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## OUR ANNUAL SEMINAR AT GLANCE

Sr. No.	Date	Theme	Venue
First Annual Seminar	12 <sup>th</sup> Feb 2004	Managing Structural Changes in Financial Sector	Hotel Grand Maratha
Second Annual Seminar	12 <sup>th</sup> Nov. 2005	Sustaining Growth in An Organisation	Hotel Ra mada Plaza Palmgrove
Third Annual Seminar	4 <sup>th</sup> Nov. 20 06	Developing& Implementing Growth Strategies	Hotel Taj Land End
Fourth Annual Seminar	19 <sup>th</sup> Dec. 2007	Leading Change in & Innovation	Hotel Grand Hyatt
Fifth Annual Seminar	8 <sup>th</sup> Nov. 2008	India Inc- Challenges Next	Hotel Taj Lands End
Sixth Annual Seminar	11 <sup>th</sup> Dec. 2009	Creating Winning Organisations (Pragati)	World class Atharva Auditorium, 3 <sup>rd</sup> Phase AET Campus,
Annual Conference	16 <sup>th</sup> Jan. 2010	Competing in the Times of Uncertainty (Aswamedh)	World class Atharva Auditorium, 3 <sup>rd</sup> Phase AET Campus,
Annual Conference	4 <sup>th</sup> & 5 <sup>th</sup> Feb. 2011	Emerging issues in global economy and management-Challenges & Strategies	World class Atharva Auditorium, 3 <sup>rd</sup> Phase AET Campus,
SeventhAnnual Seminar	11 <sup>th</sup> Feb. 2011	Transforming Organizations: Emerging Trends(Parivartan)	Presentation Hall, 3 <sup>rd</sup> Phase, AET campus,
Annual Conference	12 <sup>th</sup> Nov.2011	“Global Turmoil - Opportunities For India”	World Class Auditorium,3 <sup>rd</sup> Phase, AET campus,
Panel Discussion	4 <sup>th</sup> Feb. 2012.	“Gender Inclusivity In India-Building An Empowered Organization”	Seminar Hall, 3 <sup>rd</sup> Phase, AET campus, Malad-(W).
Annual conference	12 <sup>th</sup> Jan.2013	Panel discussion on “Reassuring Confidence In India”Road Map To recovery	Seminar hall, 3 <sup>rd</sup> phase, AET campus, Malad-(W)
Atharva International Research Conference	19th July 2014	“Emerging Patterns of Innovation in Business: Challenges & Strategies”	Seminar hall, 3 <sup>rd</sup> phase, AET campus, Malad-(W)
Annual seminars- 12 <sup>th</sup> Annual Conclave	17 <sup>th</sup> Jan. 2015	“Putting India Back On A High Growth Trajectory”	Seminar Hall 3 <sup>rd</sup> Phase, AET campus, Malad(W)
Annual Conclave	13 <sup>th</sup> Feb. 2016	"Transforming India "	Seminar Hall 3 <sup>rd</sup> Phase, AET campus, Malad(W)
Annual Conference	4 <sup>th</sup> Feb. 2017	"Buildingworld class Indian Companies & Competence: Strateging For The Future "	World Class Auditorium,3 <sup>rd</sup> Phase, AET campus,
Atharva International Research Conference	1 <sup>st</sup> Sept. 2018	Business & Environment : Challenges & Prospects	Seminar Hall 3 <sup>rd</sup> Phase, AET campus, Malad(W)
Annual Conference	13 <sup>th</sup> Oct. 2018	Digital Transformation in the Corporate world : Strategies for success	Seminar Hall 3 <sup>rd</sup> Phase, AET campus, Malad(W)

## MESSAGE, FROM THE EXECUTIVE PRESIDENT.



### **Shri Sunil Rane**

Executive President, Atharva Group of Institutes  
Founder Secretary, Atharva Educational Trust

Atharva is a symbol of excellence and the Atharva Institute of Management Studies(AIMS) is an integral part of the success story of the Atharva Brand. Within a short span of time, AIMS has evolved into one of the premier management institutes in the country. The credit for that goes to our students and faculty.

India is a land of a million opportunities and a cradle of civilisation. Throughout the sands of time ancient India has been a symbol of culture, innovation and knowledge. This is the land that gave birth to philosophies that have changed our perspectives. But modern India is a young Nation nestled in the womb of an ancient civilisation. Today's India faces several challenges that can be only met if we all work together and build a new society based on exclusiveness, equal opportunity and freedom to excel. Also to translate the real potential of our ancient land we need the power of youth. Through every generation builds on the strong foundation of their predecessors and the youth of this nation are ready to take over with a promise which will surely turn into reality. Each year, a fresh batch of students join AIMS to further their career and unlock their true potential. With every passing batch, the Atharva brand contributes to society by infusing young creative talent into the veins of the industrial world.

Effective and visionary governance is the key and we at Atharva are committed to professional management of education. All members of the Faculty play a critical role in administering the diverse academic and non-academic activities of the institute. In fact, the empowerment of the Management and the Faculty has been the propelling force behind the high quality learning experience at AIMS. Our strength is also in the unique blend of faculty with academic and industry experience. The Institutes have collaborations with the best in the Industry from every sector. This has been a huge competitive edge that we have enjoyed over others and has greatly influenced our approach to education.

Atharva is committed to providing best-in-class standards and world class infrastructure and we really understand that the soul of a truly global management institute is in the strength of its Academics, Industry Interface and opportunities for cross-market and cross-country exposure. Added to that is the healthy competitive spirit on the campus among students... to excel in seminars, competitions and simulated exercises which have all gone a long way in building the AIMS value proposition. The Atharva brand of Excellence actually belongs to every Atharvite who steps out of our portals to face the world with confidence. Your passion is our fuel and we are committed to be a part of you... throughout your life....even as you take on the world! All the Best!



Atharva Educational Trust

# **Atharva**

## ***A Journal of Management Research***

**Vol.10 No.1 & 2,  
December 2018**

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## **EDITORIAL**

Managing the triple bottom line i.e. People, Planet & Profit is absolutely crucial for business sustainability. It helps organizations to manage their economic, social & environmental opportunities & risks. It is imperative that we as “Human” race, have to use resources which are available today, wisely, making sure that we leave some of them for our future generations. Thus sustainable development is crucial for society, economy & environment. There are major challenges to this perspective. But several ambitious, collaborative action-oriented strategies have evolved over a period of time. Atharva International Research Conference - 2018 aimed at providing a platform for academia, industry professionals to share, deliberate & discuss various perspectives on the theme - “Business & Environment: Sustainability Challenges & Prospects.

The conference was held on 1st September 2018 in AET Campus.

We present select papers presented during the conference, in this issue of our Journal.

Happy Reading!

Best Wishes & Regards

### **Editorial Team**

Articles presented in this issue communicate exclusively the individual view points of respective contributors.



# Atharva

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# **A Report On The Research and Application of RFID Technologies in Highway's Electronic Toll Collection System**

**Rajneesh Shukla**

## **Abstract:**

Typical methods for collecting tolls are manual collection, automatic toll collection via electronic toll collection (ETC). Manual toll collection is the simplest form of toll collection, in which a collector operating from a booth collects the toll. ETC is the most complex and latest method for collecting tolls. ETC lanes improve the speed and efficiency of traffic flow and save drivers' time. An ETC system is capable of electronically charging a toll to an established customer account. The system can determine whether a passing car is registered, automatically charging those vehicles, and alert the local highway patrol about users that are not registered. The ETC method allows vehicles to pass through a toll facility without requiring any action or stopping by the driver.

## **Introduction:**

On the successful completion of a registration process a RFID tag, that uniquely identifies the vehicle, will be issued and affixed on the windshield the vehicles. The vehicle then would be able to electronically pay toll fees at all the dedicated ETC lanes without stopping at toll plazas The ETC services are available to road users as prepaid service, and the ETC accounts can be recharged using various payment options available at Point of Sales or through online portal. The project owners enrolling with IHMCL's nation-wide ETC program will have to set up dedicated ETC lanes at their toll plaza, which would be integrated with the central clearing house(CCH).

When a vehicle approaches ETC lane, the plaza ETC systems will check whether the vehicle is mounted with valid RFID tag registered with ETC program and has positive account balance. ETC transaction files are generated for vehicles with valid tag and positive account balance and the vehicle would be allowed to pass. Other vehicles entering ETC lanes would be guided out via ejection lane mechanism to adjacent manual cash lanes, where they would be allowed to pass after paying toll fee and a penalty. The ETC transaction files generated at toll plazas are sent to central clearing house(CCH) for debiting appropriate toll fee from the account of registered vehicle and crediting the same to respective toll collection agency. The road users will also get SMS alert for each ETC transaction.

Typical methods for collecting tolls are manual collection, automatic toll collection via electronic toll collection (ETC). Manual toll collection is the simplest form of toll collection, in which a collector operating from a booth collects the toll. ETC is the most

complex and latest method for collecting tolls. Although it has been in use for more than 20 years, ETC continues to evolve. ETC lanes improve the speed and efficiency of traffic flow and save drivers' time. An ETC system is capable of electronically charging a toll to an established customer account. The system can determine whether a passing car is registered, automatically charging those vehicles, and alert the local highway patrol about users that are not registered. The ETC method allows vehicles to pass through a toll facility without requiring any action or stopping by the driver.

Conceptually, ETC works by determining whether the vehicles passing through toll collection points are enrolled in the program, alerts enforcers for those that are not, and electronically debits the accounts of registered vehicles without requiring them to stop.

When the vehicle enrolls with an ETC program an On-Board Unit, which contains information about that particular vehicle, is mounted on the vehicle. The Road-Side Units at toll collection points communicate with On-Board Units to extract vehicle information, which is then further used to process toll transactions.

### **How electronic toll collection work in India.**

- Electronic Toll Collection (ETC) system in India uses passive radio frequency identification technology (RFID).
- RFID tag called FASTag is mounted on the vehicle's windscreen.
- As the vehicle reaches the toll plaza, a unique identification number that is embedded on the tag is read by road side RFID reader.
- This unique number is sent to a central computer.
- Applicable toll amount is deducted from a prepaid account that is linked to that particular FASTag.

There are dedicated ETC lanes on toll plazas to aid faster traffic flow of vehicles using FASTag. Vehicles can do toll transaction without stopping thus making the process faster and more efficient. This has many more advantages like reducing congestion at plazas, saving fuel, reducing travel time and so on.

### **Detailed explanation**

ETC system relies on four major components: automated vehicle identification (AVI), automated vehicle classification (AVC), transaction processing, and violation enforcement.

**(i) Vehicle identification:** When a vehicle approaches the ETC lane, the system installed at the plaza communicates with FASTag and checks for card validity and account balance.

Vehicles with valid tag (Tag registered with ETC program) and positive account balance are allowed to cross the intersection.

Other vehicles entering ETC lanes are guided out via ejection lane mechanism to adjacent manual cash lanes, where they would be allowed to pass after paying toll fee and a penalty.

**(ii) Vehicle classification:** Toll charges levied on a vehicle depend on its class- Car/Jeep/Van, Truck, Bus, LCV, Multi Axle vehicles. AVC (automatic vehicle classification) is a key element for assessment of the correct toll tax at toll plazas and ensures accurate vehicle detection and classification.

The classification is based on axles, distance between axles, single and double wheels and multiple vehicle heights. This is done using infra-red sensors installed at the toll plaza.

If the AVC class matches the vehicle class associated with that FASTag the vehicle is successfully classified, else there is a class mismatch. Class mismatch is verified by looking at video recording captured by lane camera.

**(iii) Transaction Processing:** This requires setting up of a Central Clearing House (CCH) for clearing and settlement of toll transactions.

ETC transaction file is generated for all vehicles that cross the plaza with valid tag and positive account balance.

These ETC transaction files are relayed to Central Clearing House (CCH) for debiting appropriate toll fee from the pre-paid account of registered vehicle and crediting the same to respective toll collection agency.

Text message is sent to the vehicle owner for each transaction.

**(iv) Violation handling:** Stolen vehicles, vehicles with class mismatch, vehicles with insufficient balance and those that run through (cross without payment in cash lane) are blacklisted. List of blacklisted vehicles is shared with all toll plazas. These vehicles are stopped when they cross the next toll collection point and appropriate steps are taken.

### **Benefits**

Ministry of Road Transport and Highways has aimed to make all toll-plazas on national highways across India ETC enabled. This will greatly enhance user experience and enable fuel saving worth Rs 86,000 crore.





#### Cash Back up to 7.5%

You can avail a cashback of 7.5% on all National Toll payments using FASTag in FY 2017-18.



#### SMS and Email Alert of Transactions

Customer will receive SMS & Email alerts on his registered mobile number / Email address for all the transactions done in his tag account.



#### Web

Web portal for customers. Customers can access their statements by logging on the FASTag customer portal.



#### Emergency road side assistance

Emergency road side assistance for your fleet drivers.



#### Saves Fuel and Time

FASTag is read by the tag reader at the plaza and the toll amount is deducted automatically, when the vehicle approaches the toll plaza. The vehicle with FASTag doesn't need to stop at the toll plaza for the cash transaction.



#### Online recharge

Customer may recharge his tag account online through, Credit Card/ Debit Card/ NEFT/ RTGS or Net Banking.



#### Prepaid Toll Pass

No need to carry cash. Customer doesn't need to worry about carrying cash for the toll payments.

**Problem Statement:**

“Design an Automatic toll plaza which is based on RFID system to save the time at toll plaza and having cash free operation” As the name suggests “Automatic Toll Plaza” is the key theme of our project is the automation. So here we will just discuss about the overlook of what is mean by Automation. So, in very simple language the Automation means to replace the human being with the machines to reduce human work. Means the work done by the human is now performed by machines.

**Motivation for the study:**

The need for this study is primarily to solve the problems related to operational toll roads, as users of these roads frequently complain about the very functioning of the system and are dissatisfied with the way the operators collect toll amount but fail miserably in providing quality service across several mandated quality parameters. As bad roads are detrimental to regional growth, monitoring of toll road infrastructure facilities is required. The assessment of performance levels of operational parameters and services gives the status of roads and fixes the responsibility of the agencies involved in road maintenance and management. As the owner, mostly the NHAI, is not conducting customer satisfaction surveys across all the toll plazas, these kinds of studies can help the authorities to take appropriate actions. It also enables the citizens to provide feedback about the poor condition of the road system and penalize the developers for not maintaining consistence performance.

**Objective for the Study:**

- What are the benefits of Electronic toll collection (ETC) to customer and toll plazas?
- How Electronic toll collection (ETC) revolutionize transport in India?
- What are the effects on traffic reduction?
- Major Problems in Electronic toll collection (ETC)?
- Agencies involved in ETC?
- Who all are the controller of ETC?

**Review of literature:**

A research observation examined the automated toll collection system for toll gate based on RFID technology. Nowadays, streams of traffic are increased and toll gate on highways are congested. It will cause the traffic jam and waste time. The objective of the research is to transform manual transaction to automated toll collection with the help of RFID technology. There are three portions in toll collection system. They are RFID system, balance deduction system in host computer and toll gate control system. For the RFID system, 13.56 MHz passive RFID reader and tag pairs are used. The balance deduction system is implemented by Microsoft Visual Studio and Microsoft SQL Server as IDE. C# language is used to implement this system. The PIC microcontroller is also used to control the stepper motor and display the deposit on the LCD. The authorized person at the toll gate can check the ID numbers, vehicle numbers and the amount of balance with the database on PC. The new user can register and update the amount of

balance via Graphical User Interface (GUI) easily. The amount of deposits will also update simultaneously at the two database of the toll gate because of LAN network. By using this system, it will save time, i.e. by avoiding long queue as no need to stop the vehicle and no need of manual transaction at the toll gate. (AungMyint, 2014)

Due to increasing population, an efficient safe and sustainable transport system is fundamental to the well being of every citizen, so vehicles play a big role in transportation and the control of vehicle is becoming a big problem and difficult to solve. Hence it becomes the focus of the academic research. Toll system methodology boomed in recent years in India and numerous algorithm, methods, strategies and systems have been emerged for toll collection. The manual toll systems faced a lot of demerits like traffic congestion, waste of time and jamming on underpasses. Moreover, increased security awareness has made the need for vehicle based on an authentication technology. The proposed system may be engaged as access control system for entering of unauthorized vehicles. Hence we need different approaches to maintain a well defined process. Thus the concept of automatic electronic payment system came into reality. Electronic toll system is the renowned research schema and has a wide impact in people's life and their scope leads us to have safe transportation and modify enhanced productivity of many industries. It helps to accomplish the automatic payments of transportation fee without stopping a toll gate. It increases the number of passing vehicles and reduces the average waiting time of vehicle in toll booth. (Sathya.v., 2015)

RFID, the acronym for Radio Frequency Identification, is a means of identifying a person or object using a radio frequency transmission. It is one of the several forms of automatic identification (AutoID) technology such as bar code, magnetic ink, optical character recognition, voice recognition, touch memory, smart cards, biometrics, etc. that uses radio waves to communicate among a system of integrated circuits, tags, readers and software to identify items. RFID refers to the technology in which the RFID tag transmits a radio frequency signal that is picked up by a reader. Radio waves transmitted from an antenna interact with an integrated circuit embedded on an RF tag, which sends radio waves back to a reader. The reader turns those waves into digital information, allowing the item that respond to be instantly identified. RFID has become one of the most important application today. The widespread use of RFID by Wal-Mart (the world's largest retailer) and the United States Department of defence has made other people, companies and groups aware of the benefits of using RFID. Other large companies have also realized its benefits both for production and distribution, which range from inventory management to theft detection. RFID has been applied in many areas such as logistics, supply chain management, warehouse management and logistics, libraries, medical implants, road tolling, building access control, aviation security, luggage tracking at airports, Automated Vehicle Identification (AVI) systems, homeland security applications, etc.1 The new Airbus A380, the world's largest passenger airplane, contains more than 10,000 RFID tags on removable pieces and those requiring periodic maintenance or replacement. Healthcare facilities are also investigating the potential of RFID tags to protect patients from medical errors and protect babies from abduction. Pharmaceutical companies embed RFID tags in drug containers to prevent (Ilyasm, 2008)

Electronic Toll Collection system is considered as an effective method in order to reduce

traffic congestion and jams, enhance the convenience and safety of travellers, and minimize air pollution and fuel consumption for environmental protection need. ETC system determines whether the vehicles passing are enrolled in the program, alerts enforcers for those that are not, and debits electronically the accounts or the amount in the IC card of registered cars without their stopping. An architecture for collecting vehicles toll using Near Field Communication (NFC). The basic idea is to develop the automatic challan system that can check for signal break by any vehicle. The NFC Reader reads the information like vehicles number and automatically sends a report to the owner of vehicles and simultaneously information is given on the site itself through. This proposed system check all the document of the car which will about to cross. It uses a passive NFC tag as carrier to identify actual vehicle path in loop road. The ETC system will toll collection without parking, also census traffic flow and audit road maintenance fees. It is necessary to improve expressway management. The performance of the system is evaluated in ASP.NET (Mohan, 2014)

The traditional manual toll collection is not efficient over highway transportation in modern road network thus to collecting the toll and traffic management to introduce a new system with advance technology is electronic toll collection. The proposed system uses the radio frequency identification technology, GSM and computer host. The RFID is used to access the vehicle information, RFID tag with a unique id is mounted on each vehicle, information contain on the tag is read by RFID reader placed at toll gate. If the vehicle belongs to the authorized person or registered, a predetermined amount is automatically deducted from its account, message will send to register mobile number and automatically opens the toll gate. All vehicle information that passing the toll booth stored in database for future reference. It also consist stolen vehicle directory if that match with incoming vehicle then and message will send to registered police station. The system eliminate the manual cash handling, increase efficient toll collection by reduce traffic congestion at toll plaza and help in lower fuel consumption. (chapate, 2014)

Toll systems are real time systems which need rapid and easy integration facilities to empower transport processes. To interoperate with many vehicles and security processing, they need a common language and a way to solve problems in a dynamic transport environment. Web Services of semantic provide this kind of framework. More specifically, they proposed a payment system using smart card. (Daconta, 2003)

Electronic toll collection aims to eliminate the delay on toll roads by collecting tolls electronically. ETC determines whether the cars passing are enrolled in the program, alerts enforcers for those that are not, and electronically debits the accounts of registered car owners without requiring them to stop. In existing systems we face the numerous problems such as standard of ETC, the compatibility of system, clearing user accounts, classification of automobiles, prevention of toll hedge, wastage of fuel, difficult to control crowd, traffic and ease of forgery etc. The toll-plaza is used for collecting fees and to maintain the quality roads. Another problem of toll-plaza is to optimize the queue length of vehicles and the time of customers in the system. The time delay caused by passing through toll station includes slowing down, accelerating waiting and service time (yu, 2011)

An automated procedure for monitoring traffic at toll gates to give the best compromise

among the conflicting objectives of payment, security and good services was studied. The system gathers information about the traffic situation with respect to the license plate number captured from each vehicle that passes through the toll gate and as well captures data such as arrival speed, arrival time and date and uses this data as input to generate traffic report/information on a daily basis. Experimentally the system shows that it can effectively capture the vehicle video and detect the license plate in day time, showing accuracy of about 85% to 90%, practical results based on actual data are included. (Vincent, 2014)

### **Research methodology:**

Research methodology is a way to systematically solve a research problem. It may be understood as a science of studying how research is done scientifically. The process used to collect the information and data for the purpose of making business decision. The methodology may include publication research, interviews, surveys, observation and other research techniques, and could include both present and historical information. In this study two types of research design are used- Exploratory and descriptive research design.

**Exploratory** research often relies on secondary research (such as a review of literature) and qualitative approaches to data gathering such as informal discussions and more formal approaches such as interview, focus group or case studies. The results of exploratory studies are not typically generalizable to the population. So exploratory research is flexible in nature.

**Descriptive** research is often designed to collect data that describe the characteristics of a person, event, or situation. Descriptive design is either qualitative or quantitative in nature. It may involve the collection of quantitative data such as satisfaction rating, production figure, sales figure, or demographic data, but it may also entail the collection of qualitative information. For instance qualitative data might be gathered to describe how a consumer goes through a decision-making process or to examine how managers resolve conflicts in organizations.

In this study Primary sources of data are informal interview, observation at toll plazas. And Secondary sources of data are NHAI publication, news article, and research article.

### **Analysis of data:**

The transport system in India comprises a number of distinct modes and services, notably railways, roads, water transports and airlines. A good road network is a vital infrastructure requirement for rapid growth. Road transport has steadily expanded its scope of operation and is now not merely a mode for the last haul but is also handling freight over long distances.

An Intelligent Transportation System based on a toll system is one of the important study aspects of vehicle controlling. The benefits of ETC implementation is to eliminate congestions on existing and new toll highway and to minimize fraud, providing user convenience and at the same time enhancing operational efficiency for toll operators. Electronic Toll System are having a wide impact in people's life as their scope leads us to

have safe and mobility and to enhance productivity through the use of advanced technologies. The present thesis aims an optimal toll collection system in India using various approaches. In this aspect, a high security registration plate is needed for vehicle classification and checking. This HSRP has been implemented in the vehicles and was analyzed. It recognizes and checks all the details entered and check whether it matches with that of the Regional Transport details only. Since regional transport provides the fitness certificate for all vehicles it is made safe for the vehicle and its owner. Next to this a FASTag system is introduced and is debited the toll amount. It successfully debits the amount automatically. The web service acts as a centralized server and generates the report. Thus the present study has discussed electronic toll collection using simulated queuing model in Toll Collection System linked with NHAI. With the reduction of human interaction in the entire toll collection process, we can create a better ETC FASTag system. It can also drastically improve the efficiency of toll stations and the traffic abilities of the toll road used for justification line, display board and mixed split line. This proposed system designed could automatically detect the identities of the vehicle and performed the billing in accordance to the identity of each vehicle as pre recorded. If this system comes into proper implementation and proper technology it surely increases the income of state and central government. It ensures regularity among the users if they strictly adhere to the rules and regulations. But due to technical problem ministry of road transport & highways offer this job to Korean company. The whole system of electronic toll collection is very convenient and save much more time.

### **Summary:**

The toll road system has been historically accounted for the bulk of the financing of highway network. By building a toll roadway, it is possible to provide a number of improved services to the road users, which can be measured in order to ensure that they deliver the outcomes. In toll road sector, the major stakeholders, typically the Government and the contractors are responsible for development of the toll project and delivering operational services, using associated technologies, thereby fulfilling the primary objective of creating a tollway, being the customers satisfaction. Toll roads have been gaining popularity for more than a decade in India. A few years after the tollway projects are put into operational mode, they are expected see a lot of new line traffic every day comprising a variety of vehicles ranging from personal vehicles, light new line and heavy commercial to multi axle trucks and so on. As per the prescribed Government policy guidelines, toll fares are levied on most of the vehicles using toll road facility. It is important to provide good quality road infrastructure as well as other required amenities to the road users, with focus on enhancing the safety measures. The region has a toll road system comprising toll road segments and a network of toll plazas. The toll plazas are set up by the private developers for collecting toll from the vehicles passing through the toll road as part of the toll road contract agreement made with the Government. Most of the road users feel that roads in the region are not up to the desired operational standards. As the contractors do not follow reportedly stipulated norms, as laid down in the roadway Operation and Maintenance contract and fail to perform contractual obligations, the road users do not get basic services like toilets and parking base along the roads. And due to technical problem, they are not able to provide proper electronic toll collection, which gives many advantages to the road user as well as contractor. Therefore citizens are not ready to pay toll but they cannot refuse.

**Conclusion:**

Electronic toll collection systems provide a great advantage over the conventional systems. Even though there is some privacy concerns, Electronic toll collection systems have far greater advantages when it comes to increase revenue, operating and economic cost and improved air quality. This is capable without putting anyone in any additional risk, or having to sacrifice individuals privacy. With greater adoption of this technology The benefits could impact millions of people with improved commuting times and potentially save millions in medical cost from the improved air quality through reduction in traffic congestion.

By application of FASTag with proper technology we can avoid traffic congestion, time maintenance system and long wait at toll gates can be improved

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<https://www.researchgate.net>

# Era Of The Fastest Growing Technology In The World: Cloud Computing

Vikas Singh

JJTU Research Scholar

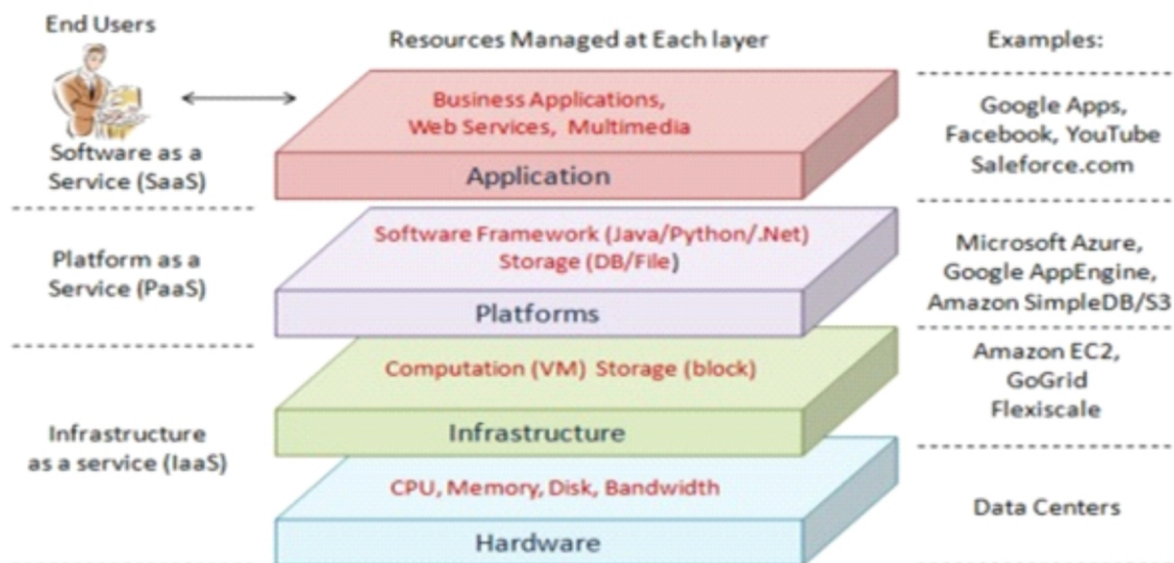
## Abstract:

Clouding Computing is one of the fastest growing technology in the world, the research paper discusses about the introduction to cloud computing, different platforms of cloud computing, types of cloud computing, advantages and limitation of cloud services, different cloud providers in India.

## Introduction:

Cloud computing is a complete new technology. It is the development of parallel computing, distributed computing grid computing, and is the combination and evolution of Virtualization, Utility computing, Software-as-a-Service(SaaS), Infrastructure-as-a-Service (IaaS) Desktop-as-a-service(DaaS) and Platform-as-a-Service (PaaS). To users, cloud computing is a Pay-per-Use-On-Demand mode that can conveniently access shared IT resources through the Internet. Cloud computing is the delivery of computing services—servers, storage, databases, networking, software, analytics and more—over the Internet (“the cloud”). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage, similar to how you are billed for water or electricity at home i.e. pay as you go model.

## A. Architecture Of Cloud Computing





### **1. Software As A Service(SAAS)**

Software as a service (SaaS) is a software distribution model in which a third-party provider hosts applications and makes them available to customers over the Internet. SaaS applications are sometimes called Web-based software, on-demand software, or hosted software. Whatever the name, SaaS applications run on a SaaS provider's servers. The provider manages access to the application, including security, availability, and performance.

### **2. Platform As A Service (PAAS)**

Platform as a service (PaaS) is a cloud computing model in which a third-party provider delivers access to datacenters usually those needed for application development -- to users over the internet. A PaaS provider hosts the hardware and software on its own Datacenter. As a result, PaaS frees users from having to install in-house hardware and software to develop or run a new application.

### **3. Infrastructure As A Service (IAAS)**

IaaS provides the underlying operating systems, security, networking, and servers for developing such applications, services, and for deploying development tools, databases, etc. The capability provided to the consumer is to access provision processing, storage, networks and other fundamental computing resources where the consumer is able to deploy and run software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage and deployed applications; and possibly limited control of select networking components.

### **4. Desktop As A Service (DAAS)**

DaaS allows consumers to pay for what they are actually using rather than the site license for the entire database. In addition to traditional storage interfaces such as RDBMS and file systems, some DaaS offerings provide table-style abstractions that are designed to scale out to store and retrieve a huge amount of data within a very compressed timeframe, often too large, too expensive or too slow for most commercial RDBMS to cope with. Examples of this kind of DaaS include Amazon S3, Google Big Table, and Apache HBase, etc.

## **B. Types Of Cloud Platform**

### **1.Public Cloud**

The most recognizable model of cloud computing to many consumers is the public cloud model, under which cloud services are provided in a virtualized environment, constructed using pooled shared physical resources, and accessible over a public network such as the internet. Public clouds can also be deployed faster than on-premises infrastructures and with an almost infinitely scalable platform.

### **2.Private Cloud**

A private cloud is a particular model of cloud computing that involves a distinct secure cloud based environment only for the specified client . As with other cloud models, private clouds will provide computing power as a service within a virtualized

environment using an underlying pool of physical computing resource. However, under the private cloud model, the cloud (the pool of resource) is only accessible by a single organization, therefore providing that organization with greater control and privacy.

### **3. Hybrid Cloud**

Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud and third-party, public cloud services with orchestration between the two platforms. By allowing workloads to move between private and public clouds as computing needs and costs change, hybrid cloud gives businesses greater flexibility and more data deployment options.

## **C. Advantage Of Cloud Computing**

### **1. Fresh Software**

With SaaS, the latest versions of the applications needed to run the business are made available to all customers as soon as they're released. Immediate upgrades put new features and functionality into workers' hands to make them more productive. What's more, software enhancements are typically released quite frequently. This is in contrast to home grown or purchased software that might have major new releases only once a year or so and take significant time to roll out.

### **2. Do more with less**

With cloud computing, companies can reduce the size of their own data centers — or eliminate their data center footprint altogether. The reduction of the numbers of servers, the software cost, and the number of staff can significantly reduce IT costs without impacting an organization's IT capabilities.

### **3. Flexible costs**

The costs of cloud computing are much more flexible than traditional methods. Companies only need to commission – and thus only pay for – server and infrastructure capacity as and when it is needed. More capacity can be provisioned for peak times and then de-provisioned when no longer needed. Traditional computing requires buying capacity sufficient for peak times and allowing it to sit idle the rest of the time.

### **4. Always-on availability**

Most cloud providers are extremely reliable in providing their services, with many maintaining 99.99% uptime. The connection is always on and as long as workers have an Internet connection, they can get to the applications they need from practically anywhere. Some applications even work off-line.

### **5. Improved mobility**

Data and applications are available to employees no matter where they are in the world. Workers can take their work anywhere via smart phones and tablets—roaming through a retail store to check customers out, visiting customers in their homes or offices, working in the field or at a plant, etc.

### **6. Improved collaboration**

Cloud applications improve collaboration by allowing dispersed groups of people to

meet virtually and easily share information in real time and via shared storage. This capability can reduce time-to-market and improve product development and customer service.

#### **7. Cloud computing is more cost effective**

Because companies don't have to purchase equipment and build out and operate a data center, they don't have to spend significant money on hardware, facilities, utilities and other aspects of operations. With traditional computing, a company can spend millions before it gets any value from its investment in the data center.

#### **8. Expenses can be quickly reduced**

During times of recession or business cut-backs (like the energy industry is currently experiencing), cloud computing offers a flexible cost structure, thereby limiting exposure.

#### **9. Flexible capacity**

Cloud is the flexible facility that can be turned up, down or off depending upon circumstances. For example, a sales promotion might be wildly popular, and capacity can be added quickly to avoid crashing servers and losing sales. When the sale is over, capacity can shrink to reduce costs.

#### **10. Facilitate M&A activity**

Cloud computing accommodates faster changes so that two companies can become one much faster and more efficiently. Traditional computing might require years of migrating applications and decommissioning data centers before two companies are running on the same IT stack.

#### **11. Less environmental impact**

With fewer data centers worldwide and more efficient operations, we are collectively having less of an impact on the environment. Companies who use shared resources improve their 'green' credentials.

### **D. Limitations Of Cloud Services**

#### **Technical Issues**

Though it is true that information and data on the cloud can be accessed anytime and from anywhere at all, there are times when this system can have some serious dysfunction. You should be aware of the fact that this technology is always prone to outages and other technical issues. Even the best cloud service providers run into this kind of trouble, in spite of keeping up high standards of maintenance.

#### **Security in the Cloud**

The other major issue while in the cloud is that of security issues. Before adopting this technology, you should know that you will be surrendering all your company's sensitive information to a third-party cloud service provider. This could potentially put your company to great risk.

### **Prone to Attack**

Storing information in the cloud could make your company vulnerable to external hack attacks and threats. As you are well aware, nothing on the Internet is completely secure and hence, there is always the lurking possibility of stealth of sensitive data.

### **E. Cloud Service Providing Companies In India**

1. Amazon AWS Cloud
2. Microsoft Azure
3. CtrlS
4. Google Cloud Platform.
5. IBM Cloud.
6. Rackspace
7. Go daddy
8. VMWare
9. Oraclecloud
10. Verizon Cloud

### **F. Conclusion**

This paper discussed the architecture and popular platforms of cloud computing. It also addressed challenges and issues of cloud computing in detail. In spite of the several limitations and the need for better methodologies processes, cloud computing is becoming a hugely attractive paradigm, especially for large enterprises. Cloud Computing initiatives could affect the enterprises within two to three years as it has the potential to significantly change IT.

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# TO STUDY INVESTORS BEHAVIOR TOWARDS INVESTMENT AVENUES

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## Abstract:

In this modern era, money plays an important role in one's life. To overcome the problems in future they must invest their money. There are a lot of investment choices such as bank, Gold, Real estate, post office services, mutual funds and one must select the most appropriate one. Savings of the people are invested in assets depending on their risk and return demands, Safety of money, Liquidity, the available avenues for investment, from various financial institutions, etc. Investors are investing their surplus money with the different objectives such as profit, security, returns and Income stability etc. The objective of the study is to determine the various alternative investments and the factors while selecting the investment avenues and relationship between the savings and investment patterns among preferred investors behaviour towards investment Avenues of the individual investors of Mumbai city by different age group. The data collected through structured questionnaire administered to 100 respondents working in different sectors at Mumbai city. It was found from the analysis that there is relationship between Annual Savings and Age, Income, Sector wise Employment, Education of people at Mumbai city. Analysis has been done through various statistical tools i.e., simple percentages, ranking and Chi Square test etc. The majorities of the respondents prefer priority to mutual funds, bank savings and stocks main purpose of investment is that steady income and earn high return within short period.

Keywords: Annual Income, Savings, Demographic factors, Investment avenues, Investor's Behaviour, Dimensions of Investment Choices, Awareness of Investment Options.

## INTRODUCTION:

India is one of the fastest-growing economies in the world. Over the last decade, both government and private industry have endeavoured to bring about an environment conducive to growth. India is a developing country stuffed with various credits. It is interesting to note that the savings rate is relatively higher when compared with that of other countries. Personal Savings in India increased to 26099.21 INR Billion in 2016 from 25429.60 INR Billion in 2015. (Personal Savings in India is reported by the Central Statistical Organization, India.). This is increasingly reflected in better earnings and higher disposable incomes for the working population.

## GRAPH OF SAVING PATTERN IN INDIA:



In today's scenario, money plays an important role in one's life. To overcome the problems in future one must invest his or her money. Investment may be defined as sacrifice of certain present value for some uncertain future value. In other words, investment means the purchase of a financial product with an expectation of future returns. Investors have different mind-set when they decide about investing in a particular avenue. Every individual wants his saving to be invested in most secure and liquid way. However, the decision varies for every individual depending upon their risk aptitude. Investment behaviour is related to activities of individual investors regarding searching, evaluating, acquiring, reviewing the investment products and if necessary, disposing such investment products. Investment behaviour reveals how the individual investor allocates the surplus financial resources to various instruments available.

There are various investment options available in the market. People prefer to invest in particular investment options according to a purpose, need, with certain objective in mind. Various objectives behind investment in particular investment avenues are retirement planning, tax saving, children marriage, future obligation, children insurance, improve standard of living, acquisition of asset, supporting parents, health insurance, income regularity and many more. Investing is a serious subject that can have a major impact on investor's future well-being.

Virtually everyone makes investments. Investors have a lot of investment avenues to park their savings. The risk and returns available from each of these investment avenues differ from one avenue to another.

**Different avenues are:**

- i. Safe/Low Risk Avenues: Savings Account, Bank Fixed Deposits, Public Provident fund, Government Securities, etc.
- ii. Moderate Risk Avenues: Mutual Funds, Life Insurance, Debentures, and Bonds.
- iii. High Risk Avenues: Equity Share Market, Commodity Market, FOREX Market.
- iv. Traditional Avenues: Real Estate (property), Gold/Silver, Chit Funds.
- v. Emerging Avenues: Virtual Real Estate, Hedge Funds/Private Equity Investments, Art.

**Behavioural Influences on Savings & Investment:**

Behavioural finance is the application of scientific research on the psychological, social and emotional contributions to market participants and market price trends. It also studies the psychological and sociological factors that influence the financial decision making process of individual groups and entities. The field of "behavioural finance" has evolved that attempts to better understand and explain how emotions and cognitive errors influence investors and the decision-making process. An optimum investment decision plays an active role and is a significant consideration. Investor is a rational being who will always act to maximize his financial gain. Investment behaviour refers to the attitudes perception of the individuals and institutions in placing their savings in various types of financial assets, more commonly known as securities. An investor is a person who scarifies the present to reap the benefits for the future. The benefits may be in the form of capital appreciation, income in the form of dividends, bonus, retirement benefits and many other benefits. Hence, Investment behaviour is based on uncertainty about the future and is thus risky. News and rumours and speed and availability of information play important roles in investment markets. Risk propensity, risk preference, and attitude are the major concepts and explanations of investment behaviour. Investors employ biases and heuristics in their decisions to invest or not, and how much to invest. Herding is another factor: people tend to imitate and follow other investors, probably due to lack of relevant and reliable information and lack of courage to behave differently. Generally, an investor objectives would be one among the following i.e. to minimize the risk or to maximize the return, either to hedge against inflation, liquidity or tax benefit.

**CHANGES IN FINANCIAL ASSETS OF THE HOUSEHOLD SECTOR**  
(At Current Prices)

Year	Currency	Bank deposits	Non-banking deposits	Life insurance fund	Provident and pension fund	Claims on Government	Shares & debentures	Units of UTI	Trade Debt (Net)	Changes in financial assets
2010-11	1,371.31	5,482.99	50.99	2,101.02	1,411.39	295.45	17.29	-	68.23	<b>10,798.67</b>
2011-12	1,062.42	5,259.70	100.21	1,956.73	956.80	-218.89	165.22	-	45.09	<b>9,327.28</b>
2012-13	1,115.21	5,750.80	279.11	1,799.49	1,564.79	-71.09	170.27	-	31.83	<b>10,640.41</b>
2013-14	995.20	6,393.04	228.16	2,044.69	1,778.41	230.53	189.30	-	48.38	<b>11,907.71</b>
2014-15	1,333.45	6,027.27	335.24	2,992.96	1,887.77	9.69	198.19	-	41.76	<b>12,826.33</b>
2015-16	2,005.18	6,220.94	366.55	2,660.63	2,768.54	666.39	413.17	-	40.66	<b>15,142.06</b>
2016-17	3,168.12	10,957.7	341.42	4,406.53	2,960.78	836.97	1,825.78	-	43.60	<b>18,204.68</b>

**STATEMENT OF THE PROBLEM:**

Indian economy is growing significantly, and it offers a wide variety of financial products to the individuals. To choose wisely, the investors need to know the investment options thoroughly. But there will be confusion among the people for the selection of best investment avenues and this is the major problem of the individual investors. The investors are having a lack of awareness about investment alternatives, while investing money. The recent developments in information technologies have resulted in provision and accessibility of various financial products and it make people to invest more. By adopting proper strategy to the investment plan the individuals can able to increase their personal wealth and it will proportionality contribute to higher economic growth. But the investor need to make the decision of how much to invest and where to invest.

**OBJECTIVE OF THE STUDY:**

- 1) To develop a profile of sample Indian individual investor in terms of their demographics.
- (4) To know the extent of financial literacy of individual investors
- (5) To identify the preferred sources of information influencing investment decisions.
- (7) To study the dependence/independences of the demographic factors (Gender and Age) of the investor and his/her risk tolerance level.

### **SCOPE OF THE STUDY:**

In today's competitive environment a lot of investment avenues are being provided by various Public and private financial organizations, people are totally confused to decide where to make an investment. The present study was mainly focuses to understand the awareness level of the people on various investment opportunities from various financial institutions, factors considered for investment, and to understand behaviour of investors in gaining a better understanding of what an investor look for in investment avenues. This study aims to gain knowledge about key factors that influence investment behaviour and ways these factors impact investment risk tolerance and decision-making process among men and women and among different age groups.

### **LITERATURE REVIEW:**

**Dr. P Amaraveni and Mrs. M Archana (July 2017)** in their research article "a study on investors behavior towards various investment avenues in Warangal district" Identified that Many people are not coming forward for investment because of fear of loss of money. They are nervous by fluctuations in stock market, money market and confused by the system and frustrated by the financial markets. All the people are not aware of how, when and where to invest their money. There is a significant relationship between annual income and their preferences for investment avenues and there is no significance relationship between age of the respondents and their preferences for investment avenues. The study finds that there is a significant relationship between the income of the respondents and the objectives of investment.

According to **G. Velmurugan, V. Selvam and N. Abdul Nazar (July 2015)** in their research paper "An Empirical Analysis On Perception of Investors' Towards Various Investment Avenues" concluded that, The study concludes that investment done in various investment avenues with the expectation of capital appreciation and short and long term earnings. The basic idea behind investment of all government, private, self-employed and retired person in this study is to utilize the surplus money in favorable plans so that the money will be rolled back as well as it will give high returns also. When a common man thinks about investment he will never go for any risky plan. In the present scenario the share and gold market is highly uncertain and unpredictable, so the investor should analyze the market cautiously and then make investment decision.

### **RESEARCH METHODOLOGY:**

**TYPE OF RESEARCH:** Descriptive and Exploratory research

**RESEARCH DESIGN:** A Research design is purely and simply the framework of plan for a study that guides the collection and analysis of data. The study is intended to find the investors preference towards various investment avenues. The study design is Descriptive in nature. Descriptive Research is a fact-finding investigation with adequate interpretation. It is the simplest type of research and is more specific. Mainly designed to gather descriptive information and provides information for formulating more sophisticated studies.

**SOURCE OF DATA:** Primary data collected by administering a questionnaire on 100 respondents of Mumbai city. Since the aim of the survey is to allow every person to list his/her opinion about investment avenues. Secondary data collected from various books, Journals, magazines & websites etc. The Personal Factors such as gender, qualification and work status, and income and life stage are analysed through a structured questionnaire

**TYPE OF SAMPLING:** Convenience method of sampling is used to collect the data from the respondents. Researchers or field workers have the freedom to choose whomever they find, thus the name "convenience".

In order to analyse the collected data, Simple percentages, ranks and Chi Square test were used. The behavioural factors of the investors such as emotional risk tolerance, financial literacy level and various other factors have been analysed.



## Hypothesis testing:

### CHI-SQUARE TEST

Chi-square test is applied in statistics to test the goodness of fit to verify the distribution of observed data with assumed theoretical distribution. Therefore, it is a measure to study the divergence of actual and expected frequencies. It is commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis framed earlier. To study the relationship between the annual income and preference of Investment Avenue of the respondents, the Chi-square test has been applied.

(O-E)

Chi-square test ( $\chi^2$ ) = -----

E

O= Observed frequency, E= Expected frequency, Df = Degree of Freedom

Df= (r-1) (c-1) (R= row, C= column)

1. (H0) There is no significant difference between age and risk tolerance level.

<b>What is your risk tolerance l@ve</b>				
<b>Age</b>	High	Low	Medium	Grand Total
<b>21– 30</b>	6.33%	26.58%	67.09%	100.00%
<b>31– 40</b>	16.67%	33.33%	50.00%	100.00%
<b>40 and above.</b>	12.50%	50.00%	37.50%	100.00%
<b>Below 20</b>	14.29%	42.86%	42.86%	100.00%
<b>Grand Total</b>	<b>8.00%</b>	<b>30.00%</b>	<b>62.00%</b>	<b>100.00%</b>

p- value: 0.997153091

Since the calculated Chi Square value is greater than the table value at 0.5 percent level of significance, the null hypothesis is rejected. Hence there is a significant relation between age and risk tolerance.

2. (H2) There is no significance difference between age and financial literacy.

<b>Age</b>					
<b>According to you are y financially literate?</b>	21- 30	31– 40	40 and above.	Below 20	Grand Total
<b>1</b>	5	1	2	1	9
<b>2</b>	18	3	1		22
<b>3</b>	46	1	3	4	54
<b>4</b>	9	1	2	2	14
<b>5</b>	1				1
<b>Grand Total</b>	<b>79</b>	<b>6</b>	<b>8</b>	<b>7</b>	<b>100</b>

p- value= 0.57665964

Since the calculated Chi Square value is almost equal at 0.5 percent level of significance, the null hypothesis is accepted. Hence there is a significant relation between age and financial literacy.

3. (H3) There is no significant relationship between income earned and income saved

<b>COUNTA of What is What percent of your income you inve your income? these avenues?</b>						
<b>What is your income</b>		0%-10%	11%-20%	21%-30%	31% and above	Grand Total
<b>2 lakhs to 4 lakhs</b>		9	6	1		16
<b>4 lakhs to 6 lakhs</b>	1	5	3	7		16
<b>6 lakh and above</b>		1	1	3		5
<b>below 2 lakhs</b>	2	31	19	8	3	63
<b>Grand Total</b>	<b>3</b>	<b>46</b>	<b>29</b>	<b>19</b>	<b>3</b>	<b>100</b>

P=value 0.163881

Since the calculated Chi Square value is lower than 0.5 percent level of significance, the null hypothesis is accepted. Hence there is a significant relation between income earned and percentage saved.

#### **SUMMARY AND FINDINGS:**

1. The study reveals both male and female dominates the investment market in India.
2. Most of the investors possess higher education degree like graduation and above.
3. Majority of the investors are students followed by salaried and professionals.
4. Most of the investors opt for two or more sources of information to make investment decisions.
5. Majority of the respondents saving percentage of income that they invest in these avenues are on monthly basis followed by annual basis.
6. The investor's decisions are based on their own initiatives.
7. The investment habit was noticed in many of the people who participated in the study.
8. Most investors prefer to park their funds in avenues like mutual funds, bank savings, insurance and stocks.
9. Most of the investors get information related to investments through newspapers, internet, peers/friends and family.
10. Most of the investors are neutral about their financial literacy.
11. Majority of the respondents are aware of all the avenues stated in the questionnaire.
12. Risk tolerance and age of the investors are inversely related. Investors at young age are high risk bearer than investor above 40 years.

#### **LIMITATION:**

- The Sample size was very limited to 100 Investors and it was conducted only in Mumbai city on selected investment instruments so it may or may not be represented with the entire population.
- The study has been conducted to analyze some factors effecting investment behavior of Investors.
- Reluctance of the people to provide complete information about them can affect the validity of the responses.

## **CONCLUSION:**

The study Investment Behaviour is mainly focusing on the investment behaviour of the people in the Mumbai city. It is also concentrating on the investment options they are choosing to invest their surplus fund and their awareness about these investment alternatives. And majority of the investors are aware of all the avenues asked in the questionnaire. From the above primary research, identifies that mutual fund, bank savings and insurance are most preferred investment avenues among others. Age, income play a major role in investors behaviour for opting financial avenues.

Hence, this study confirms the earlier findings regarding the relationship between age and risk tolerance level of individual investors. The individual investors still prefer to invest in financial products which gives risk free returns. This confirms that the Indian investors even they are earning high income, well educated, salaried, independent are conservative investors prefer to play safe.

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# Diversity and Inclusion Best Practices in the MNCs

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## **ABSTRACT:**

The first thing that strikes a chord when we hear about diversity and inclusion at workplace in all likelihood is about the proportion of women to men. In any case, it is a lot more extensive term. This research study focuses on the larger aspects of diverse teams that may have people with different cultures/race/religion, different generations, social background or sexual orientation. It also focuses on the true meaning of inclusion when it comes to various organizations. The study further describes the importance of diversity and inclusion in the organizations that act as a competitive advantage for them in this VUCA world. The literature review provides the evidence on the importance of diversity and inclusion by reviewing research papers and articles. To understand the diversity and inclusion best practices, some organizations that are known for their best in class practices are benchmarked. Accordingly suggestions are derived that can be adopted by companies to improve their workplace culture.

**KEYWORDS:** Diversity and inclusion, Best practices, Diverse teams

## **INTRODUCTION**

Workplace diversity includes gender, inclusiveness of the differently-abled, embracing people from all races, religions and social classes, sexual orientation and even generations.

As it is rightly defined by Malcolm Forbes- "Diversity is the art of thinking independently together" India is one of the most diverse nations in the world in terms of religion, language, ethnic groups and also dance forms. Diversity is about an appreciation of the benefits that societies, organizations, teams and individuals can use to themselves by maintaining a focus on variety and multiplicity as opposed to uniformity.

According to Harvard Business Review 2016, a series of experiments were conducted in Texas and Singapore, where the scientists had assembled financially literate people in simulated markets and asked them to price stocks. The individuals were placed in either ethnically diverse or homogenous teams. The analysts found that people who were a piece of different gatherings were 58% more slanted to value stocks precisely, while those in homogenous gatherings were more inclined to assessing blunders. While working with similar people are comfortable but it actually might not be that beneficial. In fact, a team of different backgrounds, style, genders, races, nationalities contributes to increase the potential and creativity of a business in multiple ways and helps the team members to avoid bias, question their viewpoints and find valuable perspectives.

This study tries to find out best practices in terms of diversity and inclusion at Mahindra and Mahindra Ltd and among different companies. It also tries to emerge insights to help companies improve their diversity and inclusion practices and initiatives.

## LITERATURE REVIEW

Diversity and Inclusion at the Workplace: A Review of Research and Perspectives, (2015) states that there has been a shift from diversity to inclusion. In one study of Fortune 500 companies, it was found that the top 25% of the firms in terms of women in senior management yielded 30% higher returns than the other firms. A Deloitte report also observed that if just 10% more employees feel included in the workplace then the organization can increase the work attendance by almost one day per year per employee. Context of Inclusion in India: The reports and research on inclusion in the context of India, states that the dominant focus is inclusion on education. In April '2014, India's Supreme Court, accorded legal recognition for the first time to transgender people as a 'third gender', by classifying them as "other Backward Classes", thereby allowing their reservations in education and public employment. In guidelines, there are some policies in terms of inclusion in education but not for inclusion at workplace. Inclusion suffers when an employer view others in terms of oversimplified stereotypes, thus creating and sustaining differences rather than working to integrate and overcome differences.

When employees feel included in an organization, they would believe that they are not only treated with respect but also their unique value is known and appreciated. And this sense of belongingness and psychological experience is called inclusion at workplace.

The more Diversity and Inclusion strategy is linked to the core business strategy the more effective it will be for the organizations. It should be treated as a culture change just like other OD initiatives. Here leadership plays an important role in supporting and creating inclusion in an organization. An inclusive leader seeks value of employees' contributions, manages conflicts, embodies merit-based decision making and creates a sense of collective identity. Many organizations today have employee resource groups also known as affinity groups. These established networks promote a welcoming environment for minority or underrepresented groups. India is acknowledged to be among the most diverse nations in the world and Indians have unconscious competence to manage diversity. To mark this competence, conscious leaders in India may begin with an examination of the fundamental assumptions underlying the understanding of diversity and inclusion.

Global Human Capital Trends -Deloitte-From diversity to inclusion (2014) Many organizations promote diversity while they struggle to fully leverage the business benefits of a diverse workforce. Nearly 33% of the respondents to the Human Capital Trends Global survey said that they were unprepared in this area, while only 20% guaranteed to be fully prepared. The two major points that emerged to help companies transition from simply meeting minimum regulatory requirements for diversity to building a comprehensive working environment are- 1. Diversity of thinking as a business imperative i.e. organizations can start by broadening their understanding of diversity, valuing different perspectives of the individuals and by maximizing the participation from bottom to top participants in the workplace. Thinking of diversity in this way will help organization to be conscious of the risk associated with homogeneity and making diversity no longer a "program" to be managed but a business imperative. 2. A focus on inclusion as well as diversity itself- it was a research by Kenji Yoshino, at NYU Law School and Christie Smith, head of Deloitte University's Leadership Center for Inclusion. They suggested that the current inclusion initiatives often implements

participation without recognizing how the inclusion is predicated on assimilation. A study by Deloitte Australia showed that high performing organizations are characterized by their commitment to diversity and a culture of inclusion.

As per Harvard Business Review (2016), a study published in Innovation: Management, Policy & Practice, analyzed different levels of gender diversity in research and development groups from 4,277 companies in Spain. It found out that the organizations with more women were more likely to bring radical innovations in the market in a span of two years.

According to Harvard Business Review (2013) issue, diversity unlocks innovation and creates an environment where "outside the box" ideas are heard. Additionally, leaders who gave diverse teams their equal opportunity were about twice likely as others to drive valuable insights. It found out that employees in a "speak up" culture were 3.5 times more likely to be innovative in their approach.

## **FORMULATION OF RESEARCH PROBLEM AND RESEARCH METHODOLOGY:**

### **Statement of Purpose:**

The purpose of this study is to understand the diversity and inclusion practices around metrics, scorecard and evaluation process of diversity and inclusion in companies that promote best in class practices in the world. Also, the research focuses to study the major impact of diversity and inclusion initiatives, scorecards in different companies.

### Objectives of the study:

1. To understand diversity and inclusion in Mahindra and Mahindra
2. To understand and analyse the diversity and inclusion best practices in different companies
3. To suggest measures on the scorecard and to enhance diversity and inclusion best practices at Mahindra Group

### Data Collection:

Descriptive type of research is used because it enables to describe the situation more completely. Such type of data collection helps for gathering in-depth information that may be either quantitative or qualitative in nature. Therefore it allows a multidimensional approach to data collection and analysis and results in rich data that is collected in large amounts.

### Primary Data collection:

For the purpose of primary data collection, a questionnaire was prepared. It was made for the concerned person in the diversity and inclusion of the company who could provide valuable inputs on the same.

### Sample Size: 7

A comparative study in terms of diversity and inclusion (D&I) has been done in the 7 companies namely:

Aditya Birla Group, Godrej, Mondelez, TATA, Amazon, RPG and Ernst & Young. The respondents were the concerned people of the diversity and inclusion team or HR person

who can give inputs. The research tool used was questionnaire for interviewing them.

**Objective 1:** To understand diversity and inclusion at Mahindra and Mahindra Ltd  
Diversity and Inclusion at Mahindra:

Their vision is to value and celebrate the uniqueness of every individual by fostering an environment of inclusiveness and empowerment. This enables them to meet the needs of their stakeholders through active participation of diverse talented individuals. The Group Diversity Council of the Mahindra Group was formed on 23rd November, 2012 with the aim of driving diversity and inclusion agenda of the Group for business experience.

Their focus areas for Diversity and Inclusion at Mahindra are: Gender-They try to maintain equal integration of males and females in the organization. The gender diversity has risen to 22% in the year 2017.

LGBT- Providing safe and non-discriminatory environment for Lesbian, Bisexual, Gay and Transgender employees and giving them equal opportunities to them.

Socially Disadvantaged- Providing equal opportunity to people from all background and economic status.

Race/Religion- Respecting and understanding different cultures and religious preferences of all employees.

Generation intelligence- Respecting and implementing the perspectives of the people of all ages and every career stage. And managed to have around 67% Millennials that are successfully working with different generations.

Specially Abled– Providing an environment that takes care of the special needs of each employee. And therefore, so far, Mahindra has hired more than 200 persons who are specially abled in varied roles.

Some of the many initiatives are: The call center team was set up in Delhi in the year 2007, which had 2 women in the beginning and today they have around 61 women working there. Also, the team is managed by a Women manager. They have hired 24 undergraduates, 10 women who intellectuals in a regional language and 6 women have also joined after their sabbaticals. The women were encouraged to work by giving them policies like work from home facility and flexible working hours. The Mahindra World of Women (MWOW) network was formed to learn and share experiences of the women with their peers and cope up with the challenges they face in their work life. Fireside Chat at the Mahindra GCO is a unique platform where the young budding leaders get a chance to connect and interact online with the top management and develop a broad overview of the talent pool. Focused Lateral Recruitment of Women is an initiative to include more women, and for that they have requested consultancies to share CV's of the potential female candidates. They have had 40 new women hire in 2017 out of which 2 were at Senior management level, 15 at mid management level and 23 at executive level. Project Ex-Servicemen- This initiative was started with the objective to provide second employment opportunity to the people who have served our nation in the past and hence

Mahindra Finance has tied up with Army Placement Welfare Organizations everywhere in the country to hire these citizens for some supervisory roles in the workplace. Differently Abled employees- Since 2017, Club Mahindra has started to hire employees with disabilities. Since then 62 people have been hired in the resorts in Kerala, Maharashtra, Uttarakhand, Sikkim, Rajasthan, Shimla and Goa. Their families are provided with accommodation inside resort premises.

The Mahindra Group does not have a separate D&I (diversity and inclusion) scorecard in place at group level but they have D&I scorecard at different business levels. Their review mechanism for the progress of their initiatives and best practices at group level is done in quarterly basis. The success drivers in terms of leaders for the diversity and inclusion at group level are Group and sector diversity council.

**Objective 2-** To understand and analyze the diversity and inclusion best practices in different companies

□ Diversity and inclusion best practices in various companies:

**Aditya Birla Group-** Launched a women community called World of Women (WOW) for all women in 2006 at group and business level. The organization has an aspiration to increase the number of women in the top leadership level from 4% to 6% by 2020. They focus on workplace enablers by enhancing the workplace for women by providing hand crafted development through mentoring and coaching for senior level women. Sensitization programme like workshops or being tied up with some external sources are carried out for managers. They address unconscious bias in the form of story sharing platform that has transformed the views of the people.

They have recognized diversity champions across the group and the world wherein if a manager has more than 30% women in the mid and above level then they are available for recognition of development. In the case of the businesses which have above 15% women in the talent pool are referred to as a diversity champion.

Flexibility in Maternity policy for women up to 6 months additional to the maternity policy and transport facility for expecting mothers are given.

For generation they focus to enable the managers to work more effectively with the younger generation. To enable the employees to really understand the perspective of the seniors initiatives are taken and career conversation with the youngsters are implemented to get their perspectives.

**Godrej-** They formed diversity champion i.e. to identify one person who will campaign the cause for that function.

For the LGBT community Godrej has announced a change in policy so that people could nominate their same sex partners in a committed relationship for benefits like treatment at the group's hospital.

Godrej has introduced women friendly policies such as their six-month paid maternity leave, work from home and flexi-time work options so that women do not have to



sacrifice their career aspirations. Panel discussions are also held for women by some women leaders and also for the inclusiveness of the LGBT community.

They have Godrej women's leadership network to help the women to manage their professional development and address any concerns that may arrive through mentoring and regular networking opportunities.

The Godrej Alliance for parents is a resource group for working parents at Godrej where the employees with the spouses attend the sessions, workshops and share their experiences about childcare, children's education, etc.

**Mondelez India-** Women gets additional maternity benefits i.e. additional 6 months flexible work to the maternity policy which is fully paid. A diversity champion is identified who would campaign the D&I for a particular function that will help the organization to move forward in their D&I journey. Additional bonuses are given for diverse referrals.

At their Cadbury Dairy Milk chocolate plant in Sri City, Andhra Pradesh, more than 50 percent of employees are women. Such substantial achievement was made by the model of community living. Their facility also focused on providing special training on skills and culture sensitization was done to all the colleagues in the plant.

At Mondelez, they set targets for diverse workforce and see how to optimize it among different functions. The performance is analyzed and target setting is done at the end of the year.

**TATA-** It has launched Tata LEAD, a group D&I initiative on March 2014 where initial focus area was on gender diversity. D&I sensitization workshops are held that focuses on the business case for D&I, business practices around the globe, understanding of unconscious biases and action planning to foster change within our own organizations and teams. Various policies and processes are in place to support women during their critical life stages like motherhood, taking care of elders, etc. These include reintegration programmes post maternity leave, sabbatical policies and flexibility in work schedules where required.

**Amazon Global-** They have shaped various affinity groups, that plays an important role in building internal networks for career development, advising Amazon business units, leading in service projects, participating in policy discussions, and reaching out to communities where Amazonians live and work. Since 2015, Amazon has presented AmazeCon, their biggest internal conference at Amazon, to highlight the significance and business advantages of gender diversity.

They have an innovative parental leave benefit that includes pre-partum leave, postpartum leave, and a Ramp Back Program, which allows for flexible time and a choice of part-time options when returning to work. Parental leave can be taken in one continuous period or split into two periods within 12 months of birth or adoption. In addition, they offer an innovative Leave Share program, which offers employees the opportunity to share their parental leave with a working spouse or partner whose

employer does not provide paid parental leave.

**Amazon India**-They focus on talent acquisition, talent development and talent retention. For Talent acquisition, they do target hiring for diversity employees. The branding and marketing is done in social media for hiring diverse employees. For the purpose of Talent development, they have specific leadership program and mentoring circle to create developmental intervention for diversity at Amazon. Specific affinity groups for women in tech, women in finance, women in operations etc. are built to help bring in more diversity in the organization. For the purpose of Talent retention, they ensure that the people are engaged and policies are framed for women so that they are retained in the organization.

**RPG**- They have formed a Diversity and Inclusion CoE—a body working towards making an inclusive workforce which encourages diverse thoughts, cultures, age, gender. This COE consists of representatives from all group companies.

"WE@RPG" is a women's network that provides a common platform for women across all companies to network and learn from each other. Their journey started off with gender sensitization to create inclusive environment for them. Their goal is to have at least 25% of the workforce to be women and 20% women leaders at VP+ grades by 2021.

Extra 10% is given to the consultant for bringing in more women to the workforce. Various workshops, role plays, storytelling sessions are taken place for gender sensitization.

For the inclusiveness of the specially abled they have created PWD friendly infrastructure. Some events are held where people who are specially challenged but achieved a lot in life are invited to create awareness.

**Ernst & Young**- They conduct unconscious bias training and external third-party seminars. They have a monthly D&I newsletter and employee network groups are also formed for diversity and inclusion at EY. The POSH training i.e. Prevention of Sexual Harassment for women is also done for women. They have come up with an initiative called I Stand With Her where the male employees have to make a pledge to stand with women employees and avoid biases in the workplace. They signed a pledge for the same and are appreciated by some kind of gifts. Benefits of extended maternity leave are also provided to the women. In the wake to increase number of women in the workplace, an initiative called RecruitHer was launched i.e. if someone refers a woman for a position then they would get an additional referral bonus.

➤ The Focus Areas that are considered in diversity and inclusion in these organisation

Aditya Birla Group- Gender, Generation

Godrej- Gender, LGBT, PWD

Mondelez- Gender, PWD

TATA- Gender, LGBT, PWD

Amazon India - Gender and LGBT

RPG- Gender, PWD

EY- Gender, Generation, PWD, Cross culture

- The key success drivers in terms of leaders for D&I initiatives for the organizations

Aditya Birla Group- Business directors, Chairman, HR directors

Godrej- Business heads

Mondelez- function wise Diversity Champions are formed

TATA- Business leaders

Amazon India- No special team, it is a part of HR work

RPG- Chairman

EY- HR leaders of EY

- The metrics used for diversity and inclusion to know the progress in the organizations

Aditya Birla Group- Recruitment and Attrition

Godrej- Recruitment, Attrition, Performance, Promotion

Mondelez- Recruitment and Attrition

TATA- Recruitment and Attrition

Amazon India- Recruitment, Attrition and Development

RPG- Recruitment, Representation

- The organizations having scorecard to measure the progress in terms of D&I

Aditya Birla Group- Yes and at the business level

Godrej- Yes and both business and group level

Mondelez- Yes and at the business level

TATA- Yes and at the business level

Amazon India- No they do not have a D&I scorecard

RPG- Yes, they have a D&I scorecard

- The review mechanism of the organization's D&I objectives

Aditya Birla Group- Reviewed Quarterly

Godrej- Reviewed Quarterly

Mondelez- Yearly

TATA- Reviewed Annually

Amazon India- Reviewed Quarterly

RPG- Reviewed Quarterly

EY- Service lines receive reports from HR and it is only reviewed by the partners

- The communication plan for the D&I initiatives carried out in the organisations

Aditya Birla Group- It is carried out by a lot of videos with learning modules, workshops are conducted, eLearning is done, and sensitization is done in the early stage itself i.e. at the time of the induction. In the near future they plan to focus on spreading success stories of women employees and having more interactions with the leaders in the videos.

Godrej- The D&I objective is communicated through videos that have leaders in it to create awareness for the same, workshops are conducted, resource group like women networks are formed to drive diversity and inclusion.

Mondelez- It is done function wise but the guidance is given by the D&I team centrally through referrals. Various communities are formed to drive diversity in the organization.

TATA- The D&I objective is communicated centrally and at group level through intranet. Amazon India- Their internal communication mechanism is done through newsletters, magazines and blogs.

RPG- It is done through mailers, posters and there are sessions organized to sensitize the employees about diversity and inclusion

EY- The D&I objective is communicated through brochures, seminars are held and they hang posters to sensitize about the same.

### Secondary Data Collection:

#### Case 1:

CEB (Corporate Executive Board) report 2012, BAE Systems, a defence and aeronautic company was struggling to make progress on its D&I (diversity and inclusion) objectives, despite business leaders understanding the D&I business case. Therefore the company identified two primary barriers it needed to address.

Challenge1: The business units (BU) found it difficult to achieve common D&I objectives. So that they came up with two solutions:

Solution1: BAE Systems' business leaders came out with a solution of determining their diversity priorities based on the level of maturity they can achieve across a fix set of categories.

Solution2: Making long-term objectives easier to achieve by setting interim steps.

All business leaders established their five-year aspirational maturity levels across the four fixed categories. These aspirations drive five-year D&I objectives that translate into one-year D&I objectives. The head of D&I reviews five-year and one-year D&I objectives and provides additional input.

Challenge2: Business leaders were not committed for making D&I progress:

Solution: BAE Systems' business leaders shared their D&I progress with the CEO and with peers and received a bonus based on that progress. A scorecard was used to analyse progress.

#### Case 2:

CEB (Corporate Executive Board) report 2017, The Volvo Group is a Swedish multinational manufacturing company. They faced a challenge of creating a universally understood measure for progress against D&I goals. They came out with a

- Creating a standardised D&I scorecard that provided a standardized way to measure D&I across the organization.
- They have discussions about the importance of diversity and inclusion for the

leaders, teams and organisation that focuses on the actions for improvement.

- The business units submitted their results and compared their success to other units as part of Volvo's annual internal D&I metrics report.

## DATA ANALYSIS OF PRIMARY DATA

Sr no.	Company Name	Scorecard (Y/N + Level)	Success Drivers	Focus Area	Metric used	Review Mechanism
1	Mahindra Group	Y + BUSINESS LEVEL	Group and sector diversity council	Gender,Generation,PWD,LGBT,Race, Socially disadvantaged	Recruitment and Attrition	reviewed Quarterly
2	Aditya Birla Group	Y + BUSINESS LEVEL	business directors , chairman, HR directors	Gender, Generation	Recruitment, Attrition	reviewed Quarterly
3	Godrej	Y+ both at Business and Group level	business heads	Gender,LGBT,PWD	Recruitment,attrition,performance, promotion	reviewed Quarterly
4	Mondelez	Y + BUSINESS LEVEL	function wise diversity champion formed	Gender, PWD	Recruitment,Attrition	Yearly
5	TATA	Y+ both at Business and Group level	business leaders	Gender,PWD and LGBT	Recruitment, Attrition	reviewed Annually by business leaders
6	Amazon India	N	no special team,part of hr work	Amazon India: Gender and LGBT	Recruitment,Attrition,Development	dashboard to review Quarterly
7	RPG	Y	chairman	Gender,PWD	Recruitment, Representation	reviewed Quarterly
8	E&Y	not provide by the company	hr leaders of EY	Gender parity,Engaging GenY,Differently abled,Cross Cultural inclusion	not provide by the company	Service lines receive reports from HR and it is only reviewed by the partners

Indicates the companies having D&I scorecard  
 Indicates the information on Mahindra Group

**Figure:** consolidation of the primary data collected

### DATA INTERPRETATION of Primary Data ( 7 companies benchmarked)

The emerging insights that are drawn by the analysis is given below:

5 Companies have D&I Scorecard out of which 3 have scorecards at Group Level:

- The common focus areas to achieve the diversity and inclusion are **Gender, PWD and LGBT**
- The commonly used metrics are **Recruitment**- in which the visions are set by 3 (Aditya Birla Group, RPG and Mondelez) out of 5 at group level and then driven into the businesses and **Attrition**

- The success drivers are the **Business leaders** at Group and business level as the involvement of the leaders in the D&I initiatives. The review of progress helps the organisation to analyse the performance and progress of the diversity and inclusion
- The Scorecards are reviewed **Quarterly by 3 companies** and **Annually by 2 companies** and it is done by its Business heads

#### Data interpretation of Secondary Data:

The key takeaways from both the case studies are:

- The organisation's incremental D&I objectives and outcomes helps to improve the workforce diversity
- The organisations can drive positive team and healthy competitive environment by building a diverse workforce and creating an inclusive work environment

### **RECOMMENDATIONS**

❖ D&I scorecard should be prepared at the group level at Mahindra as it will help to create a consistent definition of D&I across the organization. The scorecards will help to build action plans on the key focus and improvement areas and will help to set new goals for the next year.

(D&I initiative coming from the top most leaders will bring more seriousness to the whole concept)

- ❖ Targets should be set and vision should be defined at a Group level but driven at the business level. Targets should be reviewed consistently at both business and Group level by top management to identify gaps, course correct and adapt to changing business needs.
- ❖ Accountability of success in D&I (diversity and inclusion) for a particular business should not be only with the respective business leadership but also with the Group leadership. Such leadership involvement creates a sense of accountability amongst the business leaders to achieve their objectives.
- ❖ For Recruitment of diverse groups- Incentivizing i.e. bonus component tied up with progress of the D&I objectives (implemented by Mondelez, RPG, E&Y). The involvement of the leaders, employees' visibility and financial linkage helps the organization to achieve the diversity and inclusion objectives.
- ❖ To know the progress of the D&I objectives, the review of the scorecard should be done on Quarterly basis. Reviewing the progress of D&I will create a sense of transparency that shows the culture of continuous improvement and allows for productive feedback and healthy competition.

### **CONCLUSION**

There has been awareness in the organizations for diversity and inclusion lately. Many organizations are implementing some diversity and inclusion practices and adopting some policies for their employees to stay longer in the organization and maintain a diverse workforce.

The innovative companies understand the societal and business advantages of equality. It takes out the true potential of the diverse individuals for the organization's growth and value creation goals.

It is about creating equal opportunities for all the people whether be it gender, social background, physical ability, age or race.

The paper explored the meaning and importance of diversity and inclusion for various organizations and suggested improvements for companies to help them maintain their diversity and inclusion objectives.

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# Impact of GST on Works Contract

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## **ABSTRACT**

The project is about "A STUDY OF IMPACT OF GST ON WORKS CONTRACT ". The project focuses on GST regime, the service tax is applicable for work contract only on service part. As per the listings, the construction of the building, maintenance, and repairing of plant and machinery, installation, repair, alteration of any movable or immovable property comes under works contract. Study shows the impact of GST on works contract it includes impact on profit, turnover, different materials used in construction.

For the analysis over different companies' data collected from them to get the deeper understanding of impact of GST on different firms and different size of firms under work contract. Works Contract under GST Law is concerned, is a mostly discussed area, as there are substantial changes in this area under GST regime. Hence, a structured and conceptual learning on the subject matter is highly essential as Works Contract involves a significant part of the business expenditure. The Study would include of understanding the practical implication of GST on Works Contract. Various opinions of companies in same line of industry with regards to implementation of GST on works contract. Various advantages and disadvantages of GST to business.

## **INTRODUCTION**

Construction and Real estate has been booming sector in India, which is facing a major slowdown in the aftermath of demonetization .it has always been a sector riddled with litigation owing to multiplicity of taxes and dual administration mechanism; thereby exposing it both the Central and State levies. GST is an Indirect Tax which has replaced many Indirect Taxes in India. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017. As per section 2(119) of CGST Act "works contract" is defined as a contract for: building, construction, fabrication, completion, erection, installation, fitting out, improvement, modification, repair, maintenance, renovation, alteration or commissioning of any Immovable property wherein transfer of property in goods (whether as goods or in some other form) is involved in the execution of such contract. A works contract is treated as supply of services under GST. Under the previous regime, there were issues in tax treatment of works contract. Both the Central Government (on the services component of a works contract) & the State Governments (on the sale of goods portion involved in the execution of a works contract) used to levy tax. Thus, the same contract was subject to taxation by both Central and State Government. GST aims to put at rest the controversy by defining what will constitute a works contract (applicable for immovable property only), by stating that a works contract will constitute a supply of service and specifying a uniform rate of tax applicable on same value across India. Thus, under GST, taxation of works contract will be simpler and easier to administer. According to GST model law for Works Contract: - Since there is no scheme For Works Contract As 'Works Contract Has Been Assumed As Supply Of



Service' So No option is left for Contractors. They will have to pay Direct Tax on the Contract Amount.

For Example : Suppose My Contract Bond Is Of Rs.1,00,00,000 .Purchase Material For Which Invoices From Registered Dealers Is Of Rs.30,00,000.I Paid Tax @15% Gst On Materials i.e Rs.4,50,000 .My TDS Deducted @1 % i.e Rs.1,00,000 Now Calculation Of Tax If 18% Then The Tax Liability Is Rs.18,00,000 .In This Case I Will Get Benefit Of Input Tax Credit (ITC) Subtracting ITC From Net Tax Liability=18,00,000-4,50,000= Rs,13,50,000 .So My Net Tax Payable Will Be =13,50,000 - 1,00,000 (TDS Deducted)=12,50,000.

## **REVIEW OF LITERATURE**

6th International Conference on recent trends in Engineering, science and management (8thJan 2017) - A Comprehensive Guide by Clear Tax for Reckitt Benckiser: Studied the introduction of GST and its impact in India. GST in India and to understand the difference between indirect tax and GST. Indian Tax structure Analytical Perspective Sept 2015 studied. (Benckiser, 2017)

Panda and Ratel (2015) analyzed about what the impact of GST (Goods and Services Tax) will be on Indian Tax Scenario. The authors have stated with a brief description of the historical scenario of Indian taxation and its tax structure. Then the need arose for the change in tax structure from traditional to GST model. GST has been discussed in detail in this paper by the authors as the background, silent features and the impact of GST in the present tax scenario in India. (Ratel, 2015).

The dawn of a new era By Satya Poddar GST would free India from the shackles of archaic indirect tax laws: Tax Partner – Policy Advisory Group, EY India: october-december 2014. The author have stated description of the GST design explaining how GST would also bring in a modern tax system to ensure efficient and effective tax administration. (Poddar, october-december 2014)

Abhishek Jain, Tax Partner, EY India, the author stated that how does GST mean for the infrastructure sector. Ideally, within the broad structure of a consumption-type, destination-based, credit-invoice GST, tax should be levied comprehensively on all goods and services at a single rate to achieve the objectives of simplicity and economic neutrality. (Jain)

Nishita Gupta studied the relevance of implementing GST in India through her paper "Goods and Service Tax: Its Impact on Indian Economy". She tried to list out the shortcomings of present taxation system. Tax policies an important role on the economy through their impact on both efficiency and equity. (Gupta)

## **OBJECTIVES OF THE STUDY :**

To understand the Practical implication of GST on works contract.

Ensuring the availability of input tax credit. i.e. tax credit for components used in construction

Evaluate the Impact of cost of construction under GST in work contract.

## **PROBLEM STATEMENT**

The impact of GST is Unprecedented & Embryonic and challenging.

## **SCOPE OF THE STUDY:**

The scope would include of understanding the practical implication of GST on Works Contract.

Impact of ordinance of GST on profit and functioning of the business.

To understand the cost effect on Construction Companies after implementation of GST.

Various opinions of companies towards filing of returns of GST & payments of GST returns.

Various advantages and disadvantages of GST to business.

Understanding of various norms which are applicable to the works contract.

## **RESEARCH METHODOLOGY**

### **TYPE OF RESEARCH DESIGN**

The type of research that will be used in this study is Exploratory research. according to its name merely will aims to explore specific aspects of the research area. The Research purpose is General to generate the insights about the situation. The Research process is flexible and unstructured. Analysis of primary data is quantitative.

### **SOURCES OF THE DATA**

Primary Data: The primary data is collected by the Questionnaire method. Questionnaire is the most evident method of data collection, which is comprised of a set of questions related to the research problem. For the analysis and interpretation, data collected from sample size of 37 companies to get the deeper understanding of impact of GST on different firms and different size of firms under work contract

Secondary Data: The secondary data is collected from the Various Research study, books, websites.

### **TYPE OF SAMPLING**

The type of sampling used for the research is a probability sampling method it is a method of sampling that utilizes some form of random selection. In that it is appropriate for this research is Simple random sampling technique because the response is covered from different companies in construction industry.

### **ANALYSIS AND INTERPRETATIONS OF THE DATA COLLECTED WITH RELEVANT TABLES AND GRAPHS.**

As noted, The Scope of Works Contract is one with a service element attached to the material being transferred in a sale. Therefore, value-added tax (VAT) is payable on the material being transferred, and service tax is payable on the service component.

Impact of GST on ensuring the availability of input tax credit. i.e. (tax credit for components used in construction).

Earlier in construction industry when it comes large companies dealing with n no of suppliers, it was difficult to understand whether supplier is a registered or a bogus dealer.

For Example, Assessment Year 2016-2017, the scrutiny happens after 4 to 5 years as there are pending matters so while scrutiny the company realizes that bills from suppliers or third parties with whom they did business were bogus ones, so to prove that it becomes difficult and the company has to pay taxes and penalties on behalf of them. Assuming a company has to pay Rs.1000000 because of bogus suppliers so calculation is 1000000, company has to pay addition to it, every year interest on it as well. The interest is charged every month, For 12 months it is 1.5% and 13 months = 2% and 36 months = 72% of particular amount. As scrutiny is after x years that many years interest is charged on company, so total it becomes 90% by adding up all, which comes to approx. the same amount to be paid so interest becomes Rs.900000 so total liability paid by company becomes Rs.1900000 which is almost double the amount. As per GST norms, GST has to be filed every month so it is easy to understand that dealer you are dealing with is genuine or not. As the dealer doesn't pay GST, you can remind them so liability doesn't come on company and company gets advantage that next time if he is supposed to deal with that third party or not.

Evaluate the effect of cost of construction under GST in work contract.

Table 1: Pre- & Post GST on Construction material

Materials	Tax structure				Post GST	
	Excise duty	MVAT	Octroi	Effective rate	Effective rate	Difference
Cement	12.5%	13.5%	3% or 5.5%	31.52% or 34.71%	28%	3.52%
Iron and steel	12.5%	5%	3% or 5.5%	21.67% or 24.62%	18%	3.67%
Ready mix concrete	6%	13.5%	3% or 5.5%	23.92% or 26.93%	18%	5.92%
Cement bricks	12.5%	6%	5.5%	25.81%	28%	2.19%
Sand lime bricks /fly ash bricks	12.5%	6%	5.5%	25.81%	12%	13.81%
Works contract services	6%	8%	-	14%	18%	4%

The table showcases the rates applicable on different construction materials in pre and post GST, their effective rates and impact on it, which affects the cost of construction and profit as well. Cement has an effective rate of 31.52% and post GST 28%, the difference of 3.52%, Iron and steel has an effective rate of 21.67% and post GST is 18% with a difference of

3.67%, Ready mix concrete has effective 23.92% and post GST of 18% with difference of 5.92%, Cement bricks has effective rate 25.81% and post GST is 28% with difference of 2.19% i.e only material where GST is proved to be benefited . Sand bricks has effective rate of 25.81% and post GST is 12% with difference of 13.81% , Works contract services has effective rate of 14% & post GST is 18% with difference of 4%.

Table 2 : Calculation of Tax liability for the FY. 2016-2017

Particulars	Amount
Total turnover	Rs.10,00,00,000.00
Less	
Purchase	Rs.4,50,00,000.00
Labour	Rs.3,50,00,000.00
Financial Expense	Rs.1,00,00,000.00
Salary & other Expense	Rs.40,00,000.00
Total	Rs. 9,40,00,000.00
Profit	Rs. 60,00,000.00

This Table explains with a example of total turnover deducting purchase which included labour, financial expense, salary, other expense showing profit .

Table 3: Calculation of Service Tax working.

Sales Tax Working:				
Option 1: Rule 58				
Bifurcation of Purchase:				
Purchase ratio	Amount	Applicable rates	Tax Amount	Purchase Amount
44.44%	Rs. 2,00,00,000	12.50%	Rs. 25,00,000	Rs. 1,75,00,000
55.56%	Rs. 2,50,00,000	5%	Rs. 12,50,000	Rs. 2,37,50,000
Total Purchase:	Rs. 4,50,00,000.		Rs.37,50,000	Rs. 4,12,50,000
Therefore, Input tax Credit under rule /58 is Rs.37,50,000				

The Table explains the working of sales tax working of Rule 58. Service tax working shows bifurcation of purchase in purchase ratio of 44:55 for which the amount is 20000000:25000000 and the applicable rates are 12.5% and 5% for which tax amount 2500000 and 1250000 so the total tax amt Rs.3750000 while balance amount is purchase amount with total of 41250000.

Table 4 : Calculation of Taxable Turnover

Taxable turnover				
Total Turnover	Rs. 10,00,00,000.00			
Less				
Labour 30%	Rs. 3,00,00,000.00			
balance	Rs. 7,00,00,000.0			
Bifurcation				
Ratio	Amount	Applicable rate	Tax Amount	Total
44.44%	Rs. 3,11,08,000	12.50%	Rs.38,88,500.	Rs. 2,72,19,500
53.56%	Rs. 3,88,92,000	5%	Rs.19,44,600.	Rs. 3,69,47,400
Total	Rs. 7,00,00,000		Rs.58,33,100	Rs. 6,41,66,900
Therefore, total Tax payable is Rs.57,63,100				

This Table explains taxable turnover less labour and bifurcation of purchase in ratio of 44:55 for which amt is Rs.31108000 & Rs.38892000 then Applicable rate is 12.5% ,5%, tax amt of Rs.3888500, Rs.1944600 and tax payable amount of Rs.5763100.

Table 5: Calculation of Liability

Total Turnover	Rs. 10,00,00,000
Tax Payable	Rs. 57,63,100
Less	
Works contract Tax	
TDS i.e 2% of total turnover which is deducted initially by MCGM	Rs. 20,00,000
Input tax credit	Rs. 37,50,000
Liability	Rs. 13,100

The Table explains calculation of total turnover then tax payable less work contract tax ,TDS leaves with input tax credit and liability after input tax credit is Rs.13100

Table 6: Calculation of Composition scheme.

Option 2: Composition Scheme i.e. 5% on Total turnover			
Total Turnover		Rs.	10,00,00,000.00
Less			
Tax Payable	5%	Rs.	50,00,000.00
Input Tax Credit Available		Rs.	37,50,000.00
4% Retention ( on Purchase 4.5 Cr)		Rs.	-18,00,000.00
Total Input Tax Credit		Rs.	17,50,000.00
TDS	2%	Rs.	20,00,000.00
		Rs.	39,50,000.00
Liability		Rs.	10,50,000.00

The Table explains the calculation of option 2 i.e. Composition scheme of 5% with deduction of input tax credit available, retention, TDS from Tax Payable and liability of Rs10,50,000 .

Table 7: Difference of Amount paid under both rules.

Liability paid	Amount
Rule 58	Rs13,100
Composition Scheme	Rs 1050000

The Table explains that amount paid in Rule 58 was Rs.13,100 and in Composition Scheme is Rs.10,50,000

Table 8: Calculation of GST in Fy.2017-2018

Turnover		Rs. 10,00,00,000.
Purchase		
Labour		Rs. 4,50,00,000
Interest		Rs. 3,50,00,000
Salary & other expenses		Rs. 50,00,000
Other Charges		Rs. 1,00,00,000
Total		Rs. 9,50,00,000
Profit		Rs. 50,00,000

Tax Calculation	
GST i.e. 12% of total turnover	Rs. 1,20,00,000

The Table explains calculation of GST with total turnover and deduction of purchase, Labour, Interest ,Salary & other expenses ,other charges and Left with the profit of Rs.5000000 and the tax calculation of 12% on total turnover which is 12000000.

Table 9: Bifurcation of Purchase.

Bifurcation of purchase	Rs.4,50,00,000		
Purchase Ratio	Amount	Applicable Rate	Amount
40%	Rs.1,80,00,000	28%	Rs.50,40,000
40%	Rs.1,80,00,000	18%	Rs32,40,000
20%	Rs.90,00,000	5%	Rs.4,50,000
Total	Rs.4,50,00,000		Rs.87,30,000
Therefore, Input Tax Credit Rs,87,30,000			

The Table explains Bifurcation of purchase ratio in 40:40:20 on amount of 45000000 and then applicable rates of 28%,18%,5% and the respectively the amount and calculation of input tax credit comes to 45000000.

Table 10: Calculation of Tax liability

Tax Payable	Rs. 1,20,00,000.00
Less	
Input tax credit	Rs. 87,30,000.00
Tax liability	Rs. 32,70,000.00

The Table explains calculation of Tax payable from which Input tax credit and Tax liability is deducted.

94.4% Respondent agree that there should be modification or change in rule of generation of EV bill as it has become stressful for companies to generate challan and pay for internal transfer of good within the city. 50% of Respondent do agree that process of filing GST is easy when compared to earlier taxation system. 72% of respondent are aware about Harmonised system of nomenclature (HSN) code which is good sign of awareness to it. 100% of Respondents agree that filing of goods and service tax return (GSTR 1) and goods and service tax return 3 (GSTR 3) is more convenient than earlier filing of return.

Registration under GST have benefited a lot to companies as earlier companies dealing with large no of suppliers couldn't realize the supplier has paid tax or no which company use to suffer when there is scrutiny after 3-4 year, they use to come to know that supplier is bogus and company had to pay that amount of tax with penalty and interest. So now benefit to get registered with GST company comes to know when supplier doesn't pay tax. Major of respondent do agree that doing payment of GST tax can be done easily online.

Survey says that there are 54.29% people think that yet they pay double taxes and 45.71% think that they don't pay double taxes. Here the analysis are controversial as 50% feel they pay double taxes and 50% think they don't. The reason can be that people deny of paying double taxes as now they get set off it so when you compare precious structure and now taxation amount is almost same but now you get setoff which use to not get earlier. Respondent who agree to it would be considering that even after getting set off it has impacted the profits majorly so as profit is being reduced even after getting setoff.

When it comes to challan generation, that all the companies have a point of view that it has negative impact on the company as at times juniors fill the details of challan so because of mistake in filing challan gets generated as then that amount has to be paid while filing a return and to make the changes again it is a long procedure. Contract to be followed. so, respondent want an edit option available or any modification option to be available so that if any mistakes are there than it can be rectified.

Respondent agree to the statement that filing GST every month creates a financial crunch as GST is paid every month of 20th then waiting for setoff next month creates a financial crunch as money gets block for that period of time and simultaneously other payments get affected.



## **CONCLUSION**

GST impact on business is change in business structure and models. There a When there is comparison of tax liability in vat structure and rule 58 with GST, was comparatively less than GST. In GST structure tax liability is increased. GST have benefited in effect of cost of construction, with certain materials, where are majorly used in construction such as cement and ready-mix concrete. GST have also benefited in terms of getting setoff against bills of these materials. GST have impacted profit, it has led to decrease in profit for construction companies.

GST negative impact is that is does not consider labour component which is 80% part of any construction which use to be considered earlier. According to the analysis of survey, companies are majorly aware about GST norms and regulations.97.3% companies are registered under GST with GST registration no. Respondents are regularly using the GST site, 40% of them are only satisfied with performance as now GST filing is completely online, most of times GST site is blocked and congested which is time consuming.

Training professionals is required as they can give proper guidance to queries. Respondents do frequently use the GST site more than thrice a month as everything is online and digitalized.

Hence, a structured and conceptual learning on the subject matter is highly essential as Works Contract involves a significant part of the business expenditure. Let's accept the new challenges before us with an attitude to learn, delearn and re-learn, so as to contribute efficiently and effectively to the organization, we are working for and finally extend our sincerity towards Nation building.

## **RECOMMENDATIONS:**

Implementation of GST have generated various doubts and confusion among the people. To overcome this some suggestions were listed here: Small retailers should get awareness classes regarding the benefits of GST. They should be trained and helped to register in GSTN. Tax collecting officers should be trained and tested to know whether they are capable handling new situations. Government should arrange online/telephonic helpdesks or helping hands for rural area. When it comes to filling the GST return online, suggestion that increase the efficiency and speed of the site as most of times it is congested. When it comes to creation on online challan generation, modification or edit option should be available as incase of any deviations so it becomes easier for company and organisations. Generation of EV bill new norm should be modified as it becomes stressful for businessman to pay charges on transfer of goods within the city. It creates financial crunch for businessman as they get setoff next month so process of getting setoff should be for less period of time. Paying GST every month creates problems because usually supplier bills are not received on time which leads to delay to paying taxes so suggestion that GST should be filed every 3 months or quarterly so it benefits the company and government as well.

## **LIMITATIONS:**

The study is limited and not covering procedures of GST-License, rental disposal consideration as per contract. The other aspects considering GST with sub contract, non-resident taxable person consumption under works contracts. The study does not cover all

the part of works contract such as fabrication, completion, erection, installation, fitting out, improvement, modification, repair, maintenance, renovation, alteration or commissioning. The study doesn't focus on Supply of Works Contract as defined in clause (119) of section 2 of the Central Goods and Services Tax Act, 2017, supplied to the Central Government, State Government, a Local Authority or a Governmental Authority or a Government Entity by way of construction, erection, commissioning, installation, completion, fitting out, repair, maintenance, renovation, or alteration .

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# Strategies To Make Work Practices More Ecofriendly

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## **Introduction:**

Sustainability of environment in this ever-increasing concrete jungle made by man seems to be synonymous with seeing an oasis in a desert. (we all want this, but don't know the steps as to how to achieve it). Due to ever increasing environmental problems; organisations and industries, companies and firms, are coming up with environmentally friendly plans; keeping in consideration that they are environment sensitive but not also losing on making profit and development in other economical and financial factors. They are focusing on a peaceful co-existence between human and nature and so are trying to live a legacy for the future generation to follow. These plans will also consider in reducing the businesses' negative impact on environment. Organizations and companies are aiming at producing products, plans, capital formation, which will exist peacefully with the environment as well as also satisfy human wants. They would also save money power and energy.

## **1.1 Objectives**

The main objective of this study is to:

- Suggestions to expand the goal of attaining environment sustainability with business organisation.
- To understand the importance of eco-friendly business
- To develop a green workplace which would encourage and arouse sensitivity among citizens
- To promote environmental friendly policies through rewarding employee for doing so.

## **1.2. Methodology**

The study of this literature is primarily based on secondary data. The literature related to the topic collected from different database, website and other available sources. The review of collected literature was done in detail.

## **1.3. Literature review**

The literature suggest that how the sustainability of environment in business one has to increase to modulate their organisation to become exclusive environmental champions. Adoption of environmental practices in organisation with the help of human resource management practices is the key objective of this literature.

## **1.4. Following are some eco-friendly workplace tips:**

**\*Green recruitment** -recruiting employee who are aware with environment sustainability in business and very well known about the processes of recycling, conservation and creating more eco-friendly world.

**\*Green training and development-** To make aware the employee the Value of environmental management, train them in working methods of reduce waste,

methods of conserve energy, diffuse environmental awareness within the organisation and provide opportunity to engage employees in environmental problem-solving.

\* **Paperless Office-** With the introduction of information Technology the consumption of paper in the office has been reduced. Today E-business and learning have changed the methods and procedures at offices converting them into paperless offices. Paperless office is a work place where the use of paper is either restricted or eliminated by converting important official documents and other papers into automated workflows. If you need to share a document with others, collaborative wifi-connected devices. Office can use mails, video conferences, WhatsApp messages for paperless communication.

\***Conservation of energy-** at the UK arm of Sky has started a campaign where the employees are asked to turn off PCs, TVs, and lights when leaving, to use 100% renewable energy, and introduced solar lighting. Whereas the HR department of other British organizations is emphasizing upon their travel policy which promotes car sharing and the increased use of public transport. In addition, HR systems such as e-HR are seen to be able to help management and employees track their own carbon emissions

\***Encourage remote work-**Not everybody needs to be in the office every day. Cut out the commute and cut down on your carbon footprint by encouraging employees to work from home on occasion, schedule permitting of course. Remote work has also been proven to increase productivity, and it's high on the workplace wish-list for millennials.

\***Use energy saving settings-** Most office electronics have an energy-saving mode — from printers, to computers, to meeting-room projectors like our Ultra Short Throw range. If equipment tends to get left on near-permanently in your workplace, these settings can really help to reduce your environmental impact and your electric bill. You can also go a step further, and switch everything off at the wall before leaving for the night.

\***Choose conference calls-** External meetings can be expensive, time-consuming, and use a lot of fuel. By arranging weekly or monthly conference calls, and arranging to travel for face-to-face meetings only once per quarter, you can cut wasted time, travel expenses and carbon emissions. Of course, a conference call isn't always the perfect substitute for a meeting, but often enough it will suffice.

\***Sign documents online-** Getting documents signed manually is not Always an easy process. Print, sign, scan, send; print, sign, scan, send, print. That's without the inevitable delays, where one party forgets, or loses the email, or can't get the scanner to work.

\***Recycling and waste disposal-** Recycling is the methodology of processing used up materials (waste) into new and useful products. Recycling reduces the use of raw materials that would have been otherwise used to produce new products. Consequently, this practice saves energy and reduces the

amount of waste that is thrown into the dustbins, thereby making the environment cleaner and the air fresher. As a part of their green initiatives, several organizations are implementing recycling program to increase the amount of recycled products and decrease the amount of waste.

#### Example 1. Walmart



By doubling their fleet efficiency, Walmart reducing costs, emissions, the use of a non-renewable resource (i.e. diesel), and wear and tear on their road infrastructure

Key initiatives include: Double Fleet Efficiency

1. Reduce packaging, improving loading and light weighting equipment to get more on every trailer and reduce the number of trips
2. Implement solutions to reduce miles (e.g. shortest, safest routes; reducing excess and empty miles, etc.)
3. Improving the fuel efficiency of their tractors and trailers

#### 2. Tata hotels



The Indian Hotels Company, which runs the Taj chain, is in the process of creating eco rooms which will have energy-efficient mini bars, organic bed linen and napkins made from recycled paper. But there won't be any carpets since chemicals are used to clean those. And when it comes to illumination, the rooms will have CFLs or LEDs. About 5%

of the total rooms at a Taj hotel would sport a chic eco-room design. One of the most interesting innovations has come in the form of a biogas-based power plant at Taj Green Cove in Kovalam, which uses the waste generated at the hotel to meet its cooking requirements.

### 3. Wastewater from textile mills can power battery



A sapphire-coloured dye — a common industrial pollutant from textile mills — could be used to build rechargeable batteries for wind farms and solar homes to store electricity, a study has found. Scientists from University at Buffalo in the US showed that the dye, when dissolved in water, is good at storing and releasing energy on cue. This makes the compound a promising candidate material for redox flow batteries that can be used to stockpile electricity generated from solar or wind farms for days when there is no sunshine or electricity.

### 4. H & M



H & M a well-known brand in clothing , in its collection uses organic fabrics to attain environment sustainability at low price and great style.

## Conclusion

Companies have developed a competition among themselves as to who can be more inclined towards developing good relations with the environment and so can understand its problem and come out with ways to fulfil the respective. Investors are also equally aware of these issues and are also conscious as to where they should invest their money i.e. in the company which working towards achieving the environmental sustainability business goal. Technology will definitely play an important part in fulfilling this goal but more than that the virtues such as discipline, patience and courage will be more suitable to look for a long-term solution. Overall its all about giving the people a decent standard of living and so for the environment.

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# **Study on Investments in Largecap Companies in Pharma Sector**

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The pharmaceutical industry is one of the demanding, dynamic and evergreen sectors of Indian economy. As health care continues to grow and account for a significant portion of the economy the importance of the sector is increasing significantly. Successful pharmaceutical companies possess a broad business base, combined with an in-depth knowledge of this industry. Successful managers need to achieve a level of competence in the area of fundamental management. As the multinationals, the Indian players are facing the challenges and have become niche in both the Indian as well as world market. Indian Pharmaceutical Industry is highly fragmented, with more than 20,000 registered companies, with top 25 companies controlling 70% approximately of the Indian market. India is the largest provider of generic drugs globally with the Indian generics accounting for 20 per cent of global exports in terms of volume.

The objective of this study is to obtain a complete understanding of the Indian Large cap pharma industry practices from its basic principles and its applications. To discover feasible market opportunities via an identification of high growth applications in different areas of the Indian pharmaceutical industry, with a focus on the biggest and expanding markets for the Indian pharma industry. To focus on global industry development through an in-depth analysis of the major world markets for pharmaceutical manufacturing, including forecasts for growth. To establish the essentials of the Indian pharmaceutical markets.

The drugs and pharmaceutical industry plays a pivotal role in the economic development of India. Being a very intense knowledge-based industry, it offers innumerable business opportunities for investors worldwide. Indian pharmaceutical exports accounts for export to more than 200 countries around the world. The annual turnover of pharmaceutical products contributes to about US\$ 17 billion. In recent times, the Indian pharmaceutical industry has shown tremendous growth in terms of infrastructure development, product usage, and technology.

Fundamental analysis is a stock valuation method that uses financial and economic analysis to predict the movement of stock prices. The fundamental information that was analyzed could include a company's financial reports, and non-financial information such as estimates of the growth of demand for products sold by the company, industry comparisons, and economy-wide changes, changes in government policies etc.

## **STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR**

These Largecap companies are those pharma sector companies which are listed on BSE and whose market capitalisation is higher than 5000 crores



List of largecap pharma companies as on 18/06/2018.

NAME	MARKET CAPITALISATION(18/06/2018)
Sun Pharma	1,36,689.52
Cipla	48,653.68
Piramal Enter	45,535.50
Cadila Health	41,492.29
Lupin	41,186.59
Dr Reddys Labs	39,992.08
Biocon	36,993.00
Aurobindo Pharm	36,036.25
Divis Labs	29,171.01
Torrent Pharma	25,559.60
GlaxoSmithKline	23,928.60
Alkem Lab	23,458.65
Glenmark	16,831.33
NatcoPharma	15,361.84
Abbott India	14,703.99
Jubilant Life	12,117.31
Sanofi India	12,026.59
Pfizer	11,919.34
Eris Life	10,057.84
Ajanta Pharma	9,714.27
Alembic Pharma	9,620.91
Ipca Labs	8,562.25
Wockhardt	7,948.80
Dr LalPathLab	7,274.47
Laurus Labs	5,263.32

#### STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR

The price earnings ratio is the ratio of the market price per share to the earnings per share  $PE = \text{Market Price per share} / \text{Earnings per share}$ . To get to the heart of price earnings multiples, an equity DCF model can be used. Restated in terms of the PE ratio, we find that the PE ratio for a stable growth firm can be written in terms of three variables: (a) The expected growth rate in earnings per share (b) The riskiness of the equity, which determines the cost of equity and (c) The efficiency with which the firm generates growth, which is measured by how much the firm can pay out or afford to pay out after reinvested to create the growth.

Earnings per share (EPS) is the portion of a company's Profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's Profitability.  
 $EPS = (\text{Net Income} - \text{Dividends on Preferred Stock}) / \text{Average Outstanding Shares}$

A long term price target(LTPT) is the projected price level of a financial security and includes assumptions of future activity. It represents a security's price that, if achieved, results in a trader recognizing the best possible outcome for his investment. This is the price at which the trader or

investor wants to exit his existing position so he can realize the most reward. Once the expected (intrinsic) value is calculated, the investment decision is rather straightforward and intuitive:

- If Estimated Value < Market Price, do not buy
- If Estimated Value > Market Price, buy

#### STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR

NAME	MARKET CAPITALISATION	PE RATIO	EPS	LTPT
Sun Pharma	1,36,689.52	70.56	8.07	372.7917857
Cipla	48,653.68	33.06	18.28	844.02416
Piramal Enter	45,535.50	87.53	28.8	1329.7536
Cadila Health	41,492.29	37.85	10.71	494.50212
Lupin	41,186.59	30.57	29.8	1375.9256
Dr Reddys Labs	39,992.08	70.56	34.14	1576.31208
Biocon	36,993.00	154.66	3.98	183.76456
Aurobindo Pharm	36,036.25	19.87	30.95	1429.0234
Divis Labs	29,171.01	3.48	315.76	14579.27072
Torrent Pharma	25,559.60	53.07	28.46	1314.05512
GlaxoSmithKline	23,928.60	67.73	41.7	1925.3724
Alkem Lab	23,458.65	32.72	59.96	2768.47312
Glenmark	16,831.33	16.52	36.1	1666.8092
NatcoPharma	15,361.84	21.94	37.95	1752.2274
Abbott India	14,703.99	36.53	189.42	8745.90024
Jubilant Life	12,117.31	45.71	16.64	768.30208
Sanofi India	12,026.59	34.45	151.58	6998.75176
Pfizer	11,919.34	32.92	79.14	3654.05208
Eris Life	10,057.84	34.32	21.31	983.92532
Ajanta Pharma	9,714.27	22.51	49.03	2263.81316
Alembic Pharma	9,620.91	22.77	22.41	1034.71452
Ipca Labs	8,562.25	36.5	18.57	857.41404
Wockhardt	7,948.80	115.14	6.24	288.11328
Dr LalPathLab	7,274.47	43.49	20.07	926.6780915
Laurus Labs	5,263.32	29.84	16.64	768.0891689
		46.172		

VALUATION is done based on average PE ratio. If the companies PE is higher than the average PE ratio then it is case of OVERVALUATION. If the companies PE is lower than the average PE ratio then it is case of UNDERVALUATION.

## STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR

COMPANY NAME	VALUATION	TOPLINE (Revenue)	BOTTOM LINE(Profits)	VALUEPICK	PEG RATIO	GROWTH PICK
Ipca Labs	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Cipla	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Laurus Labs	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Alembic Pharma	UNDERVALUE	INCREASE	DECREASE	VALUEPICK	-	-
Lupin	UNDERVALUE	INCREASE	INCREASE	VALUEPICK		
Sanofi India	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Abbott India	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Alkem Lab	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Aurobindo Pharm	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Divis Labs	UNDERVALUE	INCREASE	DECREASE	VALUEPICK	-	-
Glenmark	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Ajanta Pharma	UNDERVALUE	INCREASE	DECREASE	VALUEPICK	-	-
Eris Life	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
NatcoPharma	UNDERVALUE	INCREASE	INCREASE	VALUEPICK	-	-
Sun Pharma	OVERVALUE	-	-	-	0.0322959	GROWTH PICK

Revenue are considered as topline & net profits are considered as bottomline for financial year 2016-17 & 2017-18. Based on that there is increase & decrease in shown.

## STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR

Financial Analysis includes evaluating company's financial statements i.e. income statement, balance sheet and cash flow statement. Tools like ratio analysis were used to calculate company's financial strength The quick ratio is a financial metric used to measure short-term liquidity. It is calculated as the sum of current assets minus inventories, divided by current liabilities. The quick ratio is a good indicator of a company's ability to effectively cover its day-to-day operating expenses. Successfully managing debt obligations is a major factor in the long-term viability and Profitability of any pharmaceutical company. Ranking is given based on higher the better.

Return on Net worth is used in finance as a measure of a company's Profitability. It reveals how much Profit a company generates with the money that the equity shareholders have invested. This ratio is useful for comparing the Profitability of a company to that of other firm in the same industry. Ranking is given based on higher the better.

The higher the net Profit margin is the more effective the company is at converting revenue into actual Profit. The net Profit margin is a good way of comparing companies in the same industry, since such companies are generally subject to similar business conditions. Profitability ratios measure the efficiency of management in the employment of business resources to earn Profits.

These ratios indicate the success or failure of a business enterprise for a particular period of time. Final Ranking is given based on higher the better.

#### STUDY ON INVESTMENTS IN LARGE CAP COMPANIES IN PHARMA SECTOR

COMPANY NAME	QUICK RATIO	RANK	Net profit Ratio	RONW RANK		RANK	TOTAL	FINAL RANKING
Ipca Labs	0.89	15	6.42	15	8.25	14	44	1
Cipla	1.33	11	6.87	14	8.03	15	40	2
Laurus Labs	1.26	13	9.99	12	14.16	13	38	3
Alembic Pharma	1.15	14	12.86	10	21.2	7	31	4
Lupin	1.4	9	14.72	8	18.94	11	28	5
Sanofi India	2.08	3	13.08	9	16.29	12	24	6
Abbott India	2.12	2	9.53	13	19.94	9	24	7
Alkem Lab	1.51	8	15.45	6	20.24	8	22	8
Aurobindo Pharm	1.38	10	15.43	7	24.55	4	21	9
Divis Labs	1.57	7	26.09	2	19.79	10	19	10
Glenmark	1.9	4	12.21	11	24.68	3	18	11
Ajanta Pharma	1.9	5	21.99	5	22.95	5	15	12
Eris Life	1.31	12	33.27	1	44.99	1	14	13
NatcoPharma	1.73	6	24.05	4	29.46	2	12	14
Sun Pharma	2.36	1	25.06	3	21.41	6	10	15

Fund allocation should be done based on ranking & long term price target .The investment objective of the fund is to provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors( i.e. Largecap industries in pharma sector) of the economy.

# ARTIFICIAL INTELLIGENCE: THREAT OR OPPORTUNITY

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## ABSTRACT

*Artificial Intelligence (AI) has become the latest boom in the technology world and within a short span of time it has changed the way of working anything that is linked to life of a human being e.g. education, employment, economy, communication network, warfare, privacy, security, healthcare, ethics etc. However, the goal of artificial intelligence research is to create an artificial general intelligence (AGI), which can do any intellectual task that the human mind can perform. Despite its user-friendly software, AGI can be very harmful to humans. It may control human economic development, market processes, security policy issues and it can exploit the sources of humanity. Scientists have warned that right after the creation of an AGI, self-recursive super-intelligence AI will soon emerge, which will be an entity beyond the capabilities and performance of the smartest person ever. Chat bots could possibly reduce the need for customer service representatives but on the other hand, complex programming requirements and artificial intelligence would lead to more job creation for data science analytics and service delivery to customers. AI is an opportunity more than threat in every sector.*

**Keywords:** *Artificial Intelligence, Employment, Security, Ethics, Artificial General Intelligence*

## INTRODUCTION

According to the latest technology it is very essential to understand what Artificial Intelligence (AI) is and how exactly it works. As per the definition of AI in Oxford dictionary, Artificial Intelligence is intelligence exhibited by machines. In computer science, it is perceived that machine which is created by human is intelligent enough to adapt itself to the environment and take the appropriate actions that maximizes its chances of success at some goal. Thus, when a machine understands and acts like a human being e.g. learning, planning, reasoning, problem-solving, decisions making, understand the environment and adapting accordingly, also processing as per the languages required etc., then it falls under the category of Artificial Intelligence.

In spite of the way that we are depending on Artificial Intelligence as the following apparatus to change the manner in which we live, work and communicate with each other - which will be for the most part empowered by machine-learning procedures – it stays vague regarding how these intelligent agents will take care of more intricate issues than the ones existing today (e.g. poverty, Epidemics, atmosphere changes) while remembering that the cutting edge in AI today is to brilliantly perceive pictures and insightfully playing amusements.

If we additionally take a gander at the current circumstance and who is associated with riding the influxes of advance in Artificial Intelligence, at that point one can without much of a stretch find enormous ventures like Google, Facebook, Microsoft, and IBM are the ones who are huge players in the field. The advancement in AI is likewise bringing unfaltering outcomes e.g. annihilating employments by the methods for work computerization, one such situation can be found in the Industry 4.0 framework, which is these days being used in the automobile business. Industry 4.0 makes what has been known as a 'brilliant industrial facility' wherein vast number of robots take forward the entire assembling process with the assistance of cyber-physical frameworks, IOT and cloud computing.

**Literature Review:**

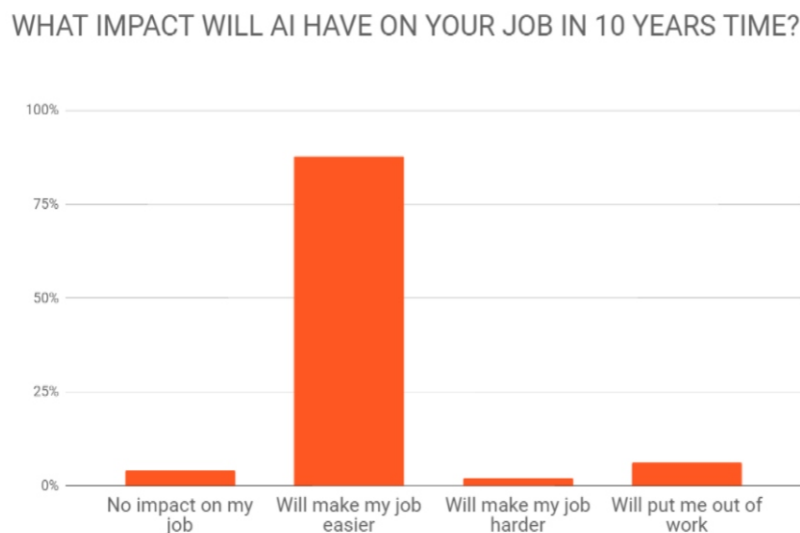
The development of Artificial Intelligence has been very much recent, tracing its origins to the mid-20th century. Even though its origins are very recent, still there exist few influences which have contributed greatly, in fact indirectly, to the visualization of AI. The beginning of AI is the contributions of various academic fields, which is not only limited to history, art, philosophy, logic and mathematics but much more than that. This segment seeks to identify some of those factors, which is in addition to provide a historical account of the remarkable breakthroughs in the AI's evolution.

**AI and Big Data:**

Today AI is highly relying towards the collection, usage and processing of big data. In this manner of accelerating their learning procedure it has been seen that how people think and feel the data is invaluable in AI gadgets, said by Bernard Marr. It is cyclic in nature – more the information more the process is, more data that the system gives, the more it learns and ultimately it becomes more accurate. As per the Marr's opinion, earlier AI's growth was restricted due to two reasons:

- The availability of data set is very limited;
- 
- Instead of real-time, real-life data their nature is as sample data sets.

Figure 1: Impact of AI on the Job in 10 Years' time



AI has transitioned into a data-first approach because of its greater availability of real-time data with the increasing ability to process huge amount of it in seconds.

Marr's argument has been agreed by Randy Bean, noting that the sources of data which is available in greater volume enables the capability in AI and machine learning that remains dormant for decades because of the shortage of data availability, limited sample sizes, and inability to analyse massive amounts of data in milliseconds. The Big Data is now empowering AI in three critical ways which are given as follows:

- Big data technology – Immense amounts of information that already required costly equipment and programming would now be able to be effortlessly prepared; additionally, alluded to as "product parallelism."
- Availability of large data sets – New types of information, for example, ICR, translation, voice and picture data, climate data, and logistics data are currently progressively accessible.
- Machine learning at scale – "Scaled up" algorithms, for example, intermittent neural network systems and deep learning are controlling the leap forward of AI.

The author concludes with the perception that while the principal wave of big data was about speed and adaptability, the following will be tied in with utilizing the intensity of AI and machine learning on how to convey business esteem at scale.

The report of the White House's Committee on Technology credits three elements for the present wave of advance in AI, all identified with data:

- the accessibility of big data from sources including e-commerce, organizations, social media, science, and government;
- which gave crude material to significantly enhanced machine learning methodologies and algorithms;
- Which in turn depended on the abilities of more powerful PCs.

Recent work done in AI has transform the concentration with the data turning into the creatively new support attention to this algorithm was prior supported behind which the computer science rotated, like Russell and Norvig. In fact, Banko and Brill concluded, utilizing through an experiment, that an unremarkable algorithm with 100 million words of unlabelled training data beats the best-known algorithm with 1 million words. Similarly, Hays and Efros could exhibit a similar principle utilizing photographs, concluding that the increasing accuracy of the algorithm was straightforwardly relative to the measure of information fed into it.

On the other hand, distinguishing regions where Deep Learning would require further exploration to manage a few issues observed in big data analytics. These incorporate figuring out what volume of info data is essential for valuable representation from deep learning algorithms and characterizing the criteria for acquiring great information deliberations and representation.

The AI of today, in this way, appears to be extremely unique to its ancestors. With the quantity of modifications to the technology and its relating capacities throughout the years, there may be some vulnerability on the significance and structure of AI, which the following area tries to inspect.

### **Business Opportunities:**

Organizations are indicating expanded enthusiasm for AI because of their restricted data processing abilities and business needs. The explosive growth in organized and unorganized data, the accessibility of innovation like cloud computing and machine learning algorithm, mounting pressure from new rivalry, expanded control, and soaring consumer desires have made an ideal tempest for expanded utilization of AI in the financial services industry.

The advantages of AI exhibits in the banking segment are varied, reaching out to operations, compliance, customer experience, product delivery, marketing, and risk management to give some examples. Abruptly, banking institutions can work with expansive volumes of historical data for every choice taken. For sure, the present astounding advances may turn out to be tomorrow's norm.

In any case, it remains a risk to the accessibility of low-ability roles for people to play. With this, BPO organizations wander into merging machine and HR in performing low-aptitude employments. For instance, human help in chat services can simply take after if the Chatbot fails to address a request. In fact, machines can help individuals for a speedier conveyance of tasks however not thoroughly replace them now.

Nonetheless, with AI continually developing, it is feasible for an opportunity to come where low-aptitude employments will never again require human intervention. Consequently, a possibility of a move towards the services demanded from BPO organizations winds up higher. Soon, entrepreneurs will swing to BPOs to play out their centre business functions, altering low-capacity jobs with mid-or high-aptitude occupations or generally called Knowledge Process Outsourcing (KPO).<sup>5</sup>

### **Making the Most of AI:**

- **To Detect Fraud:** AI is capable for recognizing fake action continuously and distinguishing the following example of suspicious conduct.
- **To Meet Regulatory Requirements:** Technology can be utilized to guarantee that regulatory prerequisites are met, and data is kept up with ongoing monitoring. This makes it less demanding to get any abnormalities ahead of time.
- **To Improve the Client Experience:** AI empowers people to use helpful and extensive knowledge as respects customer behaviour, for instance, and in this way make speedier, more brilliant decisions. A few connections with customers are straightforwardly encouraged by new voice technology or virtual assistants (Chatbots), while different applications are utilized behind the scenes to strengthen marketing communications.
- **To Deepen Client Engagement:** It makes customized and astute items and services, because of new functionalities, more intuitive interactions (utilizing speech recognition, for instance), and warning capacities like personal financial management.
- **To Execute Investment Strategies:** Financial advisors' work is likewise advancing.



Machines will take care of executing and keeping up investment strategies created after some time by the advisors to construct models. Advisors will then convey the data got with their customers.

- **To Facilitate Data Processing:** Although many strategic leaders draw quality from their sharp instinct, diligent work and long years of industry experience, a lot of this knowledge is basically gathered from a more profound comprehension of historically difficult and expensive to process data. AI will facilitate and accelerate this procedure. Very soon it will have the capacity to enable people to push back their handling limitations.

AI will in the long run mechanize monotonous, high-volume undertakings, at a lower cost. It will likewise encourage banks and credit unions deal with their regulatory burden and consistence issues, generate audit trails, and report suspicious behaviours. AI will even have the capacity to anticipate client benefit issues and sales demands. At last, AI technology will empower financial service co-ops to focus on high-value exercises and inventive customer experience solutions.

### **Questionnaire:**

#### ***1. Will Artificial Intelligence really become a threat to humanity?***

The exceptionally antagonistic and apparently irresponsible comments from Jack Ma founder of Alibaba around AI and its probability of making a third World War – will have done little to motivate trust in those that harbor fears around the subject of smart machines. For a few, the two words put together start a feeling of fear, anxiety or even dread. For others, it speaks to the start of an energizing new digital world with untold advantages and opportunities. Unfortunately, be that as it may, it's regularly the previous, which seems to seep more into individuals' awareness. It's maybe then of little surprise that in an recent study by the British Science Association (BSA) that 36% of respondents trust that AI will in the long run takeover or wreck humankind.

#### ***2. How can we take care of security issue in AI?***

AI methods are beginning to be connected to the analysis of secure PC frameworks and ideally, their utilization will enhance the utility of security investigation and confirmation. On the opposite side of the coin, more research is expected to address the security ramifications of AI frameworks. Design, confirmation, and examination methods are required for master frameworks and frameworks with learning components, and these strategies ought to be created now, not after the frameworks are handled.

#### ***3. AI: the challenge to keep it safe***

When training image identifiers, AI scientists can't duplicate this present reality of the world. They teach systems what's in store by encouraging them training data, for example, photos, PC generated pictures, real video and recreated video, however these training situations can never catch the chaos of the physical world. In machine learning (ML), image identifiers figure out how to spot objects by drawing bounding boxes around them and giving them labels. And keeping in mind that this training procedure succeeds in basic conditions, it gets confused rapidly.

It's easy to characterize the individual on the left, yet how might you draw a bounding box around the individual on the right? Would you just include the visible parts of his body, or likewise his hidden torso and legs? These distinctions may appear to be trivial, however they point to a basic issue in object recognition: rarely there is a single best way to define an object.

As this second image illustrates, this present reality is rarely obvious, and the "right" answer is normally ambiguous. However, when ML systems utilize training data to build up their understating of the world, they frequently neglect to reflect this. Instead of perceiving vulnerability and ambiguity, these systems confidently approach new circumstances no uniquely in contrast to their training data, which can put the humans and systems in danger.

## **CONCLUSION**

AI is at the centre of another undertaking to construct computational models of intelligence. The essential presumption is that intelligence (human or something else) can be addressed the extent that image structures and tasks which can be modified in a digital PC's. There is much discussion with reference to whether such a programmed PC would be a brain, or would only mimic one, however AI specialists require not to wait for the conclusion to that discussion, nor for the hypothetical PC that could display all of human intelligence. Aspects of intelligent behaviour, for example, making inferences, solving problems, learning, and understanding language, have just been coded as computer programs, and inside exceptionally restricted domains, such as identifying diseases of soybean plants, AI projects can beat human experts.

Parts of intelligent behaviour, for instance, making inductions, solving problem, learning, and understanding dialect, have quite recently been coded as PC programs, and inside astoundingly limited domains, for example, recognizing diseases of soybean plants, human experts can be beaten by this AI projects. Now the great challenge of AI is to discover ways for representing the common sense, knowledge and experience that empower individuals to complete everyday activities, for example, holding a colossal discussion, or finding their way along a busy street. Conventional digital PCs may be prepared for running such projects, or we may need to grow new machines that can bolster the multifaceted nature of human idea.

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# ANALYSIS ON CURRENCY VOLATILITY IN FOREIGN EXCHANGE MARKET

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## Abstract

The report is an overview of the project titled "Analysis on currency volatility in foreign market" undergone by a student, in currency domain. Since last decade, with the growth of Indian economy, the investment opportunities in India have increased. With liberalization and globalization, the Indian market got open to the world and became very volatile and full of opportunities, which gave rise to FDI and FII in India as many of the countries and financial institution found investment opportunities in India. In this scenario then started the flow of currency, exchange of currency, reserves of currency of other country.

This report provides an insight of foreign exchange market of India and of the world. Report mainly talks about why there is so much fluctuation in any currency and what are the reasons and which currency is the most volatile against dollar. The study includes the overview of Indian rupee and Indian foreign exchange market. For the purpose of this report, the base currency considered is US Dollars and the research currency is Indian Rupee. The five pair of currencies which are considered for research are USD/INR, USD/EURO, USD/POUNDS, USD/JPY and USD/CNY.

**Keywords:** Volatility, Foreign exchange, Indian Rupee, Currency Reserve.

## Introduction

### ➤ Establishment of currency market :

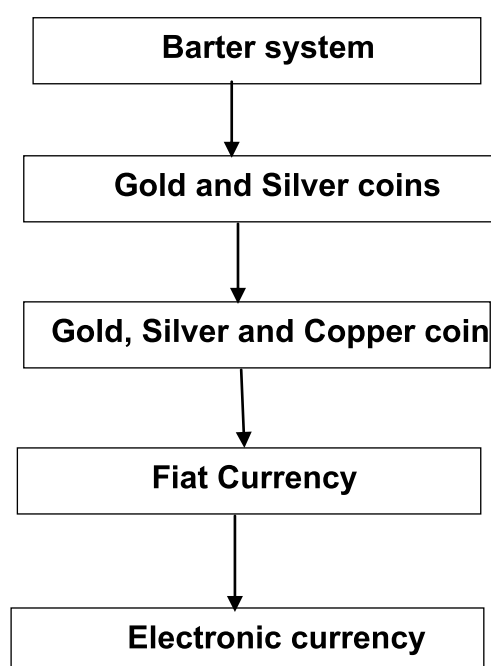
In initial days of mankind, we used to rely on barter system to trade where goods were exchange for goods where there was no value equisation. After the discovery of metal the stone equipments were changes to metals weapons, same was in the case of currency. For ancient coins, metal was turned in to definite shape, size, weight with a mark on it indicating its value and who issued it. The coins were divided in three categories that are highly valued in gold, and silver and copper at lesser value. The physical appearance of the coins changes from oval, square, polygon to circle. In 600 B.C, Lydia was the one to mint the first official currency. By 1200 A.D, china was the first one to come with paper currency. Europe government were the first to issue paper currency, the mobility in currency increased the international trade and also the exchange of currencies from other countries took place which lead to currency market.

For various years, the tender currency of any country was backed by gold. When in 1930, US decided the price of a dollar, gold value was also decided, 1 ounce of gold was at \$35. After the World War II, many countries set value of their currency on the basis of dollar value. This helped the other countries to decide the value of the dollar against their currency. Later, due to inflation the value of dollar was cut to half and hence, 1 ounce of gold was of \$70.

Finally in 1971, the US took away all the gold standard and was no longer the representer of any precious substance. Today, US dollar is the most dominating currency in the forex market and with Great British Pounds it accounts for approximately 50% of all the foreign transactions in the world. Currency has its own life cycle.

Later with the introduction of technology, it made possible to transfer money like information. All the banks after World War II would record the transaction information on magnetic reels. By early 1990's all the transactions between commercial banks and reserve bank were made electronic. In 1950, Diner club were the first to issue credit card. In 1975, social security administration was the first one to offer automatic electronic deposit of money in bank.

Chart 1: The revolution under which the currencies have been through is as follow:



➤ **Global Forex Market:**

The foreign exchange market (Forex, FX, or currency market) is a global decentralized or over-the-counter (OTC) market for the trading of currencies. This market determines the foreign exchange rate. It includes all aspects of buying, selling and exchanging currencies at current or determined prices. The main participants in this market are the larger international banks. The foreign exchange market works through financial institutions, and operates on several levels.

➤ **Methods of exchange rate:**

There are two ways to determine the exchange rates which are as follow:

• **Floating exchange rate:**

Floating exchange rate is determined by the market. Simpler words, the currency is valued at the rate at which the buyer is willing to pay and it also depends on the demand and supply of that currency. Countries like US, Great Britain etc.

• **Pegged exchange rate:**

It is a exchange rate which is determined by the government and artificially set by the government. Government has to work to maintain its pegged rate. It is also known as fixed system rate.

➤ **Global Currency Reserves:**

A reserve currency is a large quantity of currency maintained by central banks and other major financial institutions to prepare for investments, transactions and international debt obligations, or to influence their domestic exchange rate. A large percentage of commodities, such as gold and oil, are priced in the reserve currency, causing other countries to hold this currency to pay for these.

Holding a reserve currency minimizes exchange rate risk, as the purchasing nation will not have to exchange its currency for the current reserve currency in order to make the purchase. Since 1944, the U.S. dollar has been the primary reserve currency used by other countries. The post-war emergence of the U.S. as the predominant economic power had enormous implications for the global economy. At one time, its GDP represented 50% of the world's output, so it only made sense that the U.S dollar would become the global currency reserve. The euro, introduced in 1999, is the second most commonly held reserve currency and then followed by Pounds and Yen. In October 2016, the International Monetary Fund declared China's Renminbi (RMB) as an official reserve currency.

**Table 1:** Data interpreting Foreign exchange reserves as per IMF.

Currency name	2017	2016
US Dollars	62.07%	65.34%
Euro	20.15%	19.13%
Pounds Sterling	4.89%	4.34%
Japanese Yen	4.89%	3.95%
Chinese Renminbi	1.23%	1.08%

Source: IMF

The above table contains foreign exchange reserves of the foreign currency which has been taken in the report for research.

➤ **Journey of Indian Rupee till now:**

• **Before RBI:**

Indian rupee is the official currency of India. Until the 18<sup>th</sup> century, in India gold and silver coins were commonly used. But soon later, private European trading companies establish their own banks, such as the bank of Hindostan in Calcutta, they started issuing the very first version of Indian paper notes..

But however it is only Paper currency Act, 1861 that the British government started producing paper currency notes as we know it today.

The British government officially introduced the very first paper notes which were named as "Victoria Portrait Series". The notes were available in denomination of Rs10, Rs20, Rs50, Rs100, and Rs 1,000. Initially the notes were printed from Bank of England and later India's first currency printing press was established at Nasik in 1928 and in 1935, the responsibility was transferred RBI.

● **After RBI :**

The **Reserve Bank of India (RBI)** is India's central banking institution, which controls the monetary policy of the Indian rupee. It commenced its operations on 1 April 1935 in accordance with the Reserve Bank of India Act, 1934. RBI issued its first note in the year 1938 which has portrait of King George VI and the first version of the RBI note look similar to earlier version of paper currency.

Following India's independence on 15 August 1947, the RBI was nationalized on 1 January 1949. RBI has monopoly of note issue. The first paper currency post independence was issued in 1949. The paper currency features various images, symbols and currency value. In 1996 and 2005, decade's later "Mahatma Gandhi series" was released for security reasons. The usage of electronic mode of payment like credit cards, online payments, net banking has increased in Urban areas of India.

Though as of 2018, coins of denomination 25 and less are no longer the legal tender. The demonetization of Rs500 and Rs1,000 notes, nearly after 40 years were the first step towards the further evolution in the paper currency of India.

➤ **Forex Market in India:**

Initially Indian foreign exchange market has been the most regulated one, till the year 1992-93 the government of India regulated control over the exchange rate, export-import policy, FDI (Foreign Direct Investment) policy. The Foreign Exchange Regulation Act (FERA), 1973 was introduced to control any activities in foreign exchange market. It was introduced in 1973 when foreign exchange was a scarce commodity. After independence, government of India's socialistic way of managing the business made the domestic businesses noncompetitive in foreign market. This would have severe impact on imports of the country and reduced foreign reserve. Thus, FERA was initiated, so that all the forex earning by the companies and the residents is being handed to RBI at a rate which decided by the RBI. Any violation of FERA was considered as criminal offense. By the beginning of 1991, the Indian foreign reserve was dropped down to such a level that it won't be able to even last for three weeks for import. During the June 1991, India pledged for help from Union Bank of Switzerland and Bank of England against 67 tonnes of gold, and raised US\$ 605 millions. These crises officially devalued the rupee by 19.5% from 20.5 to 24.5 to 1 USD.

Foreign Exchange Dealer's association of India (FEDAI), 1958 was set up to help the government of India in framing the rules and regulations in foreign exchange market. Post 1992, Government of India started to relax the foreign exchange rules and regulations. After liberalization government thought to liberalize the foreign exchange policy. Thus, Foreign Exchange Management Act, 2000 (FEMA) was introduced. FEMA was just the extension of the FERA, all the list of activities in which companies/resident can undertake the forex transactions were extended. FEMA increased the limit of FDI and FII, cross border M&A, fund raising activities and liberalize the import-export policy. One important change in the policy was brought in that rupee was made convertible to current

account. It made possible for foreign exchange payment and receipts at the market determined rate. In 2008, a major development took in forex market when currency derivative started trading at national stock exchange.

➤ **Foreign exchange reserve of India:**

Reserve Bank of India Act and the Foreign exchange management Act, 1999 has set the legal provisions and regulations to govern the foreign exchange reserve.

**The foreign exchange reserve of India includes the following four categories:**

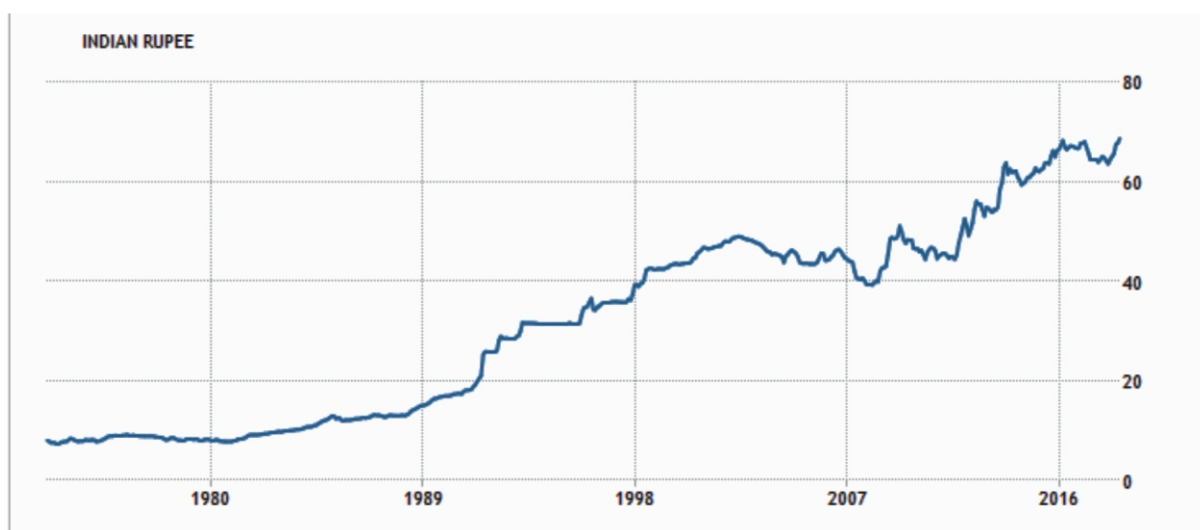
- **Foreign currency asset**
- **Gold**
- **Special Drawing Rights**
- **Reserve Tranche Position**

The foreign exchange reserve stands at Rs. US\$ 426.0824 billion with foreign exchange assets at US\$400.9782 billion, gold reserves at US\$21.4842 billion, SDRs (Special Drawings Rights with the IMF) at US\$1.5406 billion and US\$2.0794 billion reserve position in IMF as on April 20, 2018, published in Reserve Bank of India's (RBI) weekly statistical supplement.

• **Relationship of INR and Dollar:**

During the years of Independence, the INR was directly related to British pounds and was valued at par against American dollars. There were no international borrowings on India's balance sheet. With the introduction of the Five-Year Plan in 1951, the government started external borrowings for achieving the objectives. This required the devaluation of the rupee.

Graph 1: Data interpreting US Dollar exchange rate against INR from 1971 to 2018



Source: Tradingeconomics

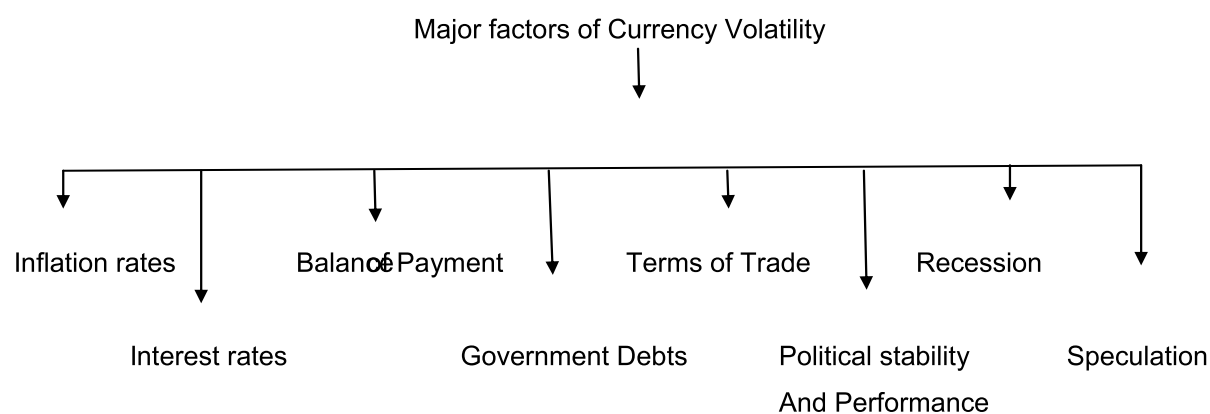


After independence, Indian government accept the fixed rate currency management. The Rupee was pegged at 4.79 against a dollar during the year 1948 and 1966. The rupee's link with the British currency was broken in 1971 and it was linked directly to the US dollar.

In 1975, the INR was valued at 8.39 against 1 US dollar. In 1985 it was further devalued to 12 against a dollar. India faced a serious Financial crises in 1991 where Indian rupee was devalued at 17.90 against US dollar. The year of 1993, was very important to currency market, from this year currency was let free to flow with the market sentiments. In 1993, a Dollar was valued at Rs.31.37. The rupee was traded in the range of 40-50 in the year 2000-2010. The USD/INR increased 0.0700 or 0.10% to 68.6700 on Monday July 30 from 68.6000 in the previous trading session. Historically, the Indian Rupee reached an all time high of 69.01 in July of 2018 and a record low of 7.19 in March of 1973.

➤ **Factors effecting Currency volatility :**

Chart 1



● **Inflation :**

It means increase in prices of goods and services it is opposite of deflation which decrease in prices of goods and services, inflation is the economic indicator for a country.

For eg: If the inflation in 2005 increase by 4% then the resident has to purchase goods and services at 4% hiked prices as compare to what he or she may have paid in previous year. In FY2017, the inflation rate was 3.6% which is less as compare to what it was in the FY2016, 4.5%. Changes in market inflation cause changes in currency exchange rates. A country with a lower inflation rate than another's will see an appreciation in the value of its currency. The prices of goods and services increase at a slower rate where the inflation is low. A country with a consistently lower inflation rate exhibits a rising currency value while a country with higher inflation typically sees depreciation in its currency and is usually accompanied by higher interest rates.

● **Interest rates :**

In India, interest rates are decided by the Reserve bank of India's central board of directors. The official interest rate is the repurchase rate. In 2014, the primary objective of RBI monetary policy becomes price stability rather than giving more important to government borrowings. In 2015, government decided to fix a consumer inflation target at 4%, with the band of plus or minus 2% points, from the financial year ending in March 2017. The Reserve bank of India raised its policy repo rate from 6% to 6.25% on 6<sup>th</sup> June, 2018, while there were no major changes in the market. Changes

in interest rate affect currency value and dollar exchange rate. Forex rates, interest rates, and inflation are all correlated. Increases in interest rates cause a country's currency to appreciate because higher interest rates provide higher rates to lenders, thereby attracting more foreign capital, which causes a rise in exchange rates.

**•Balance of Payment:**

India's Current deficit triple in FY18, but still remains manageable. Recent data trend indicates India's current account deficit (CAD) worsened to USD 13 billion (19% of GDP) during Jan-Mar'18 (Q4 FY18) from the level of USD 2.6 billion (0.4% of GDP) in the corresponding quarter a year ago. The widening CAD was due to rise in the prices of the crude oil. In spite, of deficit in CAD the forex reserves grew by US\$13.6 Billion. A country's current account reflects balance of trade and earnings on foreign investment. It consists of total number of transactions including its exports, imports, debt, etc. A deficit in current account due to spending more of its currency on importing products than it is earning through sale of exports causes depreciation. Balance of payments fluctuates exchange rate of its domestic currency.

**• Government Debts:**

India recorded a government debt equivalent to 68.70% of the country's GDP in 2017. Government Debt to GDP in India average 73.24% from 1991 until 2017, reaching an all time high of 84.20% in 2003 and a record low of 66% in 1996. Usually, government debt as a percentage to GDP is used by investors to measure country ability to make future payment on its debt, thus affecting the country borrowing costs and government bond yields. Government debt is public debt or national debt owned by the central government. A country with government debt is less likely to acquire foreign capital, leading to inflation. Foreign investors will sell their bonds in the open market if the market predicts government debt within a certain country. As a result, a decrease in the value of its exchange rate will follow.

**• Term of Trade:**

Term of Trade in India decreased to 71.10 Index Points in 2017 from 71.80 Index Points in 2016. Terms of Trade in India averaged 78.99 Index Points from 2000 until 2017, reaching an all time high of 100 Index Points in 2000 and a record low of 57.90 Index Points in 2015. In India, ToT corresponds to the ratio of price of exportable goods to the price of importable goods. Related to current accounts and balance of payments, the terms of trade is the ratio of export prices to import prices. A country's terms of trade improves if its exports prices rise at a greater rate than its imports prices. This results in higher revenue, which causes a higher demand for the country's currency and an increase in its currency's value. This results in an appreciation of exchange rate.

**• Political stability and Performance :**

The political stability is the propensity of a Government collapse either due to conflicts or rampant competition between various political parties. Also, the occurrence of a government change increases the likelihood of subsequent changes. A country's political state and economic performance can affect its currency strength. A country with less risk for political turmoil is more attractive to foreign investors, as a result, drawing investment away from other countries with more political and economic stability. Increase in foreign capital, in turn, leads to an appreciation in the value of its domestic currency. A country with sound financial and trade policy does not give any room for uncertainty in value of its currency. But, a country prone to political confusions may see depreciation in exchange rates.

● **Recession :**

A period of temporary economic decline during which trade and industrial activities are reduced, generally identified by fall in GDP in two successive quarters. Recession are short term events, but impact is for long term, as higher unemployment which may lead to lower purchasing power and saving capacity. In 2008-09, India escaped a great recession as its financial institutions are weakly integrated with global market and practically unexposed to mortgage-backed securities. But it was affected by global trade. When a country experiences a recession, its interest rates are likely to fall, decreasing its chances to acquire foreign capital. As a result, its currency weakens in comparison to that of other countries, therefore lowering the exchange rate.

● **Speculations :**

Speculation is the act of trading in an asset or conducting a financial transaction that has a significant risk of losing most or all of the initial outlay with the expectation of a substantial gain. With speculation, the risk of loss is more than offset by the possibility of a huge gain, otherwise there would be very little motivation to speculate. It may sometimes be difficult to distinguish between speculation and investment, and whether an activity qualifies as speculative or investing can depend on a number of factors, including the nature of the asset, the expected duration of the holding period, and the amount of leverage. If a country's currency value is expected to rise, investors will demand more of that currency in order to make a profit in the near future. As a result, the value of the currency will rise due to the increase in demand. With this increase in currency value comes a rise in the exchange rate as well.

➤ **Foreign Exchange Market:**

In India, Foreign exchange market Foreign exchange reserve in India increased to 405140 USD million in July 2018 from 405080 USD million in the previous week. Foreign exchange reserve in India average 215262.42 USD million from 1998 until 2018, reaching an all time high of 426080 USD million in April of 2018 and a record low of 29048 USD million in September of 1998.

**Review of Literature**

The introduction section highlighted the various concepts of forex market. The present literature review section aims to examine the important points of present information and methodologies adopted for explaining the concept of currency volatility, factors affecting the fluctuation in Indian currency and other currency and its impact and Indian rupee's position in global forex market. A selective/random literature survey of relevant research articles has been undertaken.

1) **Title:** An Empirical study on currency volatility in foreign Exchange market-Vandana kotai (2013).

In the above article, volatility of five exchange rates has been examined and on basis of that which currency market is more volatile and sensitive is concluded. The five exchange rates are as follow: INR/USD, JY/USD, EURO/USD, GBP/USD and CNY/USD. Basically this summary justifies and analyzed that Indian currency market is the most volatile and sensitive. This is the most debated issue in the academic research literature. The study reviews the currency rates volatility and how it has evolve its current state. The data collected for the study is purely the secondary data. The study includes the journey of Indian rupee since independence till Aug 15, 2013. It also states that currency prices are affected by a variety of economic and political conditions, but most important are interest rates, international trade, inflation and political instability. The study involves secondary data analysis which shows the comparison of the currencies of a quarter from the year 2013 that is from July to Sept. Using the formula of mean and standard deviation the following data is interpreted.

Empirical result shows that the Indian currency market has more volatility. In the end the study concludes that currency market is the most volatile and liquid in all financial market in the world. One should invest only with thorough understanding and knowledge, especially in Indian currency market investors to be more careful of its volatility and sensitive nature as compare to other currency market.

**Source:** (kotai, 2013)

2) **Title:** Fluctuationing value of rupee and impact on economy-Nand Kishor Soni and Ajay Parashar (2013).

The study states that fluctuation of Indian rupee and dollar and its relationship in terms of rupee appreciation that is dollar depreciation and vice versa. It also explains the history of rupee v/s dollar in value from 1950 to 2013. Changes in Indian rupee effects on labour cost, global business cycle, and even on various sectors in the country. Study also states how fluctuation in Indian rupee has an impact on currency, gold, Indian stock market. Consequently, rupee used to be weak against dollar in the foreign exchange market which is changing now and rupee is becoming strong. India should come up with policies on how rupee can get stronger in global and Indian market.

**Source:**(Economy, 2013)

3) **Title:** Indian Rupee's role as a international currency-Hakikat kadyan (2014).

The main objective of this study is to find out the current status and of Indian rupee as an international currency, by analyzing the characteristics of international currency in case of Indian rupee which are as follows: invoicing currency, reserve currency, international financial dominating currency, pegging currency, hand to hand currency. What is the current position of the Indian rupee in the international market. Study also explains factors which are helpful to make a currency international such as GDP, large share in world market, confidence in currency, political power, government's intentions etc. What are the Indian government's efforts to increase the rupee trade. The study concludes that after analyzing characteristics of international currency in case of Indian rupee, it is certainly clear that it is not a international currency currently. It does not fulfill the characteristic of international currency. The main problem with Indian rupee is its high volatility. Because of which there is less trading confidence amongs the resident and nonresident, which is important for an international currency.

**Source:**(Kadyan, 2014)

#### **Problem Statement**

- How the volatility of any currency be measured.
- What are the factors which are affecting the currency volatility in foreign exchange market?

#### **Scope of the study**

- This project is limited to Forex market. It gives an overview of Forex market in India.
- The project also studies the factors which are responsible for volatility of currency in forex market.
- The study also states the most volatile pair of the currency and the stable one.

#### **Need for the Study:**

- The study focuses on gaining knowledge about the Indian Foreign exchange market and Global Forex market.
- To understand the nature of Indian currency against the base currency dollar.

- Overview on Indian foreign exchange market.

### **Objective of the Study**

- The main objective of the project is to gain in-depth knowledge of Indian Currency Market & Rupee position in global market.
- To study the fluctuation rates of some pairs of currencies (INR/USD, JPY/USD, EURO/USD, GBP/USD, and CNY/USD) of last two years on quarterly basis.
- To compare the Indian Currency volatility with other countries fluctuations rates.
- To find out that which currency is more stable in the global market.

### **Research Methodology**

#### **Type of Research Design:**

- It is Exploratory Research Technique. Exploratory research is used primarily to gain a deeper understanding of something.
- The study is in depth understanding of Forex market. It is broad view and not specific.

#### ➤ **Methods of Exploratory research:**

- Review/Survey of concerned literature.
- Analytical data collection.

#### **Sources of Data:**

#### ➤ **Secondary Data:**

Secondary data is the data which is available readymade and which is already used by people for some purposes. The data collected for my project is secondary data, as all the data is collected from books and from the website.

#### ➤ **Data collection tools:**

- Internet : [www.rbi.org](http://www.rbi.org)

### **Data Analysis And Interpretation**

#### ➤ **Data Analysis**

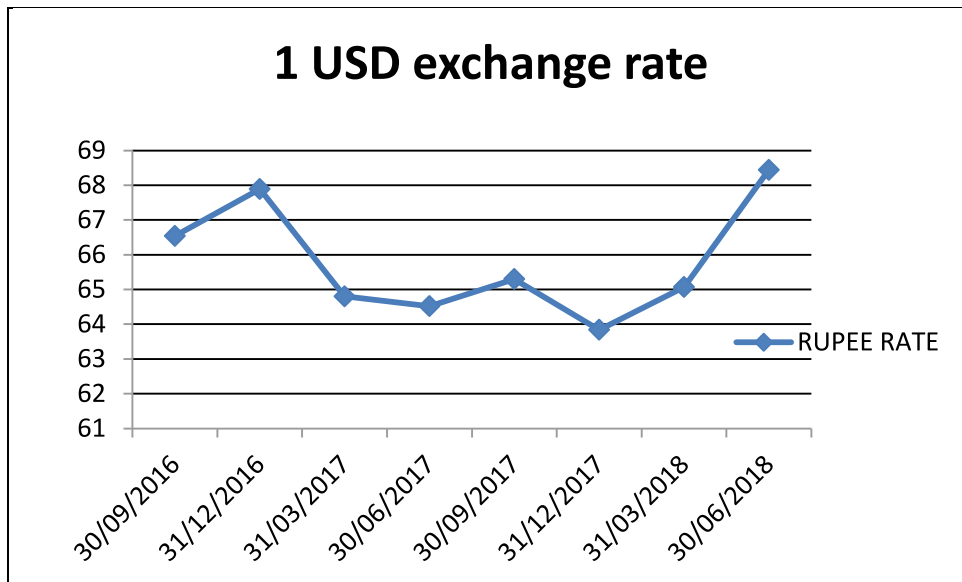
As mentioned above that the study is based on currency market data. The analysis indicates which currency is more volatile and which is stable. So, I have collected last two year quarterly currency rate (30<sup>th</sup> September, 2016 to 30<sup>th</sup> June, 2018). In the following data we have Dollar as the base currency, Indian rupee is the research currency and there are five pair of currencies which are USD/INR, USD/EURO, USD/GBP, USD/JPY AND USD/CNY which is been considered for analysis. An standard deviation indicator is used to indicate the volatility.

• **Graphical Representation of Data:**

a) Graph 2: US Dollar exchange rate against INR from 30<sup>th</sup> September, 2016 to 30<sup>th</sup> June, 2018

Source: RBI

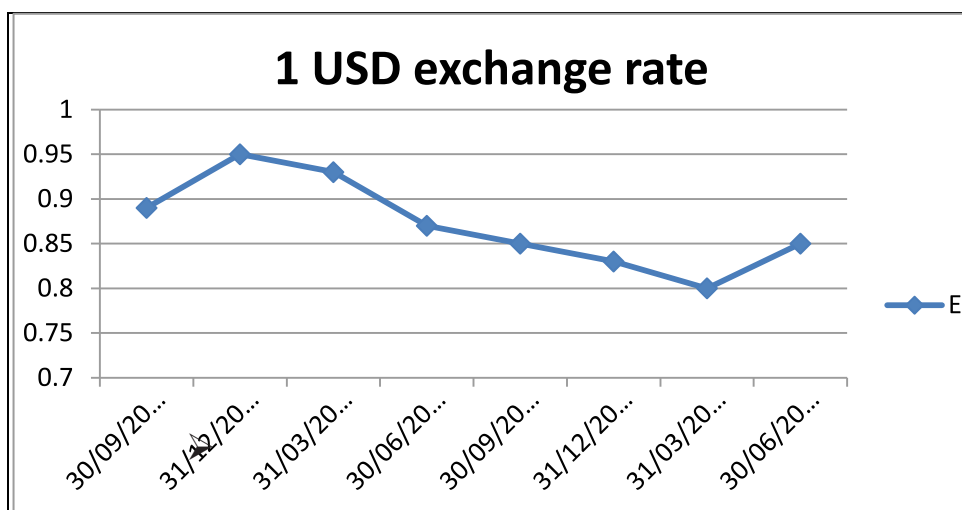
Source: RBI



In the above graph, US dollar exchange rate against INR has been fluctuating at very high rate.

b) Graph 3: US Dollar exchange rates against EURO from 30<sup>th</sup> September, 2016 to 30<sup>th</sup> June, 2018

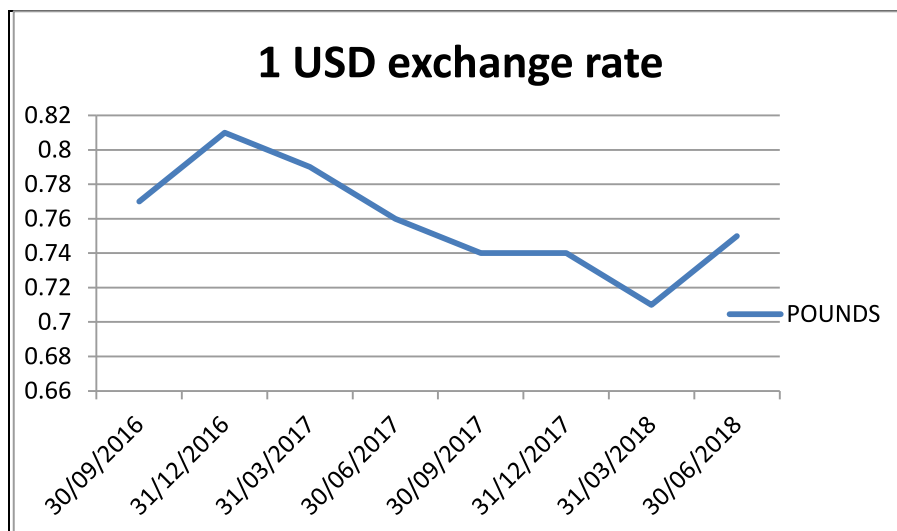
Source: RBI



In the above graph, the US Dollar Exchange rate against EURO has been fluctuating at very minor rate.

c) Graph 4: US Dollar exchange rate against POUNDS from 30th September, 2016 to 30th June, 2018.

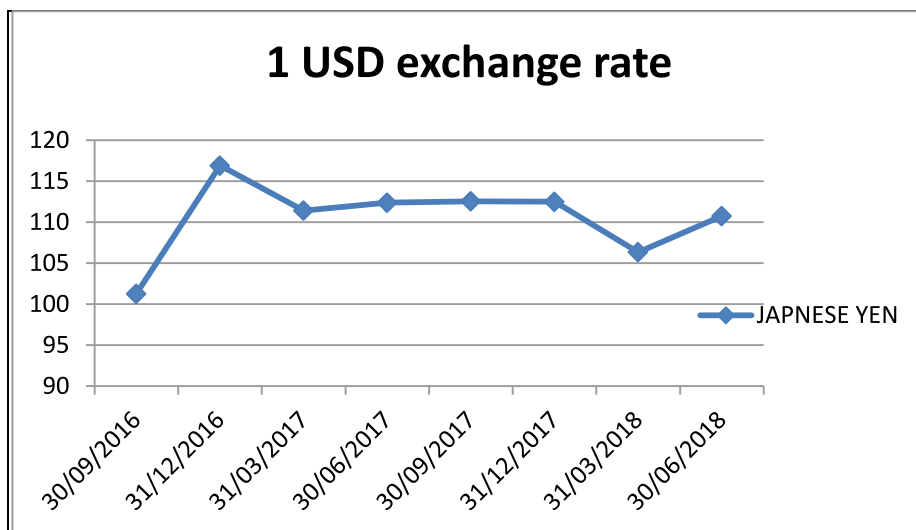
Source: RBI



In the above graph, US Dollar exchange rate against POUNDS is fluctuating at a moderate rate.

d) Graph 5: US Dollar exchange rates against JPY from 30th September, 2016 to 30th June, 2018.

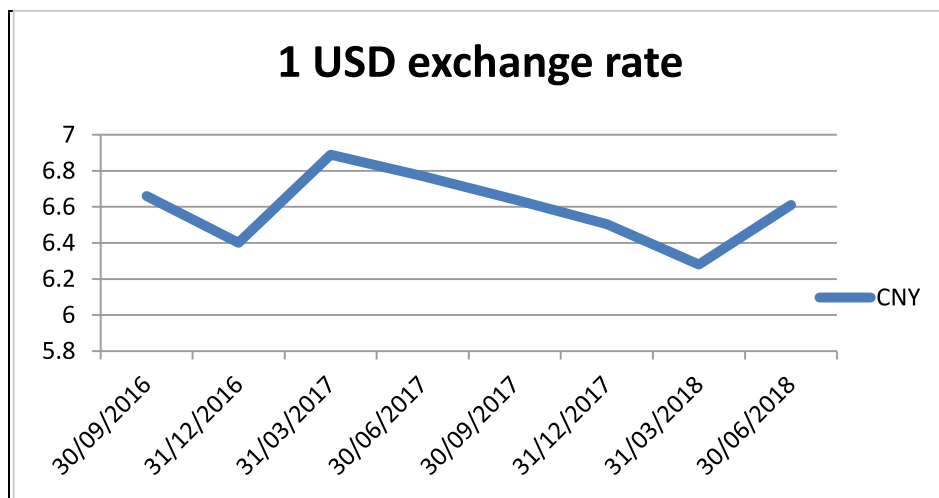
Source: RBI



In the above graph, US Dollar exchange rate against Japanese Yen is fluctuating at a very high rate.

e) Graph 6: US Dollar exchange rate against CNY from 30<sup>th</sup> September, 2016 to 30<sup>th</sup> June, 2018.

Source: RBI



In the above graph, US Dollar exchange rate against Chinese Yuan or Renminbi is fluctuating at a minor rate.

### ➤ Data Interpretation :

Table: 2 Data interpreting calculation of Currency volatility

PAIRS	MEAN	STANDARD DEVIATION
USD/INR	65.80	1.54710213
USD/EURO	0.87	0.047020607
USD/PONUDES	0.76	0.029341736
USD/JPY	110.51	4.41878925
USD/CNY	6.59	0.18359313

In the above table, data of five currency pairs is used to find its volatility rate. Data analysis is done by using standard deviation. Standard deviation indicator is a currency volatility indicator. If the standard deviation for a currency pair is large then price values are more scattered and price range is wider where as if the standard deviation is low, prices are less scattered and volatility is low. In other words, higher the standard deviation higher is the volatility rate and vice versa.

The USD/INR states mean at 65.80 and standard deviation at 1.54710213, which is second highest between the pairs. USD/JPY pair mean is 110.51 and standard deviation at 4.41878925, which is the highest volatile pair in the five currency pair, then it is followed by USD/CNY at mean of 6.59 and



standard deviation of 0.18359313 and USD/EURO at mean of 0.87 and standard deviation of 0.047020607 and USD/POUNDS at mean of 0.76 and standard deviation at 0.029341736.

## **Conclusion & Limitations**

### **➤ Conclusion:**

- The Indian currency market provides good opportunities in investment but the investor should gain good knowledge about the currency market before making investment.
- Form last two years; we can see that Indian rupee is volatile due to some internal as well as external factors.
- The factors which are responsible for currency volatility are inflation, interest rate, Balance of payment, Government debts, recession, speculations, political stability and performance. All of these factors determine the foreign exchange rate fluctuations. If you send or receive money frequently, being up-to-date on these factors will help you better evaluate the optimal time for international money transfer.
- To avoid any potential falls in currency exchange rates, opt for a locked-in exchange rate service, which will guarantee that your currency is exchanged at the same rate despite any factors that influence an unfavorable fluctuation.

### **➤ 6.3 Limitations:**

- This study is only limited to foreign exchange market.
- The time limitation of 2 months period for research is not enough to study the Foreign Exchange market and its operations in details.
- Due to time limitation the content in detail is limited to only the Indian currency.
- Forex market has awareness among the financial institutions which restricts getting information from public.

### **References :**

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[www.rbi.org](http://www.rbi.org)  
[www.tradingeconomics.com](http://www.tradingeconomics.com)  
[www.investopedia.com](http://www.investopedia.com)  
[www.wikipedia.com](http://www.wikipedia.com)  
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# CSR Activities in Educational Sector and Vocation Skill Development Training in India

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## **Abstract**

*This paper provides an analysis of data provided by Vedanta foundation on their Vocational Skill development training also known as Vocational training courses(VTC) such as list of all centers, how many centers are active, closed and work-in-progress, number of centers in all the categories, number of students in each and every center year and month wise. This report also includes an analysis of the data collected through survey taken of existing students and faculties to understand the interest, demands and the perspective of the students with respect to the courses provided by the VF's vocational skill development training project.*

## **INTRODUCTION**

### **1.1 Research Background**

This paper aims at looking at ethical issues in vocational training in India. It widely explores the specific role of vocational training in reducing unemployment and increasing rate of computer literacy in Indian economy. In India population of young generation is more than 60% of the total population and more than 6% that is 31 million people are unemployed, 1.3 million youth need jobs every month, 8 million a year, according to world bank that is a lot of number.

The report is mainly focused on finding out new strategies to attract and reach out to more and more youth population to opt for vocational skill training programs to develop their skills and increase their employability. For this research report we did both primary and secondary research to find out different measures to achieve Vedanta foundation's ultimate objective to reach out to maximum number of beneficiaries and reduce the rate of unemployment.

### **1.2 Company Details**

Since 15th September 1992, Vedanta Foundation has been a multifaceted philanthropic initiative of London-listed Vedanta Resources Plc. It is a Public Charitable Trust registered under the Bombay Public Trust Act, 1950 and the Foreign Contributions Regulations Act, 1976 and approved under the U/S35AC, U/S 80G of the Income Tax Act, 1961

They have their development programs in the form of initiatives with a broad focus mainly on Education (academic and vocational education), Nutrition & Livelihood.

Company's vision is "To achieve inclusive growth by providing support through focused programs with high potential for social development."

And their mission is to empower and educate the underprivileged section of the society by enhancing their basic skills set and facilitate them to join the mainstream.

Vedanta foundation is already doing lots of projects such as Post - Graduate Girl's College Reengus, Rajasthan, Vedanta College of Management and Information Technology, Vocational Training Centers for Women, Earn While You Learn, Computer Literacy Program, E-Shiksha @ Schools, Balchetna Anganwadi, Special School, RojgarAvsar, Umeed - Prison Program, Hospital & Research Center, National Super 100, Mass Marriage etc

All the projects detail of Vedanta foundation 1.1

<b>Projects</b>	<b>Locations</b>	<b>Brief Description</b>	<b>Beneficiaries P.A.</b>
Vedanta Post Graduate Girls College	Reengus, Sikar in Rajasthan	NAAC accredited college established in 1995 for rural offers graduate and postgraduate courses in Arts, Science and Commerce	3,000
Vedanta Girls Hostel	Reengus, Sikar in Rajasthan	Hostel for Vedanta Girls college students	110
Vedanta Gurukul School	Reengus, Sikar in Rajasthan	Nursery to 12 <sup>th</sup> Grade under Rajasthan State Education Board	1,600
Rajasthan Skill and Livelihood Development Corporation (RSLDC) centers	Reengus, Ajmer, Makrana, Bharatpur, Khatushyam	Skill Development centers in trades like Beauty Culture & Hair Dressing and Garment Making Sector	960
Vedanta Charitable Hospital	Reengus, Sikar in Rajasthan	Free medical check-ups with facilities viz. X-Ray, pathology, physiotherapy departments and a maternity ward  Free Eye Check-ups and eye operations in monthly Eye Camps	24,500

<b>Projects</b>	<b>Locations</b>	<b>Brief Description</b>	<b>Beneficiaries P.A.</b>
Vedanta Special School	Bharatpur, Rajasthan	School for mentally retarded, deaf and dumb, visually impaired and physically disabled	610
Vedanta Special School	Thane, Maharashtra	School for mentally retarded	50
Skill Training Division- computers	Maharashtra, West Bengal, Uttar Pradesh, Punjab, Rajasthan, Bihar, Jharkhand, Assam, Goa, Karnataka, Odisha	250 centers offering advance IT and IT enabled courses, online training in web-streaming mode in 75 prime locations, 35 training centers in Jails catering to 1,500 Jail inmates annually	82,000
Skill Training Division- Others	Thane and Jalnain Maharashtra, Goa	Trades like Beautician, Tailoring, Motor Mechanic, Electrician, Motor Driving with Tata Motors, Sesa Sterlite and Father Agnel Institute	1,000
Vedanta College for Girls, Kolkata	Kolkata, West Bengal	College to empower girls from the backward sections, fees not more than Rs.1,200 p.a.	180
<b>Summary</b>			<b>1,14,010</b>

### **1.3 Problem statement**

Being a Non-profit Organisation Vedanta Foundations' most important task is to increase the number of beneficiaries year after year in the field of education and skill training for underprivileged and unemployed youth. To do that, the organisation must come up with effective and efficient ways to handle its financial, operational and marketing front, challenges faced by the Team members in one of the Initiatives undertaken under one of its Flagship project- Vedanta Skill Training Centers are as below-

### **Challenges faced by the company in vtc project**

- Identify locations for the centers

The up-hill task for the Area Managers who manage all the centers in one state is to identify locations that will help them reach out to more and more beneficiaries, certain aspects like vicinity to local schools, colleges and such other educational institutions, looking for partners like Trusts, Education societies who have similar objectives is also one such strategy , Vedanta has many centers with Ram Krishna Mission and Rotary Clubs of various districts already, this is very crucial as it decided the future potential of

the project.

- Delivery of hardware and other equipment

All the machine procurements is centrally managed from Mumbai Head office, it starts with talking to vendors and getting quotes for hardware that will be most effective for running the programs and then blocking the deal, the major challenge that arises here is that of delivery and transportation as companies usually outsource the same to some agency or leave it to the customer, as the centers of Vedanta are located in the interiors and certain places do not have proper road or direct railway connectivity, getting the machines delivered at centers at the right time , and managing all the indirect tax front while transferring the machines, ensuring no damage and timely installation is a well-coordinated arrangement between the vendor, transporter, Vedanta HO and Area Managers and Trainers at the center.

- Online connectivity and electricity

Getting a local internet vendor who can provide the required network or internet connectivity to run the online sessions and also ensuring that the rates are acceptable and within the budget or at least reasonable is the responsibility of the Area Manager

- Mobilisation of students

It starts with this and end with this, it's the most important deliverable of each center, performance review parameter for the local trainer at the centers, Area Manager and Zonal Head, it's only the reach of the project and its spread in a particular region that determines its success rate, its responsiveness.

- Fees sensitivity of student, Launch of advance courses

All VF courses are run at a minimal fees of Rs.900 plus GST, no matter the duration is 2 months or a year, the rate is significantly lower than the other institutions offering similar courses, however the task of a mobiliser is not that easy, it takes time to learn to capture the market and understand how the target group responds to various things, all of this is a task of Area Managers and they master these skills with experience.

- Streamline daily payments with organisation sop and policy

Behind smooth functioning of each center is a combined effort of whole of Back Office team to ensure that all the basic operating costs are paid on time , this involves quick communication, clarification on authentic documentation and supporting's, smooth flow of data through the chain, each employee has a significant role to play and it doesn't happen unless all of them are sensitised that they are collectively doing things to help someone lead a better life

#### **1.4 Need of the study:**

Every issue that our society faces is like a vicious circle. Each issue is connected to another, either directly or indirectly. Illiteracy is the mother of all issues as it gives birth to many other issues like poverty, unemployment, child labour, female foeticide, over population and many more.

- 1 in 4 children of school-going age is out of school in our country – 99 million children in

total have dropped out of school (Census 2011)

- Out of every 100 children, only 32 children finish their school education age-appropriately (District Information System for Education (DISE) 2014-15)
- Only 2% of the schools offer complete school education from Class 1 to Class 12 (District Information System for Education (DISE) 2014-15)

Unemployment in India is projected to witness marginal increase between 2017 and 2018, signalling stagnation in job creation in the country, according to a UN labour report. The United Nations International Labour Organisation (ILO) released its 2017 World Employment and Social Outlook report, which finds economic growth trends lagging behind employment needs and predicts both rising unemployment and worsening social inequality throughout 2017.

Job creation in India is not expected to pick up pace in 2017 and 2018 as unemployment rises slightly, representing a near stagnation in percentage terms.

"Unemployment in India is projected to increase from 17.7 million last year to 17.8 million in 2017 and 18 million next year."

More than 60-70 % of the Indian population is in rural areas where not all the facilities of education are not available to them, few areas do not even have primary schools. Government is not able to provide better education facilities in rural and remote areas corruption is so deep rooted that the benefits, services never really reach to the targeted underprivileged families. Computer literacy rate in India is very low as compared to neighbor countries. Needless to say, even developed countries like china with highest population country in the world has almost 100% literacy rate.

This study will help the institutes to understand that how they can provide high quality education to underprivileged kids and vocational training to unemployed youth to reduce illiteracy rate and unemployment rate of India

### **1.5 Objectives of the study:**

The main objective of this study is to know how to provide services to as many people as possible to achieve ultimate goal of reducing unemployment and increase computer literacy in our developing country. so that all underprivileged people and people in remote areas will be benefited. Following are the objectives of the Vedanta foundation

1. Attract people in rural areas to opt for vocational skill training programme
2. Providing best education services at lowest cost
3. Increasing rate of computer literacy in rural and remote areas of India
4. Increasing rate of employment in India by providing quality skill training programmes in rural and remote areas
5. Establishing as many as computer and vocational skill training centers in every corner of India to reach out to every needy person to make them employable

### **1.6 Scope of the study:**

In India the rate of unemployment is around 6%-7% in February 2018 according to Center for monitoring indian economy (CMIE) which is higher as compared to 4%-5% in December and 3%-4% in July, 2017. Unemployment rate is increasing day by day in our country even though government have been providing various schemes relating to skill development training. But the major problem is that rate of workforce equipped with required skill training to do the job is less. The reason behind it is lack of awareness of government schemes.

The study is all about how to reach out to maximum number of unemployed people to provide them with quality skill training and make them employable to achieve their career goals and reduce the rate of unemployment from 5%-6% to 0%.

### **LITERATURE REVIEW:**

India is graduating millions reliably, yet under 3% of its workforce is equipped with the aptitudes to do an occupation. With over segment of its masses being under 25 years of age, the young workforce displays an enormous opportunity to equip the country's measurement benefit for the viable improvement and social progress of the nation.

At the present time, the supply of capable workers in India is approximately 3.4 million. According to the International Labor Organization, there will be an enthusiasm for 500 million capable masters in India by 2022. The massive lack of 496.6 million talented pros ought to be tended to in just eight years, making bent a basic national need. With the business being a basic demand creator and a key accomplice in the fitness natural framework, the 2013 Companies Act arrange on Corporate Social Responsibility (CSR) gives another main impetus to corporates to progress and place assets into ability advancement.

The compact intends to prompt CSR pioneers planning to perceive openings in mastery change that can be tended to through CSR exercises. It in like manner highlights domains in skilling that can influence upheld whole deal to influence for the CSR hypothesis and recommends diverse outlines that can help produce the CSR course of action of corporates.

Corporate Social Responsibility has numerous viewpoints. Organizations have been finding different imaginative contrasting options to release their social duty. Instruction is the segment which is the most entitled and socially compensating exertion for any corporate to be viewed to discharge its social duty. Supporting training at any level will mean, re-invigorated instruction part which can change our nation into a genuine learning power and understand an eventual fate of progress and development.

The administration of India needs to prepare in excess of 400 million Indians with pragmatic abilities by 2022. Government have begun few plans for expertise improvement, for example, Pradhan Mantri Kaushal Vikas Yojana which incorporates Short Term Training, Recognition of Prior Learning, Special Projects, Kaushal and Rozgar Mela etc. But According to government figures, less than 5% of India's 487 million laborers have gotten any formal abilities preparing. In other industrialized

nations, that figure is more like 60%. The issues India appearances could inevitably debilitate its monetary execution.

In an article of BBC, Ninad Karpe, CEO of India's one of the best firms in aptitude preparing (IT preparing) industry 'APTECH'. Mr. Karpe's firm has prepared in excess of seven million understudies around the world. He concurs that one of the basic reasons for India's aptitudes lack is the nature of its instructive framework. One arrangement, he says, is for industry to connect more with scholarly foundations and to set up more temporary positions."

### ❖ **Top Pioneers in skill development training sector in India**

There are many firm in this category of education industry but only few have made it to the top.

- a) NIIT
- b) Aptech
- c) MT educare
- d) ICIT
- e) IICT

There are so many courses offered by these giants in skill training centers. The courses provided by these pioneers for 10th+2 students are shown below:

The complete IT career program

A career program that trains you to become an industry-ready professional in programming techniques and in-demand technologies like:

- C programming
- Website development
- MySQL
- Cloud computing
- Big data
- Web application
- Mobile app development
- Java

### **E-commerce: Learn responsive website development**

With this career program, learn the basics & the advanced levels of developing payment gateways & websites for the e-commerce market. The course would cover:

- E-commerce implementation
- MySQL & PHP
- Drupal
- Web productivity tools
- HTML 5 & JavaScript
- Fundamentals of e-commerce



## **Web Development**

A web development course that trains you to develop dynamic websites, create databases & do programming. You will learn: Building next generation web sites

- UI/UX for responsive design
- Working with JQuery
- Optimize web for search engines
- Querying with MySQL
- Web application development using PHP
- Project (open source) & technology upgrades

Some of these courses are also provided by few non-profit associations like NASSCOM(National association of software and service companies)

## **Vocational skill Training Course Project at Vedanta Foundation**

### **I. Project Information:**

Vedanta Foundation has a nation-wide network of 350 Vocational Training Centres in India providing basic and advanced computer courses to students and unemployed youths of the country, the centres are equipped with needed resources to impart knowledge and trained faculties to deliver the program, the project by itself employs over 370 people under Vedanta Foundation and about 18 lakhs students have been successfully trained for the last 25 years when the flagship program had begun with mere set of 5 students. Today with the network of 350 centers in Bihar, Rajasthan, Punjab, West Bengal, Jharkhand, Assam, Odisha, Goa, Maharashtra, Vedanta has expanded leaps and bounds over the years, about 100 Vedanta Computer Training Centers are also National Institute of Information Technology, Government of India affiliated in which each student enrolling will undergo an online examination conducted by NIELIT and will be entitled to dual certification by Government of India and Vedanta Foundation.

### **Intermediate Deliverables to the Doner:**

A budget was prepared for capital expenditure to be incurred for the establishment of the centers which included line items as below for each of the new 103 centers-

1. Server (mention configuration)
2. 10 Thin clients connected to server
3. N-Computing devices
4. LAN set up and Networking tool kit
5. Router
6. Projector and Projector Screen
7. Mike, Speakers
8. Camera (put configuration)

The total capital expenditure in 2017-18 was for Rs.2.65 crores approved by the Trustees to be expended out of the accumulated section 35AC funds and accretions on the same over a period of 17 years, the operational budget of each of the centers with monthly detailing of beneficiary targets to be achieved was approved by the management separately, since it was Vedanta Foundation's independent funds utilized for the project,

reporting through MIS happened internally to the project operational head, Trustees and Industry advisors.

- **Premium centers:** Centers where VF takes full charge of the location, rent, electricity, water, internet connection, machine set up, furniture and regular operation including annual beneficiary targets.

Premium centers are completely managed by the respective Area Managers and Zonal Heads of the respective zones, their performance incentive is directly linked to the performance of the centers i.e. the annual and monthly count of beneficiaries it caters , followed by other factors like fees deposition status, drop outs and timely reporting with accuracy.

Each Premium center if in operation for 12 months, given a target of 550 students p.a. i.e. monthly average of 45 students

- **Rent free:** These centers are run with such Institutions/NGO's who are ready to bear a part of the expenditure , mainly rent and furniture ; VF provides set of 5 standalone machines to the centers, sets up a Wi-Fi connection , bears all other operational expenditure.

Like Premium these are also managed by Area Managers and Zonal Heads and performance of these centers are linked to their performance incentives, only difference being the facilitation is less as compared to Premium, vision of the management is to gradually convert all these Rent Free centers into Premium centers, include them in the standard HO web streaming classroom mode over a period of time.

Rent Free centers under conversion mode given a target of 20-25 students per month

- **Shiksha:** These centers are run mostly with NGO's which take the responsibility of providing minimum number of beneficiaries annually, only basic computer 2 month program in offline mode is offered at these centers unlike Premium and Rent Free centers where Advance Computer Courses are offered, furniture, electricity, water charges are born by the NGO, faculty salary is borne by VF

VF has many Shiksha centers in the interiors of India and also many of the private schools and colleges where computer education as a part of their syllabus is being delivered in an enhanced mode with the exposure to market driven content and expert teachers.

Shiksha centres annual target of 120 students annually @ 250rs

Shiksha centers give a margin of Rs.1000-3000 per batch as per the MOU's signed with the NGO

## ii. Objectives:

Objectives of the Project and tasks undertaken

- Identifying 103 new locations by penetrating to the interiors of India where access to

quality education at affordable rates or even a learning environment is still a far sighted vision for the local administrative bodies and parents.

- Establishment of centers in terms of finalizing the location, signing rent agreements/MOU's, procuring necessary furniture locally, delivery of assets like computers, projectors, mike, router etc., installation of machines and N-Computing set up, setting up Wi-Fi connection
- Shortlisting candidates locally for the position of field technical assistant who would act like a field trainer with specialization education in IT field and at least 6 months of practical experience as an IT Faculty.
- Setting up the online streaming software on the server and undertaking real-time HO web streaming hosted by the Master Trainer in HO
- Enhancing the content delivery through advent of technology, revising the content and introducing new modules depending on market trends and development
- Ensuring standard content delivery all across the centers, sharing and making available quality inputs of experts or specialized trainers across various centers
- Increasing the annual target beneficiaries , reaching as many number of students possible
- Streamlining finance of all these centers , designing a standard framework for the same and facilitate its adaptability at field level
- Using real time technology for streamlining operations, training the field team to get well versant with the ERP software called Continuous Monitoring System (CMS) and execute the reporting framework with at least 60-70% accuracy, not compromising or disturbing with the ease of working at field level.

### **iii. Challenges:**

- Identify locations for the centres
- Delivery of hardware and other equipment
- Online connectivity and electricity
- Mobilisation of students
- Fees sensitivity of student
- Streamline daily payments with organisation sop and policy
- Running onto at breakeven point
- Habituating centers for daily online training
- Launch of advance courses
- Setting up ERP models in future:

**Enterprise Resource Planning System(ERP)**, just by considering name we can simply define ERP as System or software that used to manage all the resources of whole

enterprise. Right from employee payments to single screw coming into the enterprise, everything can be managed & tracked by using ERP Systems. ERP is a cross functional software that supports all the business processes within the organization.

In organization, ERP helps to manage business processes of various departments & functions through centralized application. We can make all the major decisions by screening the information provided by ERP.

There are many vendors in market which are providing traditional **ERP solutions** or **Cloud based ERP solutions**. Though implementation platforms or technologies are different, there are common & basic modules of ERP which can be found in any ERP System. Depending on organizations need required components are integrated & customized ERP system is formed

### Challenges faced at the Vedanta foundation and training centers

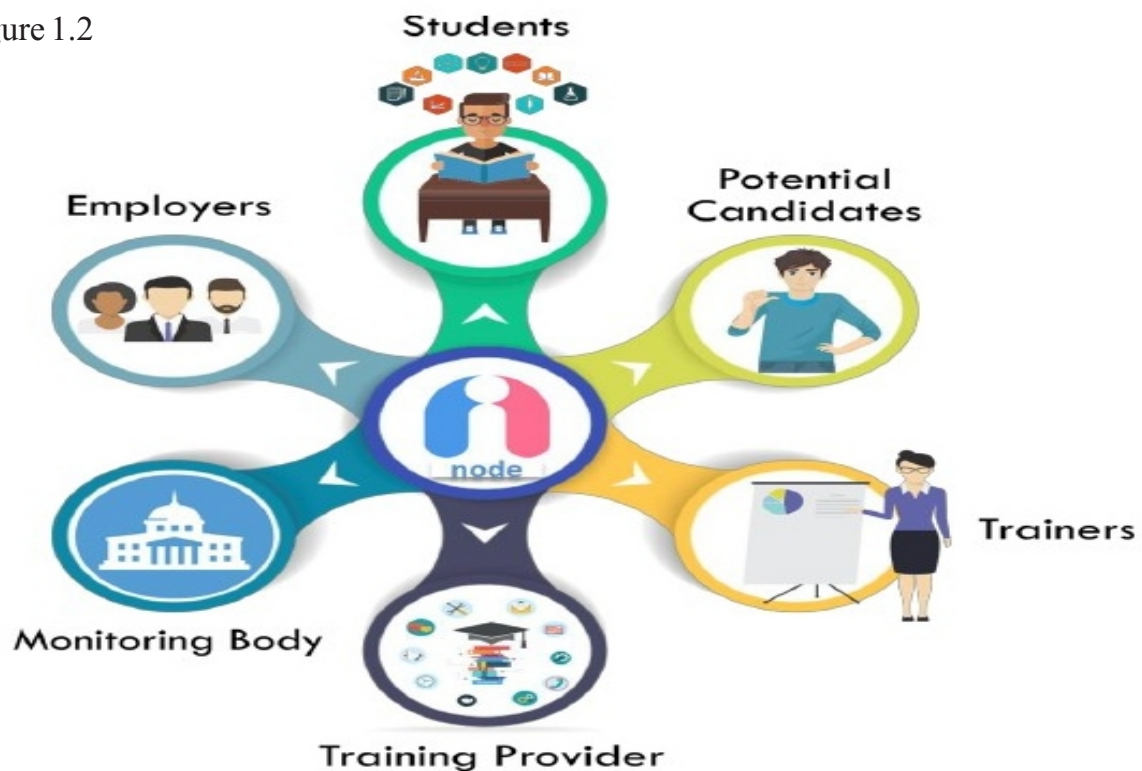
- Youth mobilization
- Mismatch between aptitude and training
- High quality digitized curriculum
- Monitoring and tracking of Training Centres
- Data authenticity
- Connecting trained manpower with job givers

Live data analysis

How ERP system software helps Vedanta foundation to face those challenges

TECHNOLOGY platform for connecting all stakeholders of skill training programmes.

Figure 1.2



NODE is a web and mobile based technology platform that provides data monitoring, data management, reporting, tracking and digitized learning capabilities to all stakeholders of the skilling ecosystem on a real-time basis.

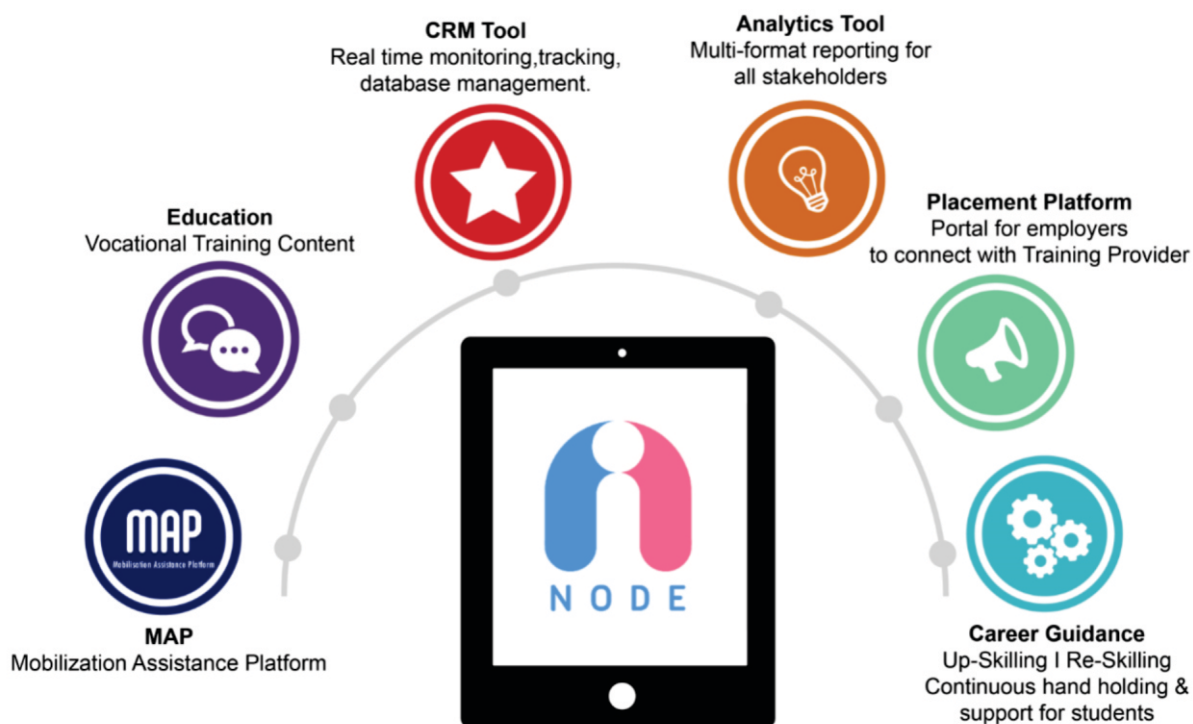
A digital platform that supports all the stakeholders of vocational training through all stages of the skill value chain

### Features

- E-learning content as per National Skills Qualification framework
- Students get to learn using interactive module through
- Trained youth get access to affordable up skilling courses through the same platform.
- NODE assist the TPs right from enrolment to placement and beyond
- Post placement performance of the candidate can be tracked.
- Student performance is pegged to content usage which can be traced real time by trainers, monitoring agencies, government bodies etc.
- Employers get access to real time data on availability of trained manpower – both location and trade wise

- Employer can host their proprietary content through the platform for ensuring manpower is trained as per their requirement.
- Platform Functionalities

Figure 1.5



## **RESEARCH METHODOLOGY:**

### **3.1 Type of Research Design:**

In this research report we used diagnostic research study which includes the discussion about:

- Emergence of the unemployment in India
- Diagnosis of the problem
- Vocational skill training in India to increase the employability of youth population of India and
- Suggestions for effective approach on vocational skill development training programs

We have discussed the factors responsible for the situation of unemployment in India and as a solution vocational skill development training. We did both primary and secondary research to find out and collect important data for this report. Analysis of the collected data is in the next chapter after the analysis solution is discussed and suggestions are made.

### **3.2 Source of Data**

· **Primary:** In my primary research for this project I took surveys of existing students in vedanta foundation's skill training centers. Vedanta foundation has more than 300 centers all over India. In three zones which are North, west and east zone, they have active centers and in south zone they have started establishing there centers. So instead of taking surveys in all of these centers which is not possible I decided to take surveys in few selected centers. We selected two category of centers in every zones, one high performing and another low performing. Performance of the centers is measured on the basis of number students enrolled. That's how we get six centers we took surveys in these six center with random 20 students each center and one additional survey of teacherfor me and it is also very time consuming and interview with assistant manager of Vedanta foundation HO

· **Secondary:** In this report we collected some secondary research in the form of research papers, books and articles all of which is mentioned in the table below.

**3.3 Type of Sampling:** In this report the type of sampling we selected is stratified sampling type in probability sampling.

stratified sampling is possible in our case because the Vedanta foundation have covered almost every corner of india and we can group it in three zones such as north, east, and west zone. In south zone they have just started establishing their centres so there is no point considering them in this research. Further how we selected sample population is mentioned below in the form of table

### 3.4 Sample Size: 120 students

#### sampling 1.2

Population	Sample
Total population	All the students in Vedanta foundation center all over India
Group	All the centers in Three zones North, East and West
Sub-group	Two category of centers 1) high performing 2) low performing from each zones
Sample	Twenty random students from those two centers of each zones
Sample in number	$3(\text{zones}) \times 2(2 \text{ category of centers each zone}) \times 20$ (randomly selected students)= <b>120 students</b>

### ANALYSIS AND INTERPRETATION OF THE DATA COLLECTED WITH RELEVANT TABLES AND GRAPHS:

#### Vocational skill training at Vedanta foundation in Details

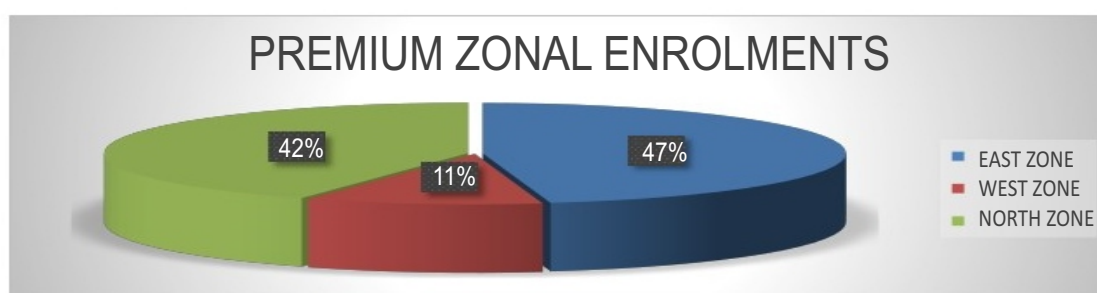
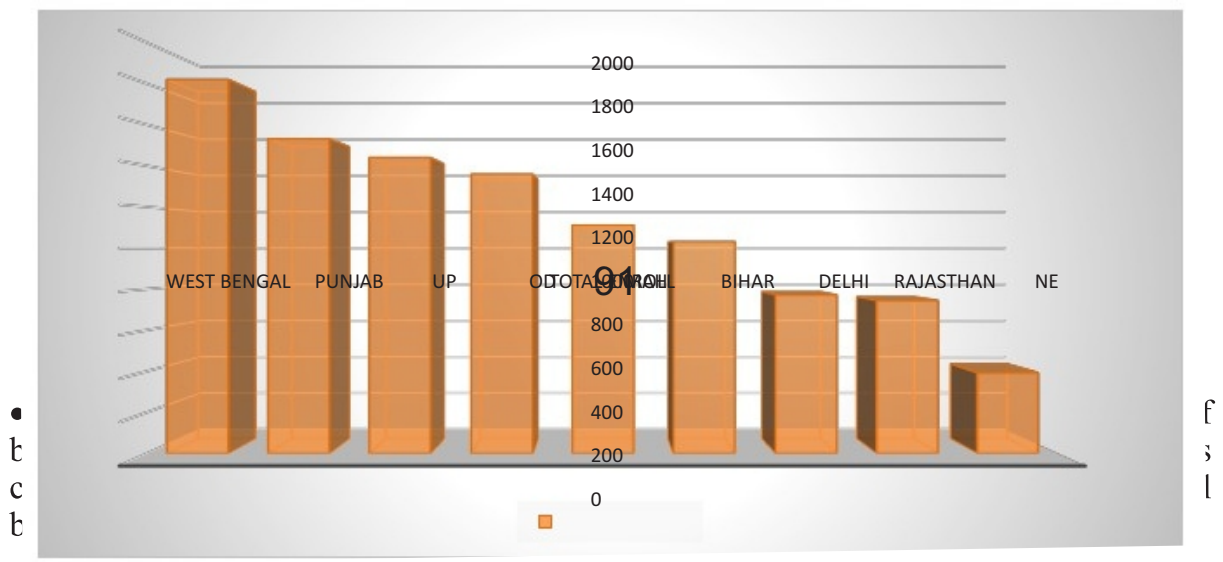


Figure 2.2

- East Zone with 31 centers contributes to 47% of total annual count of beneficiaries in 2017-18
- North Zone with 32 centers follows East Zone with just 4 states to cater viz. UP, Punjab, Delhi and Rajasthan

- West Zone has been focusing on encroaching interiors of Maharashtra running centers with institutions and education societies running schools and colleges

From the above chart we can see that the highest enrolment zone is east zone and second highest is north zone. West zone has lowest enrolments this is because in west zone Vedanta foundation have centers in only 2 states that is Maharashtra and goa but if you see in average number of enroll percentage chart average number of enroll per centers is Maharashtra state with on an average 69 enrolments each centers.



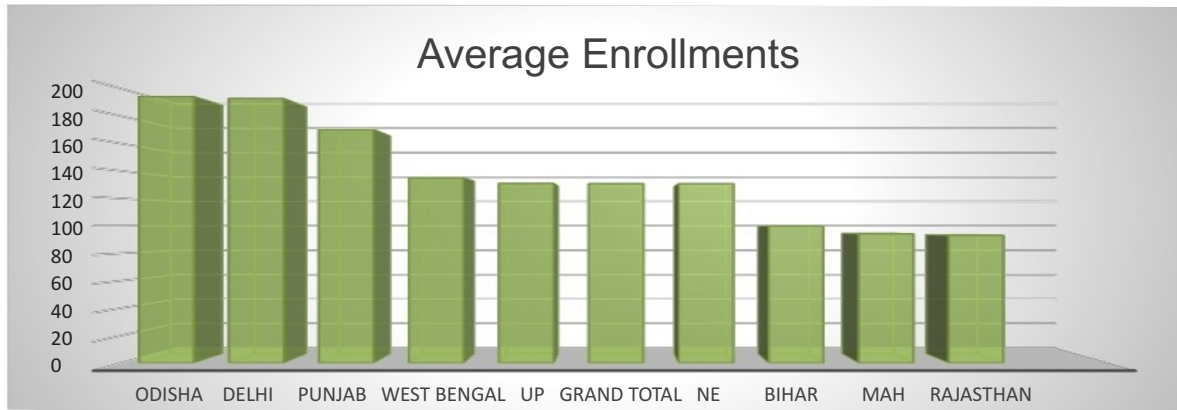
- Following West Bengal are Northern states of Punjab and UP, together forming 28% of total beneficiary database in 2017-18, primary reason being need to become a computer literate for securing jobs in public sector companies and National and State Services.

- Odisha has managed to give 1359 enrolments with about 6 centers in 2017-18; this is primarily because of local NGO's gamut in the area which makes it easier for organization like VF to establish its niche in such interior locations.

- While Maharashtra is primarily standing at 1111 enrolments which is 10.5% because of institutional tie-ups in interiors of Maharashtra and few locations in Goa where computer education is offered as a part of regular course curriculum in schools and colleges

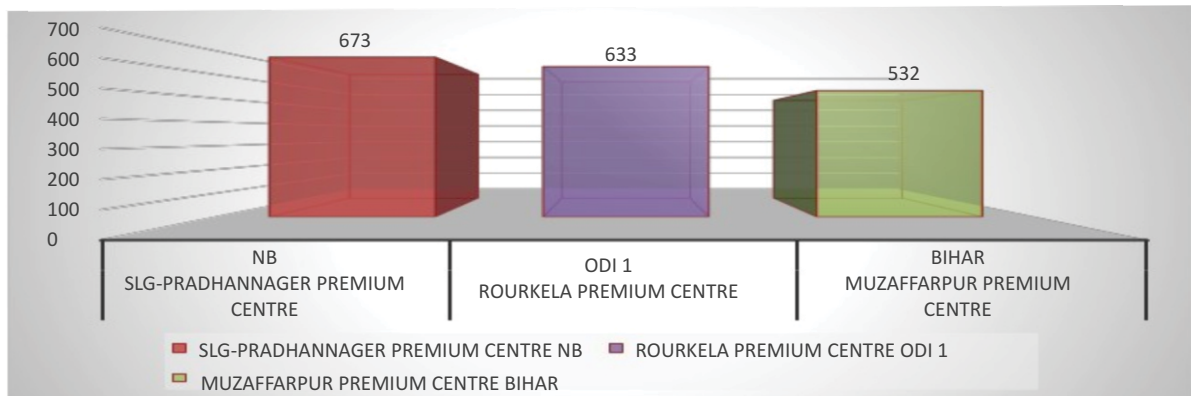
Above chart shows the total enrolment for each state in all 3 zones i.e. north, east and west. Where west Bengal has the highest number of enrolments and on the other hand North east states have lowest numbers of enrolments.





- As an apparent fact, though Odisha gives highest count of annual beneficiaries i.e. 1359 with 7 centers, Odisha is one of the states contributing to beneficiary numbers, however it is the quantum factor that makes it win over other states, each of the center in Odisha must be catering to about 60-100 students annually.
- it is Maharashtra and Bihar that stand out with 10 and 14 centers respectively with most of their centers working at optimum resource potentials
- Notably, centers in North East India in areas like DIMAPUR. GUWAHATI have also grown phenomenally as far as average turnouts from each center is concerned with an average of 130

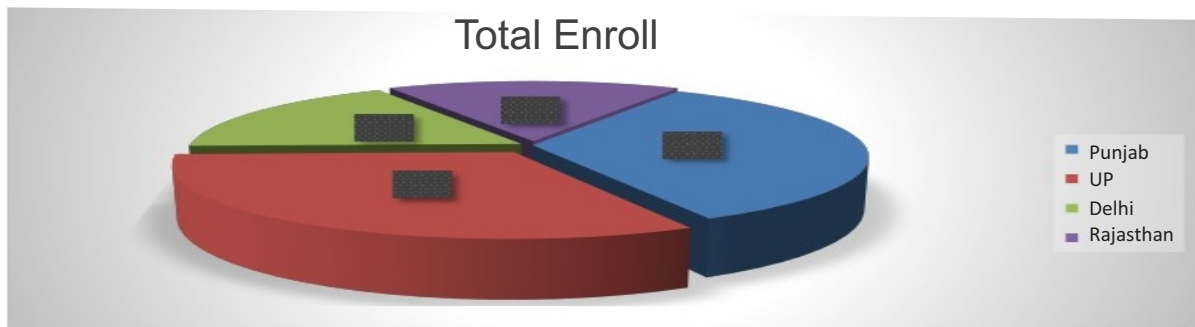
As I mentioned above in Maharashtra state average number of enrolments is highest as compared to any other states. Maharashtra, Bihar, north east are the top three states where average numbers of enrolments is highest as shown in above chart. In Maharashtra on an average 69 enrolment each centers, In Bihar on an average 64 enrolments each centers and In NE on an average 65 enrolments each centers.



In above chart we can see top 3 centers which has highest numbers of enrolments and all three states are in east zone states i.e. north Bengal, Odisha and Bihar.

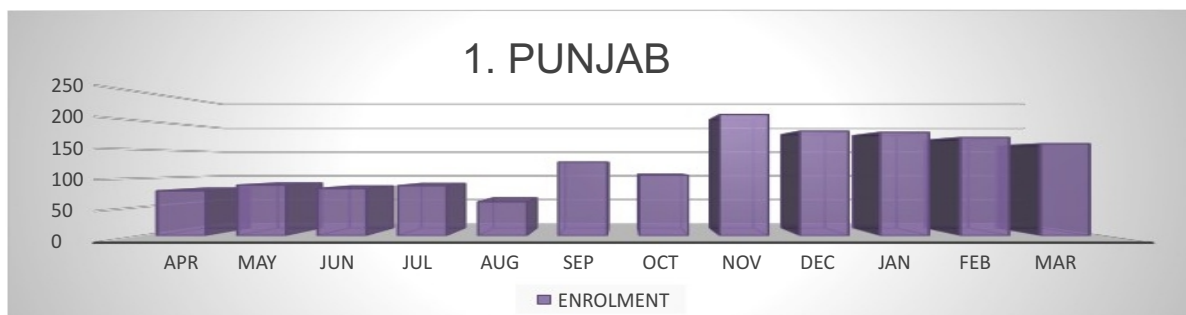
- Siliguri Pradhan Nagar, Rourkela and Muzaffarpur are few of the flagship centers of VF from the very inception of its Skill Training Program in the 1990's and the influence and strength of these centers is clearly visible in the numbers they have achieved in 2017-18 as shown graphically above

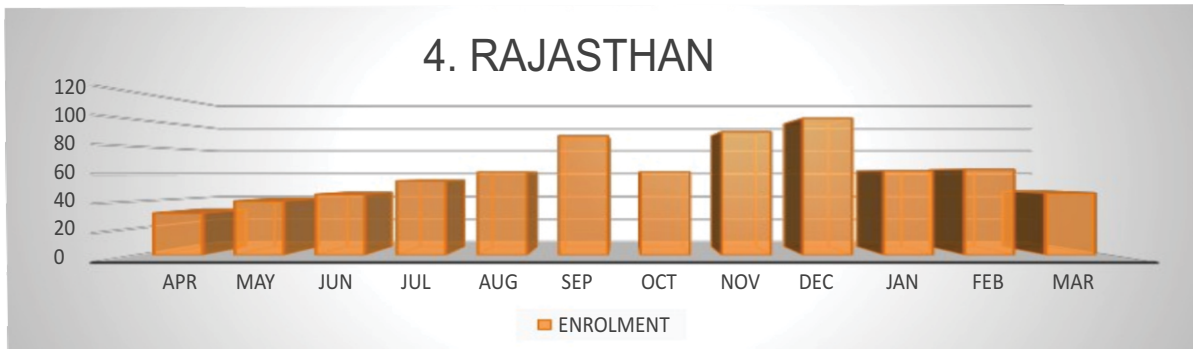
- These are also few of the biggest centers area wise, and also in terms of hardware set-up to be able to manage the ever increasing number of students wanting to undertake computer training courses with flexibility with respect to batch timings



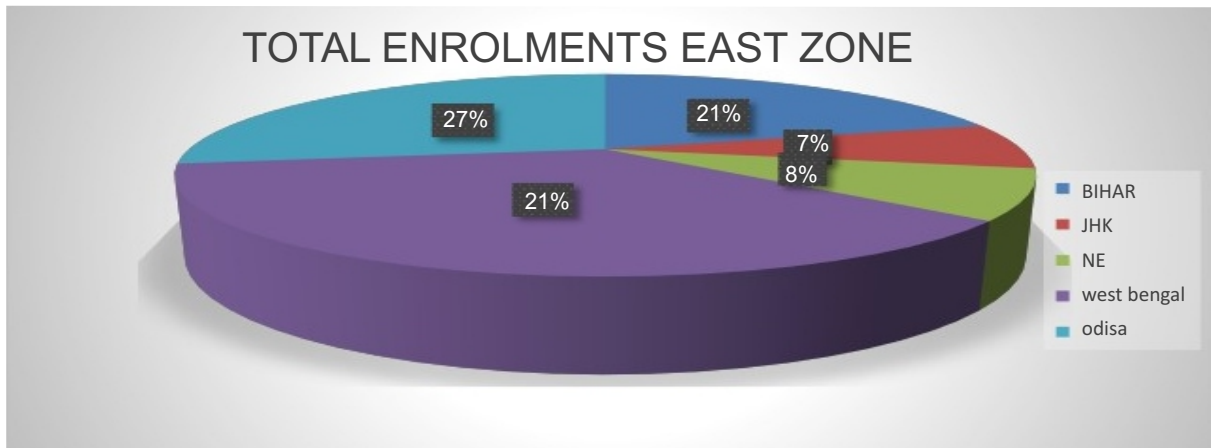
- In North Zone , as per the graphical presentation above, it is Punjab that stands out from the rest of the states with 9 centers catering to 14.5% of total beneficiaries from the project and 34% of total beneficiaries in North region
- UP follows Punjab in terms count of beneficiaries with enrolments forming 32% of Total turn up in North Zone, these states also house 6 Umeedcenters in UP which forms 5% of total enrolment in North region
- Rajasthan with 8 centers has still a steep target to achieve, area where VF is trying to slowly penetrate with not just skill centers in computer trade but also reaching out to community with trades like hairstyling , beauty culture and advanced tailoring courses in affiliation with Rajasthan State Government, also to mention , VF already has a college and school in the state .which together cater to about 5000 beneficiaries annually.

In North zone there are 4 states i.e. Punjab, UP, Delhi and Rajasthan where Vedanta foundation has their centers. Punjab state and UP state combined has more than 60% enrolment of the overall enrolment in north zone. Highest enrolment in Punjab by 34% and second highest enrolments in UP by 32% remaining 34% of the enrolment is equally enrolled in delhi and rajasthan

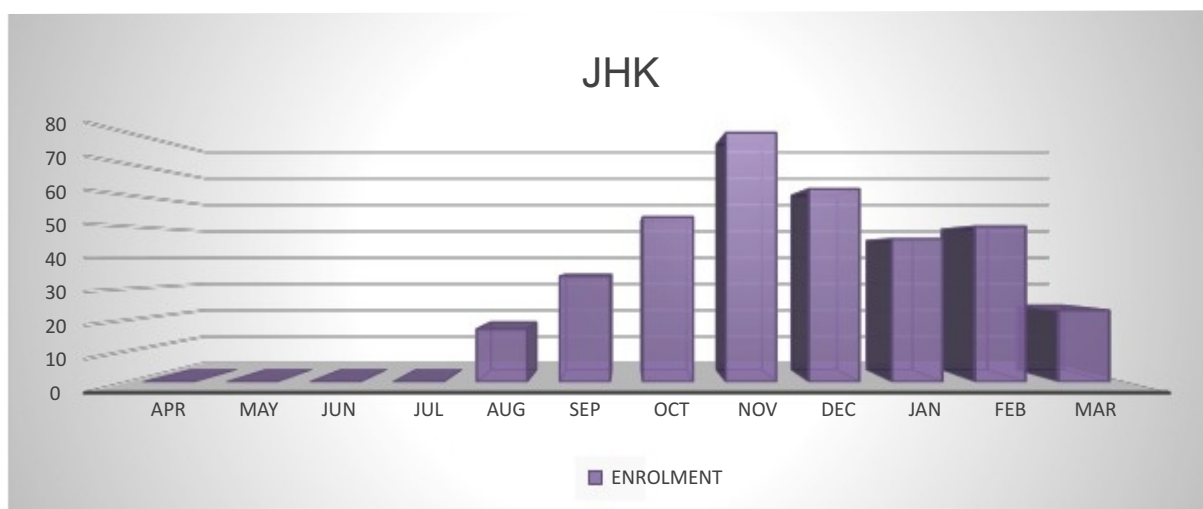


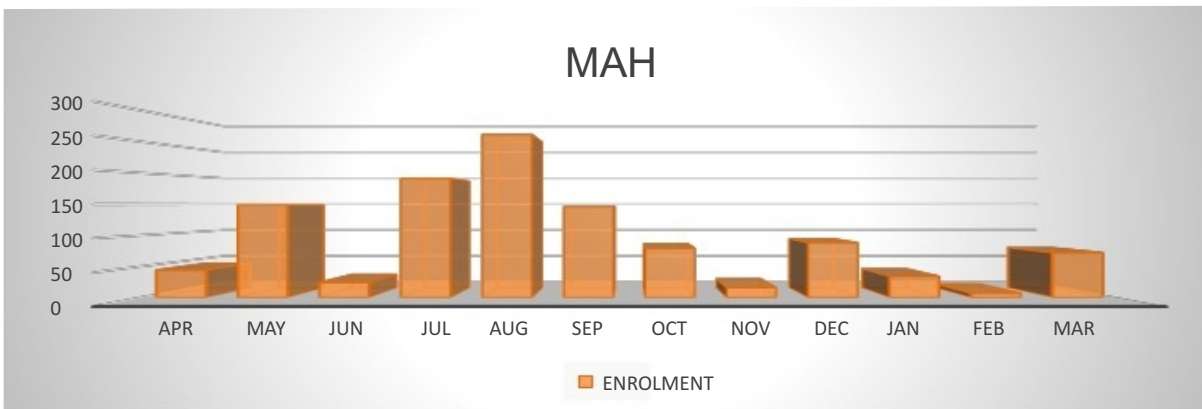
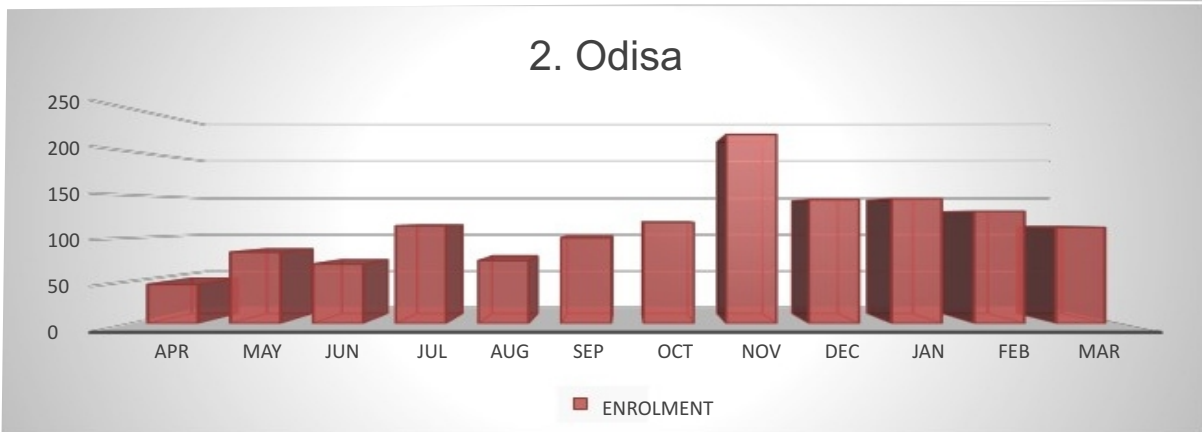


- What comes out as a common observation from all the above charts of states in North region is that the students prefer to undertake computer training course post September after the festive season and in mid-Academic year in the Northern States
- Seasonal trend also takes a leap at year end just before the vacations in educational institutions which shows that students try to brush up their computer skills in summer vacations when there are less of academic responsibilities



In East zone there are 5 states, where Vedanta foundation has their centers. As you can see in above chart of total enrolments, the combined total enrolment of west Bengal and odisa is more than 60%. Highest number of enrolment is shown in West Bengal by 37% and second highest enrolment in East zone is in odisa by 27%. Lowest number of enrolments is in Jharkhand by 7%.





From the observation of above chart most of the enrolments in centers in Maharashtra state is in July, August, September and also in May

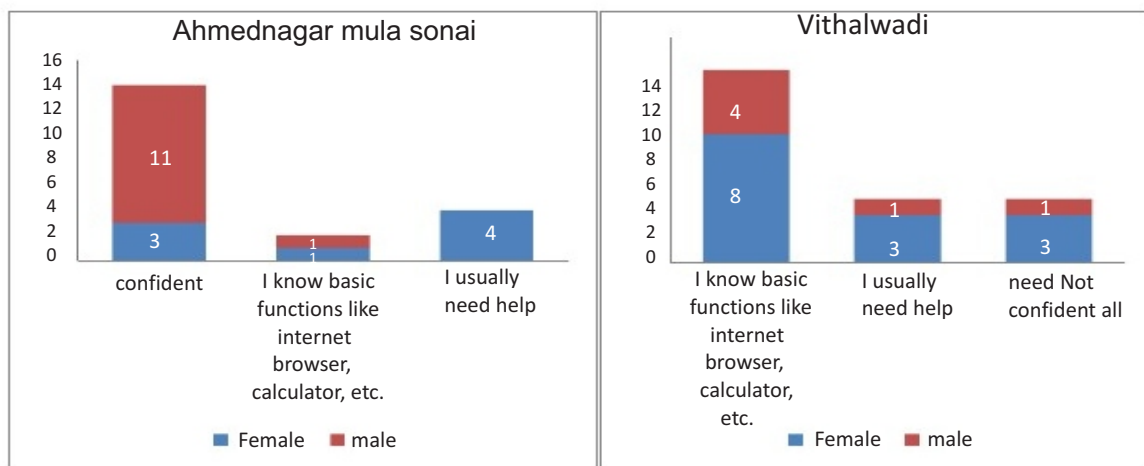
Students start to join computer institutes mostly after joining next year of school or college which mostly starts at the end of the June or in the beginning of July. And there are also fair amount of enrolments in a May month because it is a period of summer vacations because parents think that joining for computer courses or any other extra curriculum (for e.g. Music, Art, Dance, sports etc.) in summer vacation is the best way of utilizing time instead of only playing games.

As you can see Bihar monthly enrolment chart there are only 2 months with highest enrolment those are march and april from which we understand that students in bihar enroll for computer courses after final exams which takes place in 2nd or 3rd week in month of march.

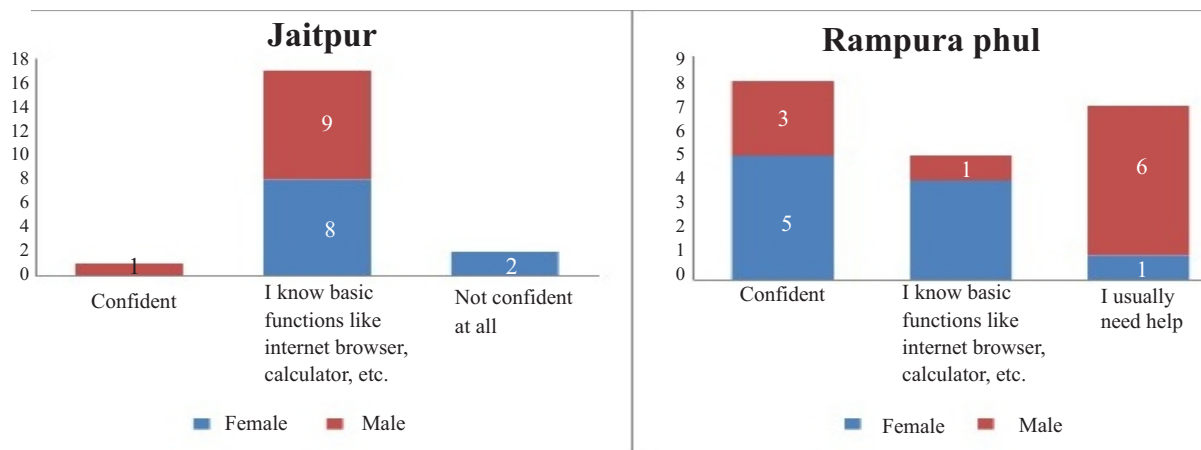
Expect Maharashtra and bihar if you see every other states i.e. Punjab, rajsthan, delhi, up in North zone's and west Bengal, Jharkhand, odisa in east zone's monthly enrolment chart enrolments starts to increase from the month of September or November reaches to peak in the month of November or December and starts to decrease till april month. Reasons behind this type of behavior could be a long Diwali festival vacation. This is just a speculation real reason can be this or anything else

Vedanta foundation is always working hard to educate (computer education) and provide skill training of Indian youth to help them acquire better employment opportunities on the basis of their talent and keep growing in their desired field. In this research we took one survey in selected centres in all 3 zones ie East, West and North zone. In that survey we asked students few question to know their current knowledge on computer education and how much they are familiar and confident with computer? Result of that survey is shown below with the help of charts.

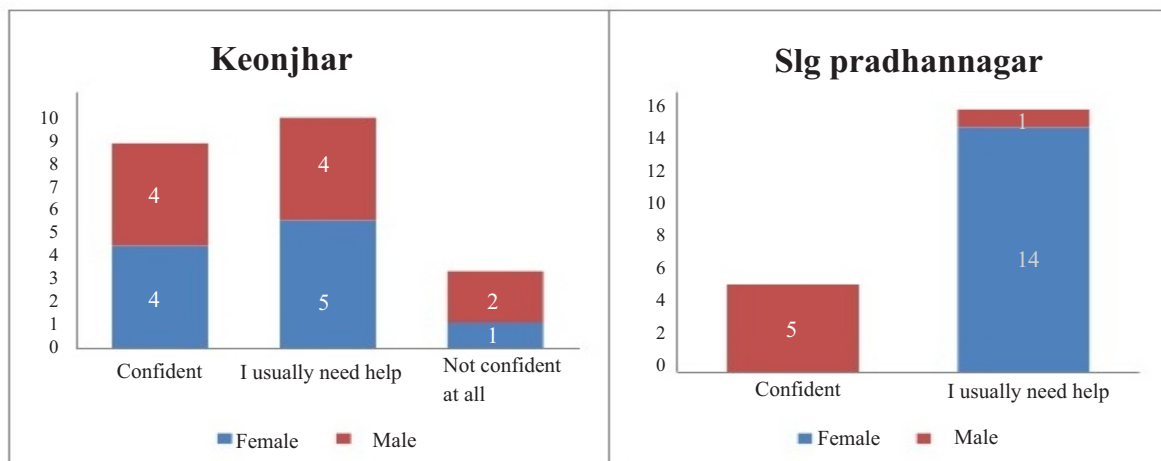
### West Zone



In west zone ahmednagar mula sonai and vithalwadi are two selected centers from vedanta foundation for this survey vithalwadi is most successful center in entire west zone as per enrolments in last year and ahmednagar mula is one of the lowest enrolled centers in west zone. As you can see in above charts in ahmednagar mula sonai chart it is shown that out of 20 students 14 students are confident with their computer skills and remaining 6 students knows basics and if you see in vithalwadi chart 12 – 16 students know basics of computing and remaining 4 students are not confident at all about their computer skills.

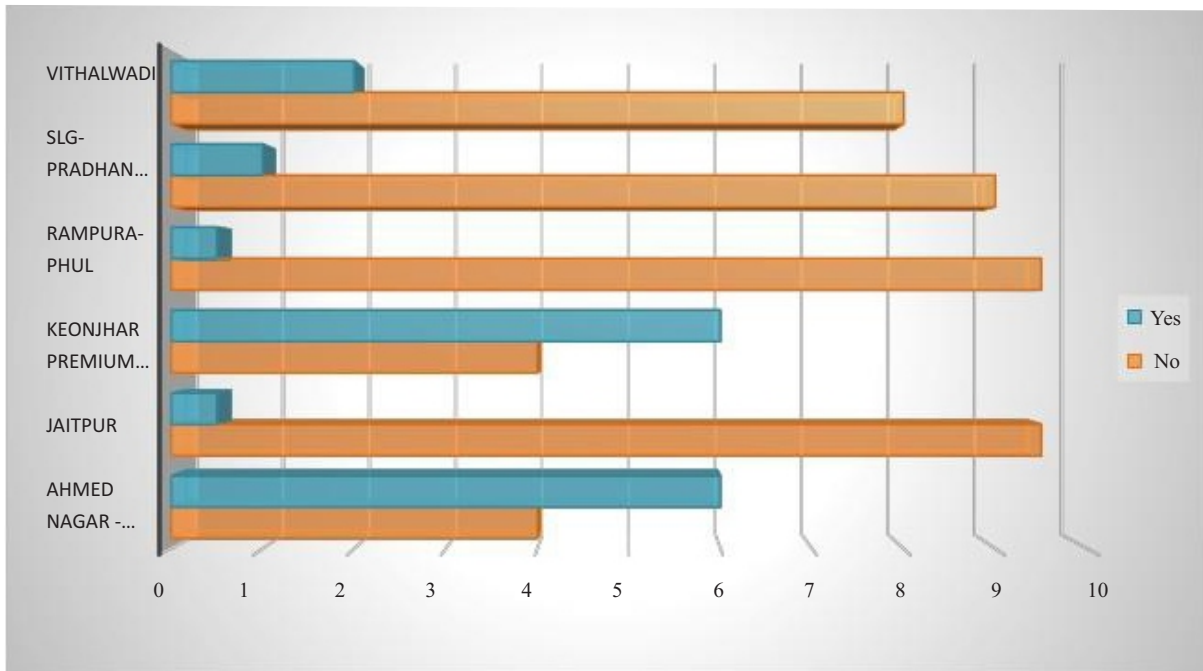


In case of Jaitpur students mostly answered that they have basic knowledge of computing and only 10% of the students answered that they are not confident at all and in case of Rampura phul 40% of the students answered that they are confident of their skills in computing and rest of the 60% answered that they just have basic knowledge about computing



And finally in east zone keonjhar and slg Pradhan nagar center's students gave responses that are shown above in the form of charts. In keonjhar center 40% students answered that they are confident and 15% not at all confident about their computing skills and remaining 45% of the students have basic knowledge of computing. In case of slg pradhannagar only 25% of the students are confident in their computing skills and remaining students know basics of computing

**We can relate above information to the next chart shown below. Following chart show how many of the students own a computer.**

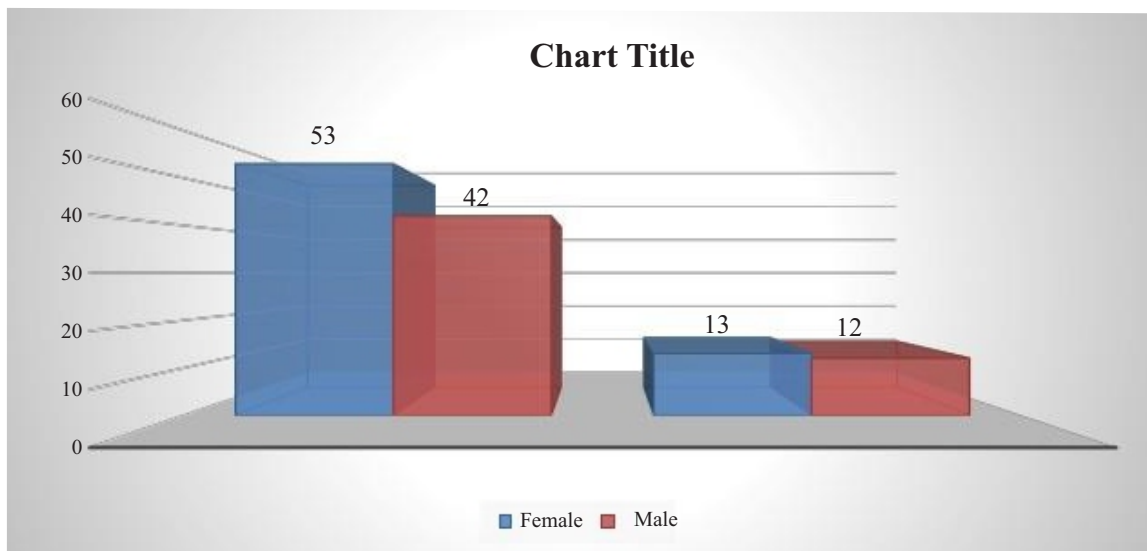


If you compare in west zone vithalwadi have less number of students who own a computer as compared Ahmednagar center and in east zone keonjhar students have more students who own computer as compared to S.L.G. Pradhannagar Center.

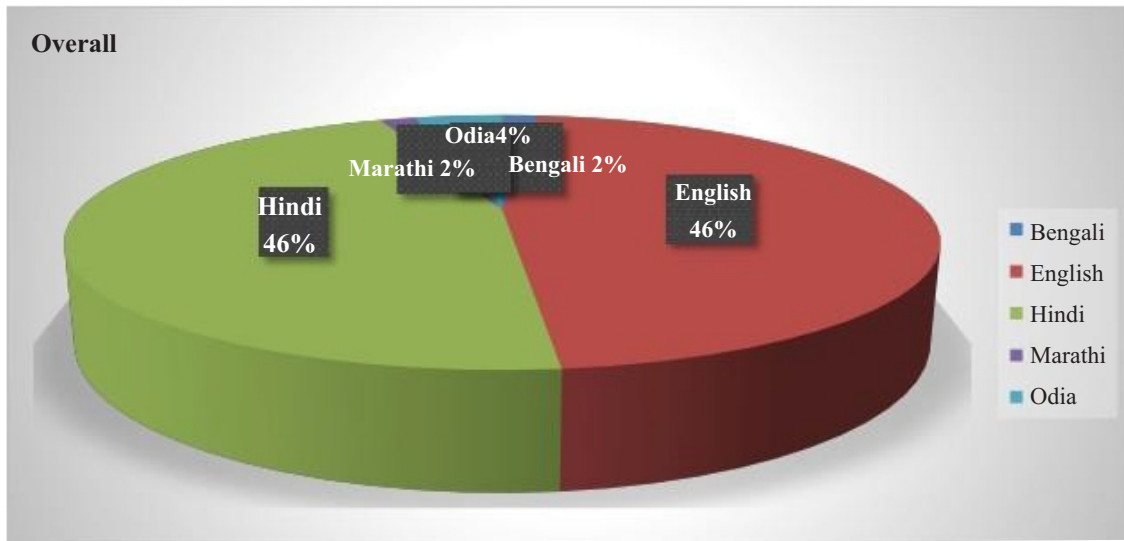
If we relate this two information of which student's own computer and which students are confident about their computer skills. You can see the logic that students who own computer or have some kind of access to computers are more confident about their skills.

### Overall age ratio in adult and minor in Vocational skill training

In all selected centers, randomly selected students have equal number of male and female student's ratio in minor age group and incase of adult age group, there are more females than male in this **ADULT AND MINOR RATIO** age group





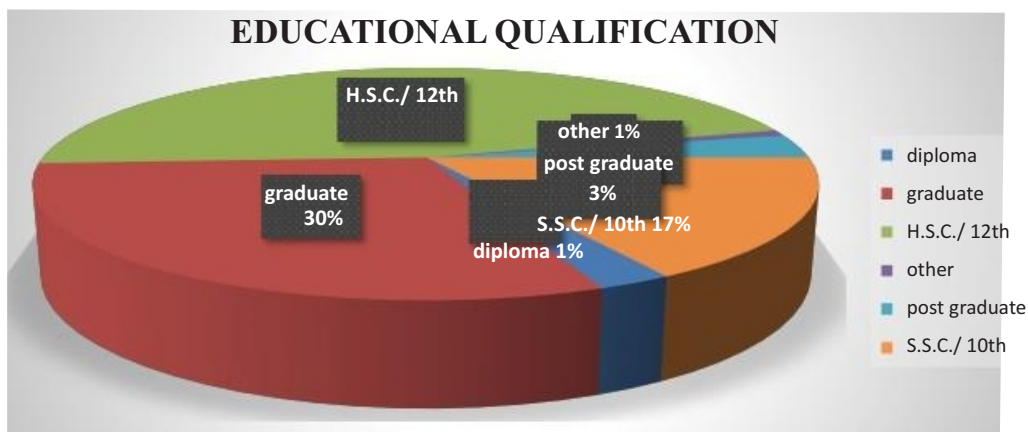


Computer is a very important device in any corporate work and employers are looking for candidates who are capable of using computer according to their field. In order to learn to use computer one should know and understand English language. In a developing country like India, where nearly 70% of the population lives in rural area. Most of the families in rural area prefer to send their kids/children's to vernacular medium school. At least 50% of the population comes from vernacular medium schools. if youth of the India cannot even understand English how are they going to learn computer. This is the major reason most of the Indian youth population is unemployed.

According to this survey, In few selected centers of all three zones the ratio of English medium and Hindi medium students is equal i.e. around 46% in English medium 46% in Hindi medium and remaining other languages like Marathi medium, Bengali medium etc. are around 7-8% combined.

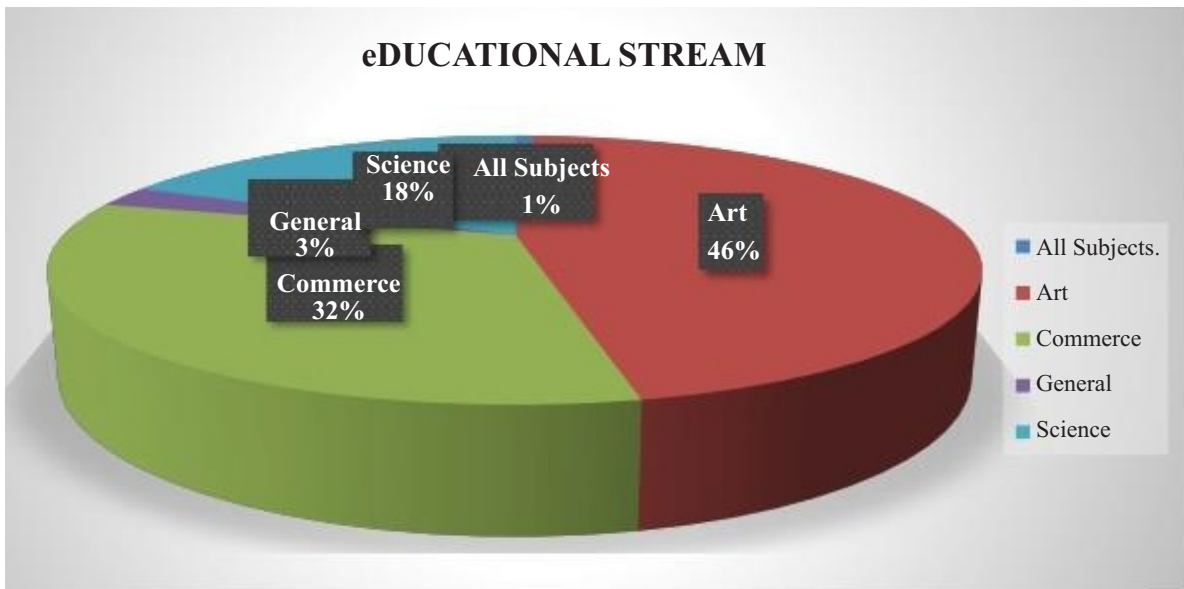
Centres like rampura-phul, jaitpur and keonjhar have less than 40% of students which are from English medium other than these centres rest of the centers have more than 75% of the students from English medium

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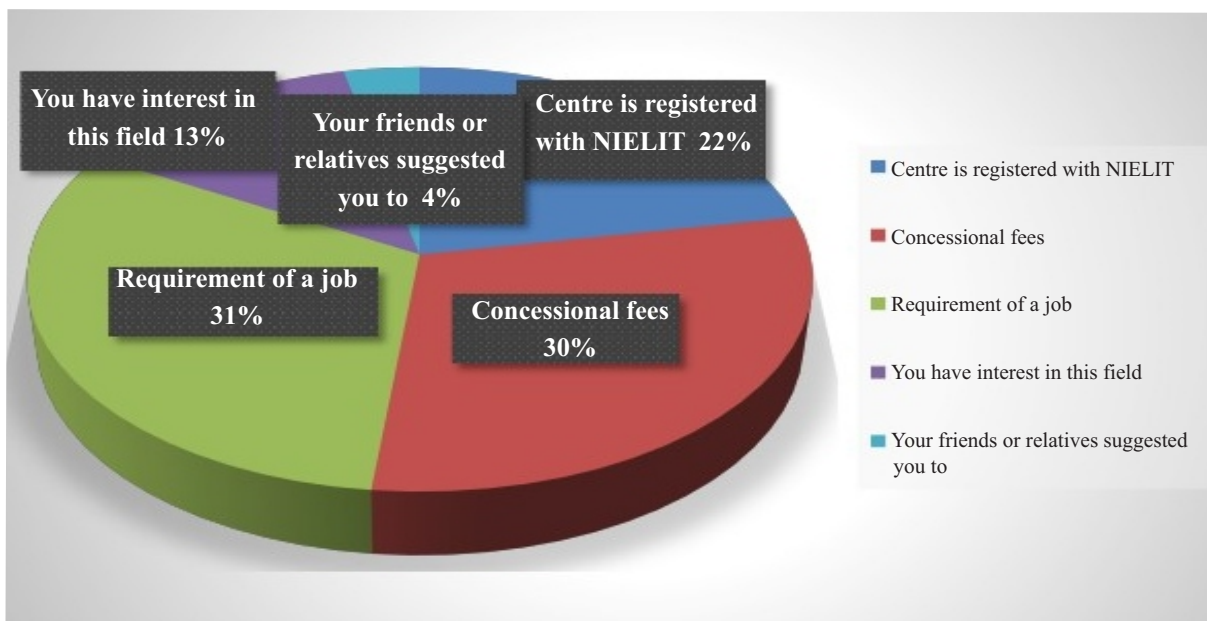


In those randomly selected students for survey more than 60% of the total student's educational qualification is SSC and HSC/12th and 30% of the total students are graduate.

In west zones centers 50% of the student's qualification is HSC/12th and in remaining 2 zones east and north zone 45% of the student's educational qualification is Hsc/12th. From which we can conclude that most of the students come for computer education/ courses after the completion of their 12th grade or HSC

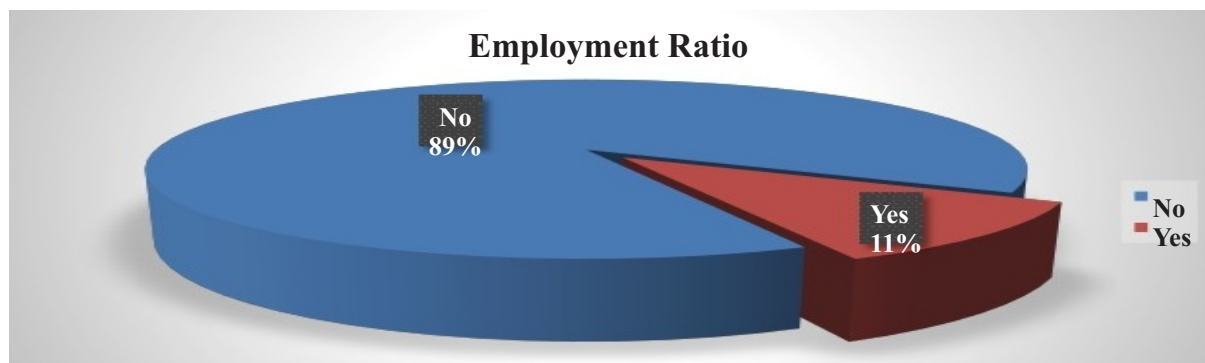


To know what category of students come to pursue at Vedanta foundation center it is really important to know that they are in which educational stream. In few selected centres 46% of the total students are in Arts Educational stream and 32% of the students are in commerce and remaining 22% of the students are in science and other streams

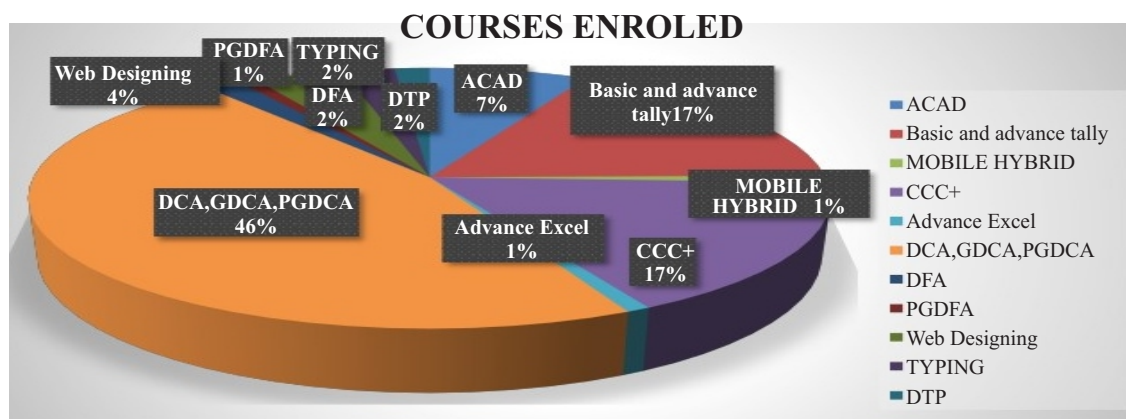


During this survey we also asked students of Vedanta foundation that what was the reason to pursue this particular course and at this centre. The result of the question is shown above in the form of chart for better understanding.

In Vedanta foundation computer centres most of the people who enrol are adult as shown in the "ADULT AND MINOR RATIO" chart. Which can explain why "Requirement for job" is the most answered reason for this question. Vedanta foundation skill training centres are all over India, but mostly in rural and remote areas. Most of the people in poor families start searching for jobs as they complete their graduation to earn and financial support their family. The second most told reason for the question is "Concessional fees" as stated before that Vedanta foundation computer courses charges only 900 rs for any course available at the centre right now. Third most given reason was the registration with the NIELIT, which provides certificates on the completion of course. Vedanta foundation is affiliated with NIELIT. NIELIT is an Institute as the name suggests National Institute of Electronics & Information Technology erstwhile known as DOEACC Society working as autonomous scientific society that is governed by Ministry of Electronics & Information technology, Government of India.

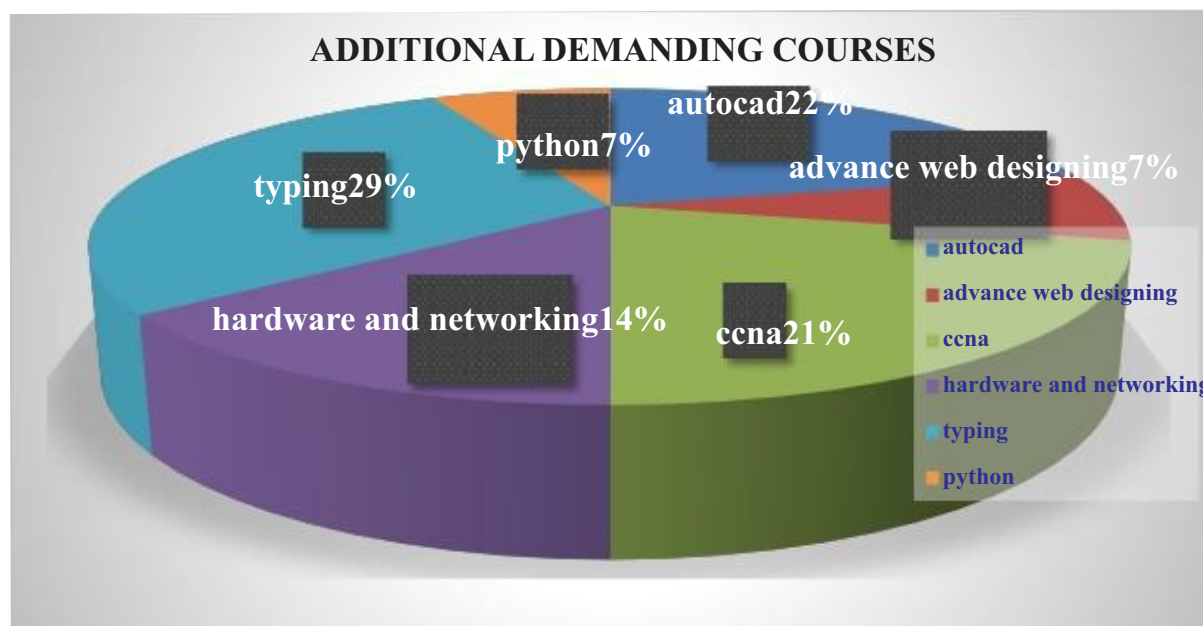


In this survey we even asked student if they are employed or not. The result for that question is shown above with the help of chart. As you can see that Only 11% of the total students are employed and rest 89% of the student are unemployed. From the above chart we can understand that more than 80% of the students are young and still pursuing their graduation & post-graduation or they are looking for jobs. The next question we asked them that what kind of job or a career are they looking for? Most of the students answered that they want to work in accounting or banking field.



Above given information in the form of chart is about which courses students are pursuing right now. In above chart 46% of the randomly selected students enrolled for the "DCA/GDCA/PGDCA" course. Second most enrolled course is "CCC+" which is a basic computing course and the third most enrolled course is "Basic or Advanced Tally" which is a accounting based software used in most of the reputed companies for accounting purposes.

These three courses are the most demanded and enrolled courses in Vedanta foundation skill training centres.



Vedanta foundation has been providing various skill training courses for the youth population to make them capable of achieving their career goals and acquire any job opportunity they get with the help of quality education (computer education) provided by Vedanta foundation. Vedanta foundation provided various options in computer courses according to the requirement of the job from basic courses to advance courses and Vedanta foundation have been very successful with those courses.

Now they want to introduce some new courses to attract beneficiaries to enrol. We also asked Vedanta foundation's existing students that which course they would like us to start in their centers, result of which is shown above in the form of pie chart. As you can see that student mostly voted for AutoCAD computer course and CCNA computer course. They also voted for some advance programming courses like python and advance web designing.

**SUMMARY OF FINDINGS:**

In chapter 4 analysis and interpretation of data collected by taking surveys of existing students and faculties in Vedanta foundation's premium centers we found out few interesting things which are stated as below:

- More than 90% of the students do not own or do not have access to the computer at their homes this is because prices of the computers for personal use are very high. Purchasing a personal computer for People in rural and remote areas is very expensive and there is no resource to use computer such as electricity, internet etc. to run a computer there should be a constant flow of electricity if the electricity is fluctuating then they will have to use UPS to (uninterruptible power supply) which will incur more expenses and that is not possible for every person in rural areas of India
- Another major problem faced by the Vedanta foundation's premium centers is lack of knowledge of faculties in advance courses. Not every faculty at every center is capable of teaching advanced courses.
- Almost in every center number of enrolments for vocational skill training courses by female students is higher than number of enrolments by male students.
- Number of enrolments for vocational skill development training courses is higher in students of educational qualification of 10th and 10th+2.
- Number of enrolments is higher in the months of April, May, June and July because in April month academic exams ends and summer vacation starts and the vacation ends in June or July.
- Number of students enrolling for the requirement of the job are very less.

### **CONCLUSION, RECOMMENDATION, LIMITATIONS:**

Here I would like to close the report with few suggestions and observations:

- Get accreditation from more government bodies like Nasscom, NSDC etc
  - o Reason: as I previously explained that around 30% of the students are already pursuing number of computer courses in Vedanta foundations vocational skill training courses is because those centers are affiliated with/ accredited by NIELTE.
- Launch additional new courses
  - o Reason: Vedanta foundation is providing number courses starting from basic to advance but there are few courses that students want to enroll for but are not available. So launching those new and advance courses at low cost/fees will really help those students.
- Start training sessions for trainers once a 3 months or 6 months for advance courses.
  - o Reason: A good quality education is one that provides all learners with capabilities, skills to achieve their dreams. Training sessions for trainer will ensure that at every center of the Vedanta foundation skill training program quality education is provided
- Start an alumni club for Vedanta foundation's skill training centers
  - o Reason: alumni club for vocational skill training centers will really help Vedanta foundation to find internships for existing students and it will motivate existing students to see alumni from these centers got good jobs
- Organize a countrywide event or fest once a year where students can participate in competitions, showcase their talents, and also get some knowledge and guidance from senior professionals. The event does not have to be physical the event can be online where students can participate
  - o Reason: This kind of events and competitions really motivates and attract students.

- Provide internships with the help/ tie ups with other companies.
- More comprehensive asset coding systems, along with the coding stickers for machines and furniture, bringing the whole thing into a flexible ERP platform and take complete control over asset shifting, burglary, damage and scrapping of assets.
- Implementation of ERP model to manage and regulate 'Training Delivery Schedules' at all Premium centers
- Half Yearly meeting of Area Managers, center faculties at their Zonal offices with remote guidance of Head Office, giving a sense to your team that they are a part of Vedanta Family and we look up to them to reach our benchmarks, rewarding the deserving members and offering incentives incorporating inflation heat.
  - o Reason: This shall help the centers enroll students at standard batch timings across India and help keep track on timely batch completion, exam scheduling and certification

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