnaire of Mental Toughness designed by Dr. Alan Goldberg has been used for the collection of data. The analysis of data was done by using statistical technique 't'- test for finding the significance difference of Mental Toughness and Aggressive Tendency among Different Team Game Players and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: Mental Toughness, Aggressive Tendency, volleyball, kabaddi, Cricket

INTRODUCTION**Introduction of Mental Toughness**

Mental toughness is a collection of attributes that allow a person to persevere through difficult circumstances (such as difficult training or difficult competitive situations in games) and emerge without losing confidence. In recent decades, the term has been commonly used by coaches, sport psychologists, sport commentators, and business leaders.

Mental toughness is a controversial term, in that many people use the term liberally to refer to any set of positive attributes that helps a person to cope with difficult situations. Coaches and sports commentators freely use the term mental toughness to describe the mental state of athletes who persevere through difficult sport circumstances to succeed. For example, it is often simply applied as a default explanation for any victory, which is highly problematic as an attribution. Only within the past ten years has scientific research attempted a formal definition of mental toughness as a psychological construct and criticisms about the lack of specificity of this umbrella term abound. For example, Moran (2012) states that considerable caution is required in attempting to draw conclusions about the nature, characteristics, determinants and development of mental toughness in sport because of the theoretical nature of the definitions, which owe more to anecdotal plausibility than to empirical research.

Aggression

Aggression is a part of human behaviour and is necessary for an individual to live and struggle for higher achievements. Struggle for supremacy, dominance, and excellence in sports obviously involves aggression. Aggression in one form or the other is inevitable and inescapable in sports activities. When hostility takes over aggression, the situation becomes alarming and it becomes an anti-social behaviour.

Aggression in sports

In sports today, aggression plays a major role. According to research it is apparent that sports is perhaps the only setting in which acts of inter personal aggression are not tolerated, but enthusiastically applauded by large segments of society, e.g., Tanenbaum, Stewart, Singer and Duda, (1996). Tenebaum, et.al. 1996 define aggression as the infliction of an aversive stimulus, either physical, verbal, or gestural upon one person by another. This definition encompasses two distinct types of aggression, hostile and instrumental. Tenebaum and colleagues describe hostile aggression as having a principal reward, or intent, to inflict pain upon another for the individuals own sake. In instrumental aggression the major reinforcement is the achievement of a subsequent goal. Instrument aggression in sports is welcomed as it is beneficial to support both individual and team success, where hostile aggression is unhealthy and can be detrimental to all aspects of a given sport. Professional sports are becoming increasingly more violent. Social psychologists have discerned a number of influences that may be involved. Sports players have scripts for resolving problems with physical action, thus when problems arise, they immediately seek to act, aggressively if necessary. Another influence is the violence inherent in our society and the media.

Procedure and Methodology

A total of sixty (60) subjects, comprising 60 subjects and 20 subjects were selected from each game i.e. (20) from Volley ball, (20) from kabaddi and (20) from cricket. The Subjects were selected by using simple random sampling. The age of the subjects ranged between 18-25 years

Equipments Used For Collection of Data

The standard questionnaire of aggression tendency designed by Dr. Rajeev Lochan Bhartwaj has been used for the collection of data. It contains 28 items. The standard questionnaire of Mental Toughness designed by Dr. Alan Goldberg has been used for the collection of data.

Table No-1: Mean value Of Aggressive Tendency Among Different Team Game Players.

Name of Group	Mean of Aggressive Tendency
Kabaddi	91.75
Cricket	89.03
Volleyball	85.05

From the above given table it is clear that the Mean of Aggressive Tendency the I group (Kabaddi) is 91.75, Mean of the II group (Cricket) is 89.03, Mean of the III group (Volleyball) is 85.03.

There is Mean difference in Aggressive tendency between different team game players. Whether it is significant or not it can be shown by using special statistical technique 'F' test (ANOVA).

Graph-1: Graphical Representation of Mean of Aggressive Tendency among different team game players

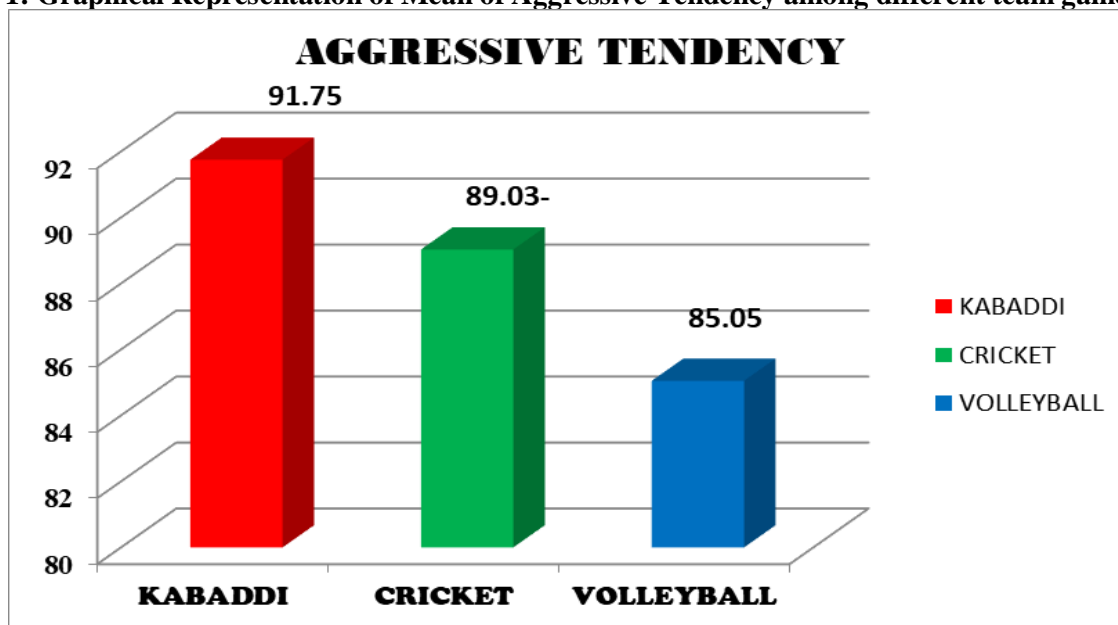


Table No-2: Showing one way Analysis of Variance (ANOVA) in Aggressive Tendency among different team game players.

Source of variance	Df	Sum of squares	Mean	F	F
Between Groups	K-1 3-1=2	7852	229.85	1.772	3.15
Within Groups	N-K 60-3=57	7392	129.7		

Table-2 reveals that 'F' at degree of freedom between groups (df_b) is shown by the formula $K-1$ where 'K' is number of groups which are 3 so it becomes $3-1=2$.

'F' at degree of freedom within groups (df_w) is shown by the formula ' $N-K$ ' where 'N' is total number of subjects in all groups and 'K' is number of groups which becomes $60 - 3 = 57$. So 'F' test at 2 and 57 is 3.15 which is called Tabulated 'F'.

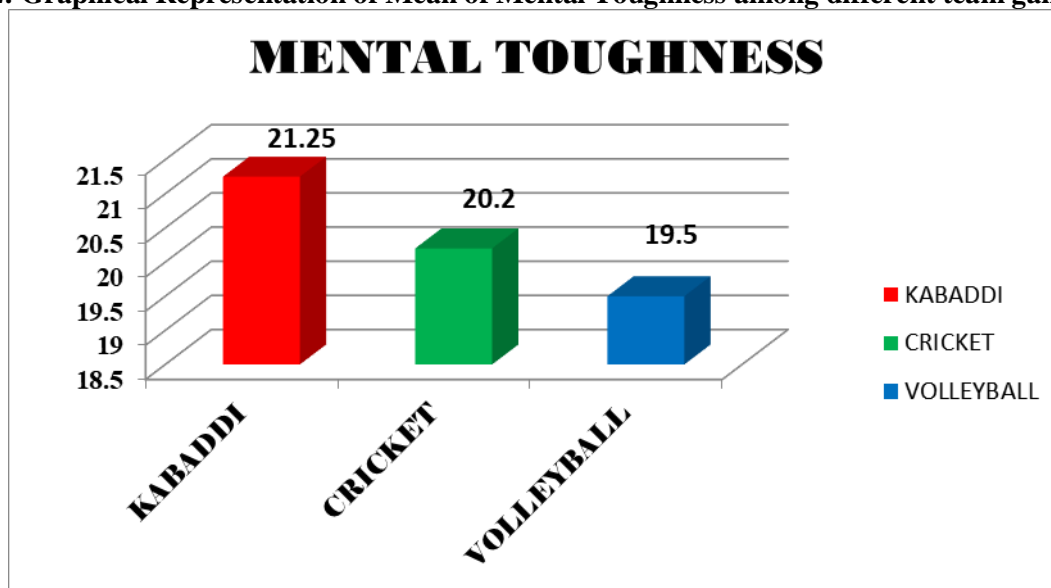
In the given table the value of Tabulated 'F' is 2.76 and the value of Calculated 'F' is 1.772 which is less than tabulated 'F' (3.15) at 0.05 level of significant so it is said that there insignificant difference in Aggressive tendency among various groups of team game players and the groups were as under Volleyball, kabaddi and cricket players of central university of Kashmir).

Table No-3: Mean of Mental Toughness of various Team game players.

Name of Group	Mean of Mental Toughness
Kabaddi	21.25
Cricket	20.2
Volleyball	19.5

From the above given table it is clear that the Mean of the I group (**Kabaddi**) is 21.25, Mean of the II group (Cricket) is 20.2 and Mean of III group (Volleyball) is 19.5.

There is Mean difference in Mental Toughness among different team game players. Whether it is significant or not it can be shown by using special statistical technique 'F' test (ANOVA)

Graph-2: Graphical Representation of Mean of Mental Toughness among different team game players**Table No-4: Showing one way Analysis of Variance (ANOVA) Mental Toughness among different team game players.**

Source of variance	Df	Sum of squares	Mean Variance	F Calculated	F Tabulated
Between Groups	K-1 3-1=2	642.92	15.51	1.44	3.15
Within Groups	N-K 86-3=57	611.95	10.73		

Table-9 reveals that 'F' at degree of freedom between groups (df_b) is shown by the formula **K-1** where 'K' is number of groups which are 4 so it becomes $4-1=3$.

'F' at degree of freedom within groups (df_w) is shown by the formula '**N-K**' where 'N' is total number of subjects in all groups and 'K' is number of groups which becomes $60 - 3 = 57$. So 'F' test at 2 and 57 is 3.15 which is called Tabulated 'F'.

In the given table the value of Tabulated 'F' is 3.15 and the value of Calculated 'F' is 1.44 which is greater than tabulated 'F' (3.15) at 0.05 level of significant so it is said that there is insignificant difference in Mental toughness of various groups of team game players and the groups were as under Volleyball, Kabbadi and cricket players of central university of Kashmir.).

CONCLUSION

With the limitations of the study and from the statistical analysis of the collected data it is concluded that there was found insignificant difference in the both Mental Toughness And Aggressive Tendency in all forms among different team game players of central university of Kashmir while applied ANOVA.

The researcher initially pre assumed that there will be a significant difference in the Mental Toughness And Aggressive Tendency among different team game players of central university of Kashmir. After the statistical analysis interpretation of data it was found that there is insignificant difference in both Mental Toughness And Aggressive Tendency among different team game players of central university of Kashmir because in major

cases the tabular value exceeded than calculated 'F' at the level of significance 0.05. Hence the researchers pre assumed has been rejected.

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