

DHII

A Journal by the Department of MBA, MCA and M.Com (FA)



*Jyoti Nivas College Autonomous
Post Graduate Centre
Hosur Road, Bangalore - 95
www.jyotinivas.org*

Message

Effective people are not problem-minded; they are opportunity-minded. They feed opportunities and starve problems.

-Dr. Stephen Covey

It gives me immense pleasure to present to you the eighteenth issue of the Research journal - '***Daii***' April 2019. It is a journal by the students of MBA/MCA/M.COM (FA) that has both internal and external expert reviewer teams. The journal publishes articles on current research in the areas of Finance, Marketing, Human Resource and Information Technology. This issue has twelve articles.

The time spent at the Master's Degree must make a difference. In a way it is a stepping-stone to a different life altogether. Since, this is the ideal time for study and teaching learning thrives in an ambience wherein new knowledge is created, the course has been planned carefully to enable the students for further academic pursuits.

Encouraging students at their master's degree level to develop an interest in research is the first step in creating a culture of research. To make research a part of their curriculum, to start early to generate the interest in the young academicians is the purpose of this journal.

In their final year, the students have the opportunity to work on a research project in an area of their choice, under the guidance of one of the faculty members. This is to encourage independent study

in the students giving them an opportunity to engage with research and prepare them for higher levels of academia. The work that they put in towards the compilation and release of these journals, which they incidentally contribute articles to as well as edit, teaches them valuable lessons on research.

While ***‘Daii’*** hones the research skills in the students, it challenges the staff to keep abreast with the latest areas of research which in turn helps improve the quality of their teaching.

My sincere appreciation goes to our student contributors, who worked with ease, enthusiasm and joy. I thank my dear staff, who journeyed with our students and worked towards successful release of the 18th issue. Congratulations to the staff and students of MBA/MCA/M.Com (FA).

In our constant striving for excellence, we continue to march ahead keeping in mind the college motto ***‘Let Your Light Shine’***.

God Bless You

Dr. Sr. Lalitha Thomas

Director, Post Graduate Centre

Jyoti Nivas College Autonomous

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SECTION I (MCA)

Foreword

Definiteness of purpose is the starting point of all achievement.

– W. Clement Stone

The purpose of this journal is to foster and reward the scholarly efforts of our students as well as to provide a valuable learning experience. The first section of April 2019 edition of 'DHII' showcases 3 outstanding research papers from the field of computer science focusing the active areas of research namely cloud computing, image processing and text recognition.

The first paper of DHII is based on estimating the age of human face.

The human face has the characteristics such as age, gender, expressions and personal identity. The face image processing techniques has many applications in computer graphics and vision fields. The system contains webcam, screen and a computer, and it calculates the age, gender and facial expression of all faces in front of a webcam. The computer-based estimation and age synthesis from faces and has the various uses such as in CRM (customer relationship management) biometrics, cosmetology and, security control. In real time applications face recognition is interesting and challenging part.

The second paper of DHII focuses on hair based authentication.

Authentication systems compare a biometric data captured at the movement of access with the stored authentic data in a database. If both samples of the biometric data match, authentication is confirmed. Soft biometric traits refer to physical and behavioral traits, such as gender, height and weight, which are not unique to a specific subject, but are useful for identification, verification, and description of human subjects. Soft biometric attributes can be combined with classical biometric traits to improve the accuracy of a biometric recognition system. This paper focuses on the soft biometric extraction using computer vision and image processing algorithms which is further used for matching. The methods involves an implementation to obtain a hair image after processing the original image. This model first detects the human face, processes it and then detects and extracts the foreground and skin from the input image in order to generate hair segmentation. The segmented hair image is stored and

further used during the matching process for the purpose of authentication

The third paper is based on a comparative study of classification algorithms on e-mail spam detection

Electronic mail or E-mail is a method of sharing files or attachments to pass messages through computer networks or now known as Internet. As we know in this modern world most of the transaction and business talks are done through e-mails. The rapid growth of e-mail users has also resulted in the growth of email spammers during past few years. Therefore resulting in the junk of spam mails in the inbox which results in the consumption of network bandwidth which results in blocking the e-mail servers. This paper uses machine learning algorithms to categorize the e-mail as spam or ham. In this paper we compare three algorithms namely Naïve Bayes classifier, J48 algorithm and Random Forest, to find which algorithm gives the best accuracy in classification of spam and ham mails based on the evaluation criteria. Here we consider the Correctly Classified Instances, Incorrectly Classified Instances, ROC value, Kappa statistic and Mean Absolute error as the evaluation criteria.

Dr. Shilpa Abhang

Assistant Professor, Department of MCA

Jyoti Nivas College Autonomous

ESTIMATING THE AGE OF HUMAN FACE

~Soumya Suman, ~Sheeba Kausar

Abstract

The human face has the characteristics such as age, gender, expressions and personal identity. The face image processing techniques has many applications in computer graphics and vision fields. The system contains webcam, screen and a computer, and it calculates the age, gender and facial expression of all faces in front of a webcam. The computer-based estimation and age synthesis from faces and has the various uses such as in CRM (customer relationship management) biometrics, cosmetology and, security control. In real time applications face recognition is interesting and challenging part.

Keywords - biometrics, face recognition, facial aging, age estimation, aging pattern.

1. INTRODUCTION

An age estimation is the estimation of age from the facial image with the exact age in year or the age range. The three recognition results shows a wide variety of machine learning problems such as:

1. Object detection use to find the face
2. Age estimation represents a regression problem with a real-valued target output,

3. Gender prediction is a binary classification problem and
4. Facial expression prediction is a multi-class classification problem.

The system is implemented in Python and uses Tensor flow, Open CV and dlib libraries for the computations. The face detector is trained with Tensorflow Object Detection API and use through OpenCV, face alignment uses dlib, and all recognition networks run on Tensorflow via Keras front end. The system runs on an i7 2600 CPU only.

The challenge in real-time operation is that there are numerous components in the system, and each uses different amount of execution time. The system should be designed such that the operation appears smooth, which means that the most visible tasks should be fast and have the priority in scheduling.

Following Packages are required

OpenCV 3.4.1+-(Open source computer vision) is a library of programming functions mainly aimed at real-time computer vision. It has Python++ and Java interfaces and support iOS, Windows, Linux, Mac OS, and Android. OpenCV designed for computational efficiency with a strong focus on real-time applications. It is written in optimized C/C++, the library take the advantage of multi-core processing. It is enabled with OpenCL, it can take advantage of the hardware acceleration of underlying heterogeneous compute platform. OpenCV supports the deep learning frameworks Caffe, Tensor Flow and Torch/PyTorch. OpenCV-Python is a library of Python bindings designed to solve computer vision problems. OpenCV-Python makes use of Numpy, which is a highly optimized library for numerical operations with a MATLAB-style syntax. All the OpenCV array structures are converted to and from Numpy arrays. This also makes it easier to integrate with other libraries that use Numpy such as SciPy and Matplotlib.

Tensorflow 1.8+-TensorFlow is an open-source machine learning library for research and production. TensorFlow is an open source software library for high performance numerical computation. Its

flexible architecture allows easy deployment of computation across a variety of platforms (CPUs, GPUs, TPUs), and from desktops to clusters of servers to mobile and edge devices. Originally developed by researchers and engineers from the Google Brain team within Google's AI organization, it comes with strong support for machine learning and deep learning and the flexible numerical computation core is used across many other scientific domains.

Keras 2.2.2+-Keras is a high-level neural networks API, written in Python and capable of running on top of TensorFlow, CNTK. It was developed with a focus on enabling fast experimentation. Allows for easy and fast prototyping (through user friendliness, modularity, and extensibility).It supports both convolutional networks and recurrent networks, as well as combinations of the two. It runs seamlessly on CPU and GPU. Keras is compatible with: Python 2.7-3.6.

dlib 19.4+-Dlib is a modern C++ toolkit containing machine learning algorithms and tools for creating complex software in C++ to solve real world problems. It is used in both industry and academia in a wide range of domains including robotics, embedded devices, mobile phones, and large high performance computing environments. Dlib's open source licensing allows us to use it in any application, free of charge.

2. PROBLEM STATEMENT

2.1 Exiting System

The appearance of a human face is affected considerably by aging. Facial aging effects are mainly attributed to bone movement and growth and skin related deformations associated with the introduction of wrinkles and reduction of muscle strength. Usually bone growth takes place during childhood whereas during adult ages the most intense age-related deformations are linked with texture changes. The observation of aging-related features on faces allows humans to estimate the age of other persons just by looking at their face. However, researchers who carried out work in studying the process of age estimation by humans conclude that humans are not so accurate

in age estimation hence the possibility of developing automatic facial age estimation methods poses an attractive direction.

2.2 Proposed System

In this paper we describe the anatomy of a real-time facial analysis system. The system recognizes the age, gender and facial expression from users in appearing in front of the camera. All components are based on convolutional neural networks, whose accuracy we study on commonly used training and evaluation sets. A key contribution of the work is the description of the interplay between processing threads for frame grabbing, face detection and the three types of recognition. The python code for executing the system uses common libraries such as keras/tensor flow, opencv and dlib.

3. METHODOLOGY

The system is running in threads. The whole system is controlled by the upper level controller and visualization thread, which owns and starts the sub threads dedicated for individual tasks. The main thread holds all data and executes the visualization loop showing the recognition results to the user at 25 frames per second. The recognition process starts from the grabber thread, which is connected to a webcam. The thread requests video frames from camera for feeding them into a FIFO buffer located inside the controller thread. At grab time, each frame is wrapped inside a class object, which holds the necessary Meta data related to each frame. More specifically, each frame is linked with a timestamp and a flag indicating whether the face detection has already been executed and the locations of all found faces in the scene. The actual face analysis consists of two parts: face detection and face analysis. The detection is executed in the detection thread, which operates asynchronously, requesting new non-processed frames from the controller thread. After face detection, the locations of found faces are sent to the controller thread, which then matches each new face with all face objects from the previous frames using straightforward centroid tracking. Tracking allows us to average the estimates for each face over a number of recent frames. The detection thread operates

on the average faster than the frame rate, but sometimes there are delays due to high load on the other threads. Therefore, the controller thread holds a buffer of the most recent frames, in order to increase the flexibility of processing time.

The recognition thread is responsible for assessing the age, gender and facial expression of each face crop found from the image. The thread operates also in an asynchronous mode, requesting new non-processed (but face-detected) frames from the controller thread. When a new frame is received, the thread first aligns the face with a face template. This is done by detecting 68 facial landmarks using an ensemble of regression trees as implemented in the dlib computer vision library. After face alignment, we pass each aligned face to three separate networks: age recognizer, gender recognizer, and expression recognizer. Typically, each network takes approximately 200 ms for the forward pass, so in total the thread consumes about 600 ms per cropped face. Naturally, the amount of time grows linearly with the number of faces in the scene. However, the system still appears fast and responsive, because the camera view and all detections are real-time. Only the recognition results are updated only about once per second. The recognition thread is also optimized to evaluate age and gender less frequently than the expression. This is because age and gender are supposed to be constant, and users expect a quick response to their expressions. This reduces the average time per face by about 50% to approximately 300 ms.

COMPONENTS OF THE SYSTEM

- Face detection-The face detection uses the SSD detector with Mobile Net backbone, depth parameter $\alpha = 0.75$ and input size 240x180. The depth parameter was chosen for fast performance and the input size matches the camera's aspect ratio 4:3.
- Age recognition-The age estimation uses Mobile Net with depth parameter $\alpha = 1.0$. The network is initialized using Imagenet-pretrained weights and fine-tuned in two stages: first

with the large but noisy 500K IMDB-WIKI dataset and then using the small but accurate CVPR2016 LA challenge dataset.

- Gender recognition-MobileNet with $\alpha = 1.0$ is used again. The last three layers were removed and replaced by a layer containing a single neuron and the network is trained from scratch in two stages: first with the 500K IMDB-WIKI dataset and then fine-tuned with the CVPR2016 LAP challenge dataset.
- Facial expression recognition- MobileNet with $\alpha = 1.0$ is used here, as well. The network is initialized with ImageNet pre-trained weights and fine-tuned with AffectNet database containing 7 different expressions.

All components use convolutional networks:

- Detection uses an SSD model trained on Tensorflow object detection API, but running on OpenCV.
- Age, gender and facial expression use a mobile net trained and running on keras.

4. CONCLUSIONS

In our paper we use a real-time facial analysis system. The system recognizes the age, gender and facial expression from users in appearing in front of the camera. All components are based on convolutional neural networks, whose accuracy we study on commonly used training and evaluation sets. A key contribution of the work is the description of the interplay between processing threads for frame grabbing, face detection and the three types of recognition.

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HAIR BASED AUTHENTICATION

~Prema D, ~Vinisha R

Abstract

Authentication systems compare a biometric data captured at the movement of access with the stored authentic data in a database. If both samples of the biometric data match, authentication is confirmed. Soft biometric traits refer to physical and behavioral traits, such as gender, height and weight, which are not unique to a specific subject, but are useful for identification, verification, and description of human subjects. Soft biometric attributes can be combined with classical biometric traits to improve the accuracy of a biometric recognition system. This paper focuses on the soft biometric extraction using computer vision and image processing algorithms which is further used for matching. The methods involves an implementation to obtain a hair image after processing the original image. This model first detects the human face, processes it and then detects and extracts the foreground and skin from the input image in order to generate hair segmentation. The segmented hair image is stored and further used during the matching process for the purpose of authentication

Keywords: *Image Processing, segmentation, Authentication..*

1. INTRODUCTION

The soft biometric information is extracted from a human body is ancillary information is easy to identify distinguished at a distance but the recognition task is not fully identified. This paper presents the review on soft biometrics traits information's and how to detect a person using his segmented hair image using Image Processing techniques and Computer Vision

Image Processing is a method to convert an image into digital form and perform some operations on it, in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image, like video frame or photograph and output may be image or characteristics associated with that image. Usually Image Processing system includes treating images as two dimensional signals while applying already set signal processing methods to them. Image processing basically includes the following three steps.

- Importing the image with optical scanner or by digital photography.
- Analyzing and manipulating the image which includes data compression and image enhancement and spotting patterns that are not to human eyes like satellite photographs.
- Output is the last stage in which result can be altered image or report that is based on image analysis.

Segmentation is the process of partitioning a digital image into multiple segments (sets of pixels). The goal of segmentation is to simplify and/or change the representation of an image into something that is more meaningful and easier to analyse. Image segmentation is the process of assigning a label to every pixel in an image such that pixels with the same label share certain characteristics. The result of image segmentation is a set of segments that collectively cover the entire image, or a set of contours extracted from the image.

Computer vision is concerned with the automatic extraction, analysis and understanding of useful information from a single image or a sequence of images. It involves the development of a theoretical and algorithmic basis to achieve automatic visual understanding.

The applications of computer vision are numerous and include:

- agriculture
- augmented reality
- autonomous vehicles
- biometrics
- character recognition
- forensics
- industrial quality inspection
- face recognition

This paper **Hair Based Authentication** involves the process of hair extraction which can be divided into three main modules. Firstly, extracting the foreground image from the original image. Secondly, detecting skin from the image and finally, subtracting skin from the image to obtain only hair region from the image using the following algorithms Haar Cascade Classifier for face detection, Grabcut Algorithm for foreground detection, HSV colour space for skin detection, Canny Edge detection algorithm to perform contouring and segment the hair region. And finally, we perform pixel matching with the newly obtained image and the existing image for the purpose of authentication.

2. Problem Statement

2.1 Existing system

Authentication is the act of confirming the truth of an attribute of a single piece of data claimed true by an entity. In contrast with identification, which refers to the act of stating or otherwise indicating a claim purportedly attesting to a person or thing's identity, authentication is the process of actually confirming that identity. It might involve confirming the identity of a person by validating their

identity documents, verifying the authenticity of a website with a digital certificate, determining the age of an artifact by carbon dating, or ensuring that a product is what its packaging and labelling claim to be. In other words, authentication often involves verifying the validity of at least one form of identification.

Historically, **fingerprints** have been used as the most authoritative method of authentication, but court cases in the US and elsewhere have raised fundamental doubts about fingerprint reliability. Outside of the legal system as well, fingerprints have been shown to be easily spoofable. Hybrid or two-tiered authentication methods offer a compelling solution, such as private keys encrypted by fingerprint inside of a USB device.

2.2 Proposed system

In our proposed work, we build an environment to generate a segmented hair image of a person which is further used for authentication. The process of hair extraction can be divided into three main modules. Firstly, extracting the foreground image from the original image. Secondly, detecting skin from the image and finally, subtracting skin from the image to obtain only hair region from the image.

Techniques

- Image preprocessing
- Foreground extraction
- Skin extraction
- Hair extraction
- Authentication

Flowchart and Algorithms used:

Haar Cascade Classifier for face detection

Haar feature-based cascade classifiers is an effective object detection method proposed by Paul Viola and Michael Jones in their paper, "Rapid Object Detection using a Boosted Cascade of Simple Features" in 2001. It is a machine learning based approach where a cascade

function is trained from a lot of positive and negative images. It is then used to detect objects in other images. OpenCV comes with a trainer as well as detector. If you want to train your own classifier for any object like car, planes etc. you can use OpenCV to create one. Here we will deal with detection. OpenCV already contains many pretrained classifiers for face, eyes, smiles, etc. Those XML files are stored in the `opencv/data/haarcascades/` folder.

Grabcut Algorithm for foreground detection

GrabCut is an image segmentation method based on graph cuts. Starting with a user specified bounding box around the object to be segmented, the algorithm estimates the colour distribution of the target object and that of the background using a Gaussian mixture model. This is used to construct a Markov random field over the pixel labels, with an energy function that prefers connected regions having the same label, and running a graph cut based optimization to infer their values. As this estimate is likely to be more accurate than the original, taken from the bounding box, this two-step procedure is repeated until convergence.

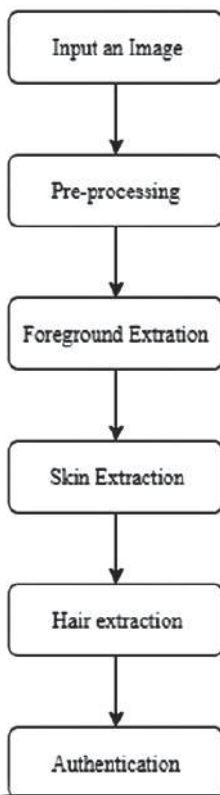
HSV color space for skin detection

HSV (hue, saturation, value) are alternative representations of the RGB color model, designed in the 1970s by computer graphics researchers to more closely align with the way human vision perceives color-making attributes. In these models, colors of each *hue* are arranged in a radial slice, around a central axis of neutral colors which ranges from black at the bottom to white at the top. The HSV representation models the way paints of different colors mix together, with the *saturation* dimension resembling various shades of brightly colored paint, and the *value* dimension resembling the mixture of those paints with varying amounts of black or white paint.

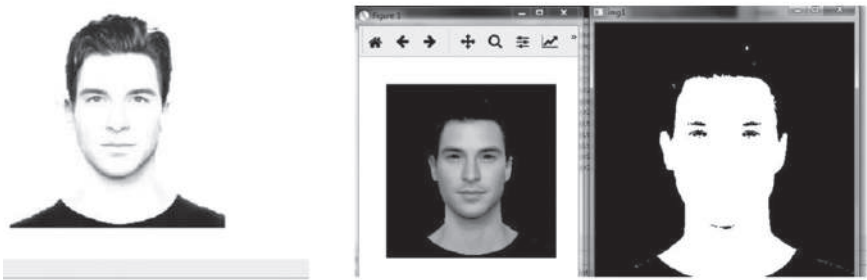
3. Workflow

- ⇒ Initially load the original image for preprocessing
- ⇒ Extract foreground from the image using grabcut algorithm

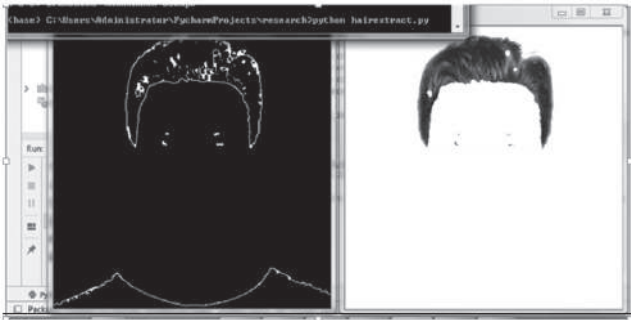
- ⇒ Extract skin from the original image using HSV color space value and also extract skin mask
- ⇒ Dilate the obtained skin mask in order to remove eyes present in the skin mask
- ⇒ Add the dilated skin mask with the extracted foreground image to eliminate the skin from the image
- ⇒ Detect the edges from the obtained image, perform contouring to eliminate the maximum area and extract only the hair image
- ⇒ Save the extracted hair image and use pixel matching for authentication



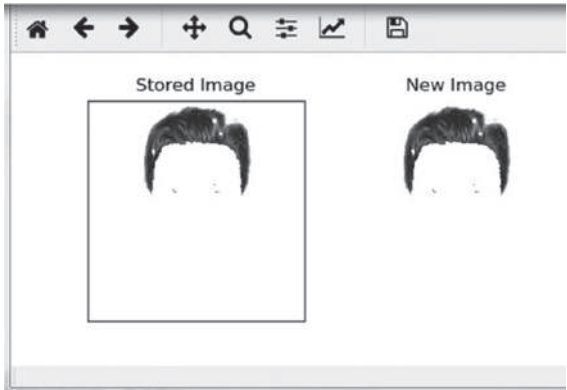
3. Result



a. Foregroundd extraction b. Skin Extraction



c. Hair Extraction



d. Authentication

4. Conclusion

In our proposed system, we present an implementation to obtain a hair image after processing the original image. This model first detects the human face, processes it and then detects and extracts the foreground and skin from the input image in order to generate hair segmentation. The segmented hair image is stored and further used during the matching process for the purpose of authentication.

5. Future Enhancement

As a refinement in this project the performance in hair extraction can be increased by using algorithms with universal values to obtain a high quality of segmented hair image. We should improve the hair which are long and with different hair texture and hair types.

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A COMPARATIVE STUDY OF CLASSIFICATION ALGORITHMS ON E-MAIL SPAM DETECTION

~ Pavithra S, ~Athulya UK

Abstract

Electronic mail or E-mail is a method of sharing files or attachments to pass messages through computer networks or now known as Internet. As we know in this modern world most of the transaction and business talks are done through e-mails. The rapid growth of e-mail users has also resulted in the growth of email spammers during past few years. Therefore resulting in the junk of spam mails in the inbox which results in the consumption of network bandwidth which results in blocking the e-mail servers. This paper uses machine learning algorithms to categorize the e-mail as spam or ham. In this paper we compare three algorithms namely Naïve Bayes classifier, J48 algorithm and Random Forest, to find which algorithm gives the best accuracy in classification of spam and ham mails based on the evaluation criteria. Here we consider the Correctly Classified Instances, Incorrectly Classified Instances, ROC value, Kappa statistic and Mean Absolute error as the evaluation criteria.

Keywords - Spam mails, ham mails, classified instances, machine learning.

1. Introduction

E-mail is an inexpensive method of exchanging messages over the network. Spam affects the memory space, computing power and speed. The internet is a powerful tool. E-mail is used to transfer messages or information over the internet. As the usage of e-mail has been increasing in our day to day life, there is also a wider growth or increase of spam mails. At any corner of the world through various advertisements, fake proposal etc spam mails can be originated. Even though different tools are available to prevent spam mails, but still there is huge increase in it. One of the ways to assess this situation is that the organization can examine the count of spam mails through various methods that means it includes corporate e-mail systems, spam filtering, gateways and end-user training.

There are various definitions of spam, the shortest definition is unwanted electronic mail. The biggest problem in spam filtering that the user faces is that a valid mail may also be considered as a spam mail because of this problem we miss valid mails in our inbox. Consider if the spam mails are not filtered, it occupies wider space in the inbox, causing serious problems including reduction of bandwidth and storage. There are techniques to identify whether the mails that are received are spam mails as follows: J48 algorithm, Naïve Bayes classifier, Random Forest.

J48 Algorithm: This algorithm can be used for classification problems. The decision tree is generated by C4.8. At each node of the tree the algorithm chooses an attribute that further splits the samples into subsets. Each leaf node represents a decision or a classification. If all are of the same class, then the tree is a leaf. So the leaf is returned labelled with a class. For every attribute calculate the potential information provided by a test on the attribute, also calculate the gain from a test on the attribute. Depending on the selection criterion, find the best attribute to branch on further.

Naïve Bayes Classifier: This classification is a supervised learning method and also a statistical method. It solves diagnostic and predictive

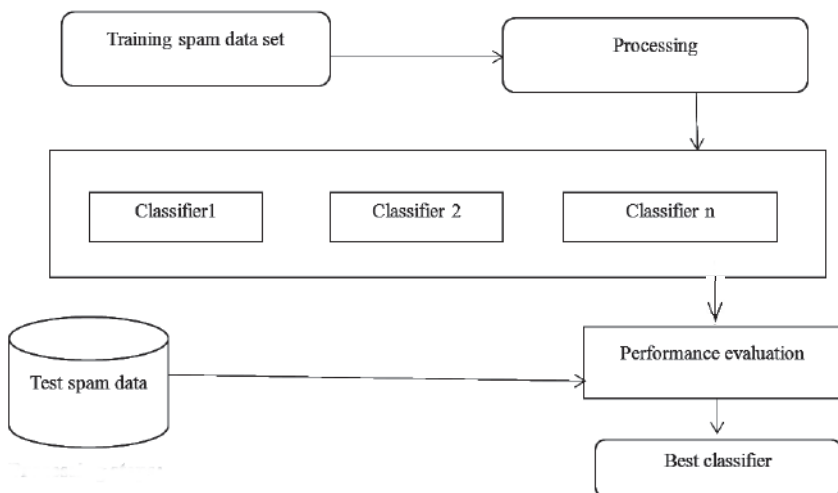
problems. It classifies based on probability. Bayesian classification provides practical learning algorithm and prior knowledge. It provides a useful perspective for understanding and evaluating many learning algorithms. It calculates explicit probabilities for hypothesis and it is a robust to noise in input data.

Random Forest: It is a classifier that consists of many decision trees. It is one of the most accurate learning algorithms. It provides high rate of accuracy, for many datasets. It runs efficiently on large databases. It can handle many input variables. It calculates the variables that are needed for classification. It is a very good method for estimating missing data and maintains accuracy when a large number of data are missing.

2. Proposed System

The proposed methodology detects the spam mails with the help of classifiers. Firstly many classifiers are applied for the main purpose of spam mail classification and the results are tested based on the evaluation criteria related to each classifier. The classifiers used for spam mail classification are J48 algorithm, Naïve Bayes Classifier, Random Forest algorithm.

System Design



Processing steps:

- In the first step the unprocessed data is taken and data set is created by processing the data preprocessing techniques.
- Few of the data set are used for testing and the other are used for testing the model.
- After the data set is received, it is given for training to trained dataset.
- Data sets are given to all the three classifiers and the accuracy is calculated for different test data sets.
- Based on the evaluation criteria the best classifier is decided.

Algorithm Description

- **J48 Algorithm (Decision Tree)**

It is an algorithm used to generate a decision tree. The decision tree that are generated can be used for classification. It is a multi-class classifier forming decision trees for the training data set. The generated decision tree using the J48 algorithm depends on the training data attribute values, for the classification of new data item. It splits the data into multiple sets, each attribute of data can be used to form a decision.

Algorithm:

- Step 1: DTree (examples, features) returns a tree
- Step 2: If all examples are in one category, return a leaf node with that category Label.
- Step 3: Else if the set of features is empty, return a leaf node with the category label that is the most common in examples.
- Step 4: Else pick a feature F and create a node R for it.
- Step 5: For each possible value v_i of F:
- Step 6: Let examples i be the subset of examples that have value v_i for F
- Step 7: Add an out-going edge E to node R labeled with the value v_i .

Step 8: If examples i empty Then attach a leaf node to edge E labeled with the category that Is the most common in examples.

Else call $DTree(\text{examples } I, \text{features} - \{F\})$ and attach the resulting tree as the subtree under edge E .

Step 9: Return the subtree rooted R .

- **Naïve Bayes Classifier**

The Naïve Bayes classifier is a simple and effective classifier used in many applications of data processing including natural language processing, information retrieval etc. This classifier is based on Bayesian theorem and is particularly efficient when the dimensionality of the inputs is high. Depending on the nature of the probability model, Naïve Bayes classifiers can be trained very efficiently in a supervised learning setting.

Algorithm:

Step 1: select the file

Step 2: Extracting the feature with help of word count algorithm.

Step 3: Training the dataset with spam and ham mails.
 $\text{Prob_spam} = (\text{sum}(\text{train_matrix}(\text{spam_indices},)) + 1) / (\text{spam_wc} + \text{numtokens})$
 $\text{Prob_nonspam} = (\text{sum}(\text{train_matrix}(\text{nonspam_indices},)) + 1) / (\text{nonspam_wc} + \text{numtokens})$ the help of Naïve Bayesain Classifier.

Step 4: Find the probability of spam.

Step 5: Testing the dataset
 $\log_a = \text{test_matrix} * (\log(\text{prob_tokens_spam})) + \log(\text{prob_spam})$
 $\log_b = \text{test_matrix} * (\log(\text{prob_tokens_nonspam})) + \log(1 - \text{prob_spam})$
 if $\log_a > \log_b$ then document are spam else the document are non-spam mails.

Step 6: Classify the spam and non-spam mails.

Step 7: Compute the error of the text data and calculate the word which is wrongly classified
 $\text{Numdocs_wrong} = \text{sum}(\text{xor}(\text{output}, \text{text_labels}))$

Step 8: Display the error rate of text data and calculate the fraction of wrongly.

- **Random Forest**

It is an ensemble classifier that consists of many decision trees. The term came from random decision forests that was first proposed by Tin Kam Ho of Bell Labs in 1995. It combines Breiman's "bagging" idea and the random selection of features.

Algorithm:

- Step 1: Let the number of training cases be N , and the number of variables in the classifier be M .
- Step 2: We are told the number m of input variables to be used to determine the decision at a node of the tree; m should be much less than M .
- Step 3: Choose a training set for this tree by choosing n times with replacement from all N available training cases. Use the rest of the cases to estimate the error of the tree, by predicting their classes.
- Step 4: For each node of the tree, randomly choose m variables on which to base the decision at that node. Calculate the best split based on these m variables in the training set.
- Step 5: Each tree is fully grown and not pruned

For prediction a new sample is pushed down the tree. It is assigned the label of the training sample in the terminal node it ends up in. This procedure is iterated over all trees in the ensemble, and the average vote of all trees is reported as random forest prediction.

3. Methodology

The comparative study of different algorithms were experimented in WEKA environment.

Step 1:

The data set named Spam Mails was taken from the <https://github.com/waleedalinizami/Spam-Detection-Using-Weka> repository. The dataset consists of two attributes, 5180 instances among these instances 3672 were ham mails, norms were 8 and 1500 were spam mails. WEKA tool version 3.8.3 is available <https://www.cs.waikato.ac.nz/ml/weka/downloading.html> was downloaded. WEKA is an open source machine learning software.

Step 2:

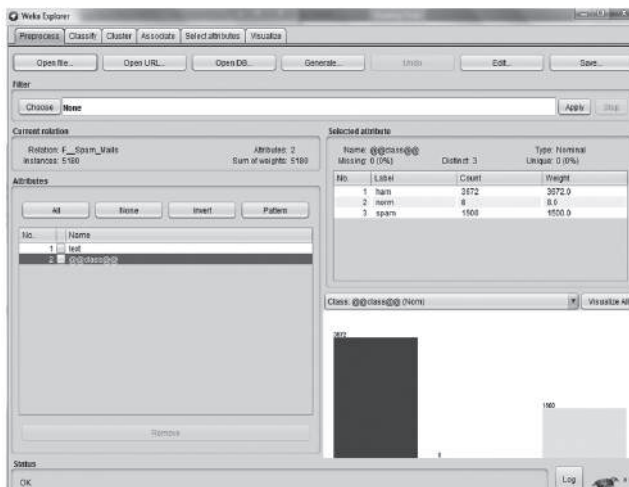
In WEKA, the filtering refers to the preprocessing of a dataset before it is trained. We choose an unsupervised attribute namely stringToword vector for classification. WEKA provides a various number of filters for both supervised and unsupervised.

Step 3:

When the attribute was selected and the training set was given to train the model, and when the model was tested by giving the test data, the accuracy was calculated, and based on the evaluation criteria, the best algorithm was chosen.

4. Results and Discussion

Figure 1: loading dataset into Weka



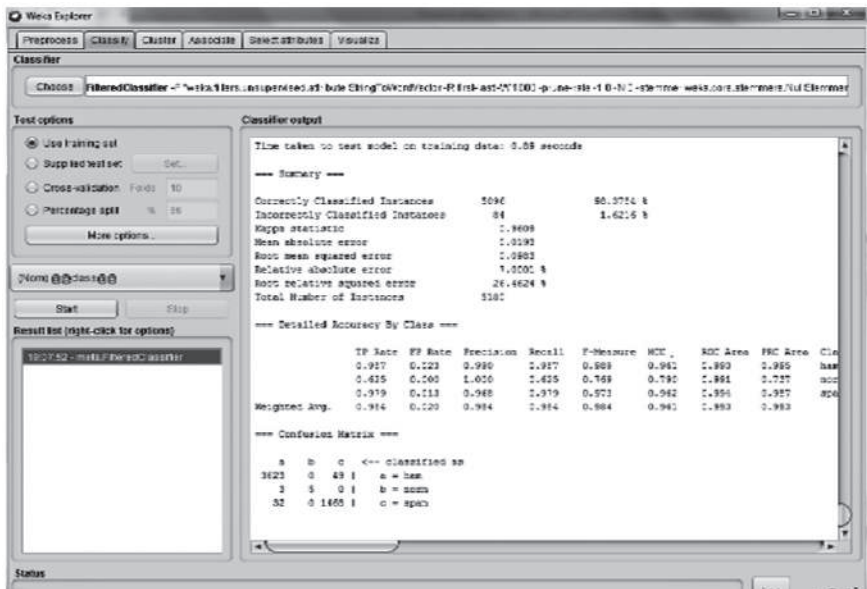


Figure 2: Input training set

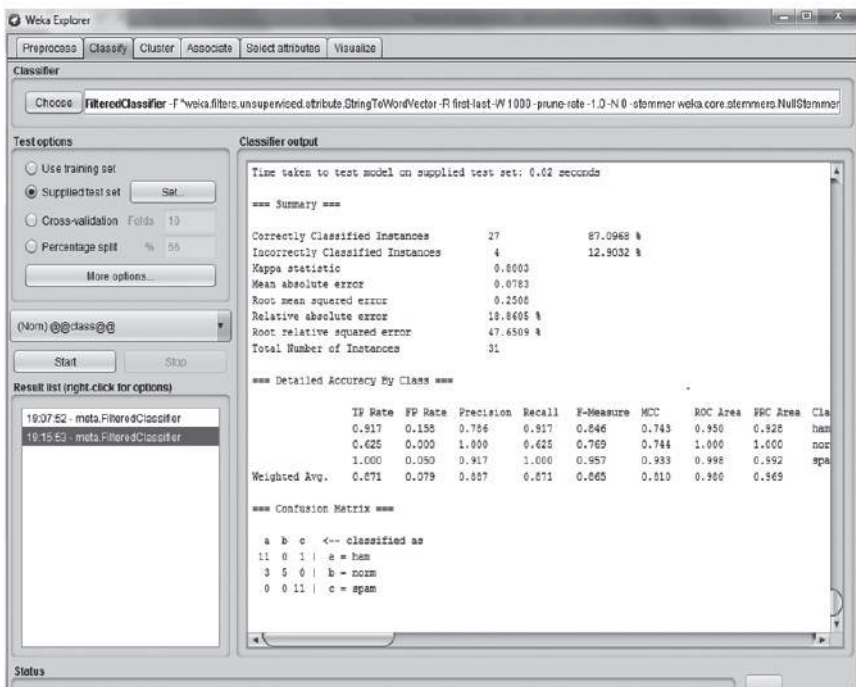


Figure 3: Supply test set

Table: Classification Accuracy Test Results

Evaluation Criteria	J48	Naïve Bayes classifier	Random Forest
Correctly classified Instances	87.0968	96.7742	96.7742
Incorrectly classified instances	12.9032	3.2258	3.2258
Kappa statistic	0.8003	0.951	0.951
Mean absolute error	0.0783	0.0215	0.1074
ROC Area (avg)	0.980	0.997	0.980

5. Conclusion

In this research we have performed the experiments in order to determine the classification accuracy of three algorithms to find which algorithm gives the best accuracy results with an attractive data mining tool called WEKA. Three algorithms namely, J48, Naïve Bayes and Random Forest were compared on the basis of evaluation criteria. It is clear from the stimulation results that the highest classification accuracy performance is for Naïve Bayes classifier for the spam e-mail data sets containing 5180 instances. Furthermore Random Forest also showed the similar results that were only slightly different from Naïve Bayes. J48 classification algorithm showed less accuracy when compares to the other two algorithms.

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SECTION II (MBA)

Foreword

Research is creating new knowledge

Neil Armstrong

*The researches taken up by our MBA students has led to the discovery of new insights and trends in today's Human Resource, Marketing and Finance world, we proudly present their effects and findings in our post – graduate journal **DHII**, 2018.*

The first paper is by Ms. Priya. M, where her main objective was to do a study on performance budget in general and to find out the reasons for variance in budget and actual performance. She presupposes a crystal clear perception of organizational objectives and short-term business objectives as stipulated in the budget, in particular by each employee of the organization, irrespective of his level, thus providing direction and better control mechanism to the higher management of HAL, Bengaluru.

The second paper is by Ms. Princy Jose, she has compiled a comparative study on expenditure and transportation. Her main objective was to find out the revenue generated by cargo of Air India. Air cargo represents more than 35% of global trade by value hence they have to be managed by highly skilled personnel is her ideology.

The third paper is by Ms. Chaya.R, she puts her theoretical knowledge into good practical use as she studies about the implications of Herzberg's theory on employee motivation at Arvind Goodhill Suit Private Limited, Bengaluru. Her study was conducted to find out directly from the employees the factor that does not motivate them to continue employment in the organization also an attempt was made to find out the effectiveness of the motivational technique utilized to stimulate employee growth.

The fourth paper is by Ms. Shikha Patel, her paper talks about the current hiring trends in India's start-up ecosystem. Most of the start-ups today fail

because they don't allocate the appropriate funds and not hire the right talent or skilled person for right job. This study will help us understand the challenges which start-ups face while hiring.

The fifth and final paper is by Ms. Usha Karki, who in her paper talks about the current trend in marketing – Digital Marketing, which has become a very important part for any small and large company. Today, an extremely inexpensive and competent method is by using digital marketing to market their products and positioning the brand. Company can utilize 'n' numbers of platforms to reach out to its customers in a single click. It has reduces the manual work as well as paper work of the company. Digital marketing will achieve maximum if it considers consumer desires as a peak priority. Considering the ample advantages usage of digital marketing provides she conducted this study to know more about the impact of social media in marketing strategies and brand positioning in depth. The findings, suggestions and analyzed data of the research can be used to enhance the decision making of marketing managers. It can also reduce business risk because of the acquisition of relevant data and information.

I would like to conclude by stressing on the excellent work done by our students in bringing out the new trends in today's Human Resource, Marketing and Finance world and providing us with latest 21st Century insights about them.

Dr. Percy Bose

*Head, Department of MBA,
Jyoti Nivas College Autonomous*

A STUDY ON PERFORMANCE BUDGETING IN HINDUSTAN AERONAUTICS LIMITED (HAL)

~Priya.M

Abstract

The main objective of this paper was to do a study on performance budget in general and to find out the reasons for variance in budget and actual performance. Performance budgeting involves evaluation of the performance of the organization in the context of both specific, as well as, overall objectives of the organization. It presupposes a crystal clear perception of organizational objectives in general, and short-term business objectives as stipulated in the budget, in particular by each employee of the organization, irrespective of his level. It thus, provides a definite direction to each employee and also a control mechanism to higher management. Variance analysis is usually associated with explaining the difference (or variance) between actual costs and the standard costs allowed for the good output. Variance analysis helps management to understand the present costs and then to control future costs. Variance calculation should always be calculated by taking the planned or budgeted amount and subtracting the actual/forecasted value. Thus a positive number is favourable and a negative number is unfavourable.

1. INTRODUCTION

Performance budgeting has been utilized since 1949 when it was promoted by the Hoover Commission. The focus of this approach is on efficiency based on the measurement of the costs and standard process inputs. Performance budgeting (also sometimes called performance and program budgeting) focuses attention on the physical aspects of achievement. It is a new approach to budgeting with an emphasis on work done or services rendered. In this new approach, there is not only a financial plan but also work plan in terms of work done or end products produced. Thus, it gives a broader view to the budget as a plan and program of action rather than only as instrument for obtaining funds. Thus in performance budgeting classification of expenditure follows a three tier pattern. Function, program or production goals in physical and financial terms are established in accordance with this new classification and after the period the actual performance is compared.

2. LITERATURE REVIEW

- ❖ **Willoughby & Benson** - provided a historical timeline of the process considering significant budget laws and executive policies that have strongly influenced budgeting as practiced in the United States and at the federal level of government. The paper also highlights the efforts to advance program analysis, evaluation and performance measurement into the federal budget process which is found significant in securing success of budget reforms.
- ❖ **Mahmudi & Mardiasmo** - noted that performance refers to “something related to the activities of doing the job that include the outcome of the work”. On the other side, budgeting denotes to planning for various operations based on a particular estimate. A review of the literature does, however, suggest what PPBS means commonly. Most observers and experts on public budgeting do agree that, program and performance budgeting system is the allocation of funds to achieve programmatic goals and objectives as well as some indication or measurement of work, efficiency, and/or effectiveness.

- ❖ **Gannam** - clearly said that PPBS is “the proper allocation of scarce resources efficiently and effectively through planning and implementing particular programs and activities, measuring performance and establishing proper monitoring mechanism in a way that would guarantee controlling the governmental expenditures”. Program and Performance budgeting differs from traditional approaches because it focuses on spending results rather than the money spent - on what the money buys rather than the amount that is made available.
- ❖ **Fuor&Gutan** - came up into conclusion that such kind of budgeting approach will contribute to achieve results in connection with the allocated resources, and it's a good tool to link resources spent with results.
- ❖ **Husain** - assured that adopting PPBS is considered as a good step towards reforms and preservation of limited resources.

3. COMPANY PROFILE

The Hindustan Aeronautics Limited (HAL) evolved into a vertically integrated Aeronautics complex and it is the largest of its kind in Asia. **Shri.Seth Walchand Hirachand's** vision to a company for the manufacture of Aircraft for the time in India led to the establishment of M/s.Hindustan Aircraft Ltd., in association with the then **Government of Mysore**. The company was registered as a private limited company. However the manufacturing programs had to be abandoned in favour of overhaul and repairs of Aircraft to support the World War II of allied countries. During this period, the company was handed over to the U.S. Air Force. Hindustan Aeronautics Limited designs, develops, manufactures, sells, repairs, and overhauls aircraft and related systems in India. It offers helicopters and power plants; aerospace structures, tanks, and cryogenic engines; and materials, including castings, general forgings, precision forgings, powder metallurgy products, rubber products, composites, and rolled rings. The company also provides avionics, such as inertial navigation systems, auto stabilizers, head up displays, laser range systems, flight data recorders, communication equipment,

radio navigation equipment, air borne secondary radars, missile inertial navigation systems, radar computers, and ground radars; and system access.

Hindustan Aeronautics Limited (HAL) isn't concerned with interplanetary travel; it manufactures aircraft, engines, avionics, and communications equipment for military and civilian use. The government-owned company mainly makes fighter planes and helicopters for the Indian Air Force. From its 19 manufacturing plants and nine R&D centres across India, HAL has developed 12 aircraft models; with US, British, or Russian collaboration the company has 14 others under license. HAL also crafts satellite launch vehicles for the Indian Space Research Organization and exports its systems and components to 30 other countries.

4. RESEARCH METHODOLOGY

4.1. Objectives of the Study

- To assess the budgetary system in use at Engine division, HAL.
- To analyze the performance highlight of HAL Engine division.
- To identify the causes for variations in budget and actual performance.
- To suggest suitable adjustments to overcome the problems in performance budget.

4.2. Need and Importance of the Study

It ensures efficient utilization of resources by suggesting appropriate means of allocating funds to various programs. It provides a systematic and sound system of performance reporting evaluation of each program. It makes possible the introduction of management by objectives. It ensures achievement of the organization objectives by identifying and selecting only such programs which contribute maximum to these objectives. It facilitates decision making at all levels of management in the organization. It ensures smooth execution of

the budget by co-ordinating its various physical and financial aspects. It improves the quality of financial control.

4.3. Scope of the Study

The study will mainly concern with the budgeting practices of the Engine Division of HAL. All the aspects included in the budget manual and other budget records, observations made by studying work procedure as well as the opinions of the executives of 60 Finance and Accounting department has been considered for analysis. The performance indicators should be those that will be calculated and measured and used as a basis for assessing or viewing the level of performance in the planning stage, the implementation stage and post –event stage of completion and benefit. Performance indicators includes: inputs, outputs, outcomes, benefits and impacts.

4.4. Method of the Study

A case study method has been adopted to study the Performance Budgeting System of Engine Division, HAL. The Data were collected from the Finance and Accounts Department that are related to Performance Budget. The Officers of these departments were interviewed and the information was collected. An analytical study on performance budget was undertaken to ascertain the various factors affecting the performance budget.

Various methods adopted during the study are:

- Visiting various internet websites.
- Visiting our own library and company's library.
- Skimming through some reports on similar topics.
- Reviewing the various previous research abstracts.
- Going through various manuals and journals of the company

4.5. Sources of Data

- **Secondary Data:** The data is tabulated with the help of techniques like percentages and statistical tools like tables, bar charts

are used to facilitate better understanding into the study and conclusions are drawn from it.

4.6. Tools used for analysis of the Study

The techniques like variance and percentage in variance is found through actual and the budgeted values.

4.7. Limitations of the Study

- The outcome of the study is based on the information supplied by the respondents and also extensiveness of the study and time required for in depth analysis of the details.
- The study is confined (limited) to the Engine Division HAL. But for this topic I could not cover other divisions of HAL such as Corporate Office, Aircraft Division, Helicopter Division etc., due to lack of time.
- The perception of customer, suppliers and other interaction has not been taken.
- Time limitation (only concerned with engine division).

5. FINDINGS

- ❖ The performance review is done half yearly and half monthly. The budget is projected in two-years' time frame covering estimates for current year and the budgeted year (next year)
- ❖ The inter-divisional comparison is made for monitoring the performance. For the achievement of the budgeted target, there exists the reward system.
- ❖ There are four types of customers for Engine Division viz., IAF, Non-IAF, Civil Customers, and Export Customers.
- ❖ IAF is the major customer accounting for more than 50 percent of sales done by the company.
- ❖ Non-IAF customers include Army, Navy and Coast Guard.
- ❖ Civil Customers are Bharath Dynamic, BSF of Home department, GRSE and others.

- ❖ The Exports of Engine Division have increased during the year 2017-2018. Before fixing the price of any engine or any service, it needs approval from the Ministry of Defence, Government of India, as their major customers are IAF and Non-IAF.
- ❖ The various activities carried out by HAL's Engine Division are Manufacturing, repairs/overhaul spares, development, exports and miscellaneous activity.
- ❖ For Air-force and Army unique Pricing Policy known as Fixed Price Quotation (FPQ) is followed and for other customers cost plus pricing policy is followed.
- ❖ For Sales, 65 percent of advance along with task letter is sought from Air force and Army Customers and balance 35 percent is collected on delivery.
- ❖ Miscellaneous Activities include soap analysis, heat treatment, plasma coating and electronic beam building.
- ❖ The performance of sales is satisfactory in HAL's Engine Division. There has been an increasing trend in value of production and both the actual and budgeted figures were increasing from year to year.
- ❖ In the Engine division, Inventory includes Raw Materials, Goods in Trade, WIP and SIT. In the year 2017-2018(822%) there was an increase. Hence Engine Division planned to start the new project of Manufacturing of 17 & 20 Jaguar.
- ❖ The ratio of Gross Margin to sales is showing fluctuations in all the years. The actual are increasing in the years except 2015-2016 and 2016-2017.
- ❖ The Net Profit to sales has been increasing in the study period. The highest percentage of net profit to sales was achieved in the year 2017-2018 (28%), which is a good sign for the company. The Net Profit has been increasing because of increasing efficiency on the part of the employees.

- ❖ Value Added is calculated as Value of Production less material consumed. The reasons in value added changes are due to increase in efficiency of employee and decrease in number of employees.
- ❖ The Current Ratio of HAL Engine Division is showing increase in the year 2015-2016(43%) except all the years. Overall it is not showing satisfactory level.
- ❖ There is no budget centre in HAL Engine Division. Each department will prepare its own budget and submits to finance department, which co-ordinates the various budgets and prepares final budget for the (E.D).

6. RECOMMENDATIONS & SUGGESTIONS

- ❖ The present budgeting system is more of fixed type of budgetary system. It is required to be more flexible. Some of the advantages of flexible budgets observed by HAL are:
 - The budget designed can be changed according to changes in the activity levels.
 - Comparisons will be realistic and practical as they are not based on the assumptions.
 - For performance evaluation it provides a good base for making a comparison between the actual and budgeted levels.
 - It deals with multiple activity levels.
- ❖ In HAL Engine Division, review is done half yearly and half monthly, which is not suitable to HAL. As the budget preparation is based on the customer's task letters that are fluctuating in nature, it is advisable to HAL to have a flexible budget, so as to arrive at accurate budget figures. HAL Engine Division needs approval of budget from Corporate Office before processing the functioning of budget, which is time consuming. Hence, it is advisable for the Engine Division to take authority of budgeting by them.

- ❖ As there is huge increase in performance of export sales in the year 2017-2018, it is advisable to HAL, Engine Division to expand their export activities and tap the international market instead of just concentrating on domestic customers, which are limited.
- ❖ The Traditional Budget was not an effective tool for review of various budgets. To take corrective activities, HAL switched over to performance budget from 1977-78. Even now HAL follows Performance Budget. As most of the customers of HAL are IAF and partially Government, so fixation of price of product and service need approval from the Ministry of Defence and Government of India. This process is time consuming. This affects the activities of HAL and thereby causes inconsistency in actual and budgets. So it is suggested to HAL Engine Division to follow the more flexible and less time consuming process of fixation of price.
- ❖ The Corporate Office should delegate certain authority and responsibility to Engine Division for preparation of budget. Amount due from Debtors need to be recovered more effectively so that the period of Outstanding can be minimized.
- ❖ It is suggested for the company to conduct proper training programs for its employees in their related area so that their work efficiency may be increased which is for the betterment of the company. As HAL Engine Division, was little overcautious about their profits. So it is suggested that the company should fix the budget figure more realistically and thereby there is no large variance in actual and budgeted figures and the higher budgeted profit makes the employees to work more effectively and efficiently to accomplish the goal. As the world is moving towards modernization and improvement, it is advisable to HAL to invest more in Research and Development, so as to achieve improvement in product and services of HAL. This would be helpful to attract foreign customers to HAL and thereby help to expand their exports and increase the global market in this Global Era of Business.

7. CONCLUSION

Hindustan Aeronautics Limited (HAL) was set up in 1940 and it carries very important responsibilities towards the Indian Armed Force. HAL produces the major proportion of aircraft, upon which they depend to meet their commitments to national defence. Indian Armed Force (IAF) is one of the major customers of HAL with the other customers being Non IAF, Civil and Exports, for which HAL provides equal efficient and effective services.

The budget is prepared on the basis of task letter received from customer, which is fluctuating in nature. After analysing the existing budgeting system and performance highlights we can conclude that overall performance of HAL Engine Division was satisfactory. The Executives are satisfied with the present budgeting system. But in this global and modernized world, the system needs to change according to the changing conditions of business. So it is suggested to Engine Division of HAL to get involved in more of flexible budgeting system.

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A COMPARATIVE STUDY OF EXPENDITURE & TRANSPORTATION AND A STUDY ON REVENUE GENERATED BY CARGO

~Princy Jose

Abstract

Revenue generation is the essence of profitability. In order to get greater profits, revenues must be raised. There are times when revenue growth is more important than profits. A profitable business does not necessarily mean it is generating enough cash flow for the working of the organization. To cover its costs and earn a profit, the company should generate sufficient revenue and also allocate the funds in such a way that there is no leakage of funds from the business. Also, the expenditure on commutation provided for the crew members must be handled efficiently to ensure there is no leakage of funds from the business. The Indian aviation industry holds a lot of promise owing to the huge population, increased affordability and making the services accessible to the common man. But, the sector is highly susceptible to turbulence in economy. So, there must be effective managerial skilled personnel employed in the organization. Air cargo represents more than 35% of global trade by value.

1. INTRODUCTION

Air India is the flag carrier airline of India. Air India is the largest international carrier out of India with an 18.6% market share. Over 60 international destinations are served by Air India across four continents. Additionally, the carrier is the third largest domestic airline in India in terms of passengers carried (after IndiGo and Jet Airways) with a market share of 13.5% as of July 2017. The airline became the 27th member of Star Alliance on 11 July 2014.

The airline was founded by J. R. D. Tata as Tata Airlines in 1932; Tata himself flew its first single-engine de Havilland Puss Moth, carrying air mail from Karachi to Bombay's Juhu aerodrome and later continuing to Madras (currently Chennai). After World War II, it became a public limited company and was renamed as *Air India*. On 21 February 1960, it took delivery of its first Boeing 707 named *Gauri Shankar* and became the first Asian airline to induct a jet aircraft in its fleet. In 2000–01, attempts were made to privatise Air India and from 2006 onwards, it suffered losses after its merger with Indian Airlines.

Air India also operates flights to domestic and Asian destinations through its subsidiaries Alliance Air and Air India Express. Air India's mascot is *the Maharajah* (Emperor) and the logo consists of a flying swan with the wheel of Konark inside it.

2. LITERATURE REVIEW

- ❖ **Adam** - defined revenue as the fund required by the government to finance its activities. These funds are generated from different sources such as taxes, borrowing, fine, fees etc. It is also defined as the total amount of income that accrues to an organization (public or private) within a specified period of time.
- ❖ **Hamid**, states revenue comprises of receipt from taxation as well as those which are not the proceeds of taxation, but of either the realization from the sale of government properties or other interests and returns from loans and investment earning.

3. RESEARCH METHODOLOGY

3.1 Objectives of the Study

- To evaluate the expenses incurred in the commutation of the crew members.
- To examine the pattern of commutation expenses over the period.
- To determine the revenue generated by cargo in the past five financial years
- To forecast the revenue for the current financial year.
- To analyze the differences among the groups.
- To find the significant difference among revenues.

3.2. Need and Importance of the Study

- This study helps to control the expenses in the commutation of the crew members.
- This study helps to determine the level of revenue generated by cargo in the past five years in spite of the inclusion of the new taxation policy by the government into the economy.
- This study forecasts the revenue being generated during the fortnights for this financial year.
- This study gives a clear picture as to whether domestic or international cargo is generating higher revenue.

3.3. Limitations of the Study

- The data is confined to the information which the organization has provided during the study and is made from secondary data only.
- The study was carried out within the time frame of 45 days due to time constraints and hence lacks thorough analysis.
- The study is carried out only for the southern region and is not representative of the entire organization as a whole.

3.4. Actual Collection of Data

- Secondary data has been used for analysis which was collected through- Annual reports, Journals, Newspapers and the Internet.

4. ANALYSIS AND INTERPRETATION OF DATA

4.1: ANOVA

Table 4.1: ANOVA

2013-14	2014-15	2015-16	2016-17	2017-18
9052034.30	2012546.1	3412565.15	3171360.75	7598406
7123560.25	518432.00	1725244.25	1549357.85	7652326
5354199.55	658134.00	1710354.25	2507769.40	20473926
2896454.85	1159742.00	1647595.00	2464041.00	14560988
5225134.45	1192244.7	1688340.00	3886984.85	23967718
1470337.95	1674449.9	1900670.15	3482603	16669361
5478127.15	1682723.3	1733972.00	2091168.2	19448972
4298274.35	1898705.50	3160646.00	2593714.05	19436085
6622056.55	1580122.00	2355331.43	4716006	12451739
4651549.60	1250526.00	1678575.38	8592040	8311410
6076560.25	1601141.2	2242679.00	5073012.7	10825626
9392897.40	1618617.00	1378383.00	6057252.15	16783098
7724819.05	1152718.7	3265907.90	6576621	541328
5971815.10	1125123.00	1892160.55	2079858.05	3192284
4134043.90	2674392.25	2068361.60	2910358.08	2731977
4906745.56	3738164.10	1029555.00	2275902.51	3146043
2893384.35	2975366.40	2443036.06	2341828.98	2178843
3842096.60	4968762.6	1392764.10	2332499.25	975933
2528718.75	1561438.00	1672200.00	5026390	1316433
4845921.35	2391998.70	4874580.00	3269219	1433836

3804616.25	6644186.80	4078028.00	1948099	1379988
4680212.80	2880019.50	4331466.28	3127427	2285545
5808980.95	3907800.05	4312015.00	6336703	1096842
5465635.05	5104577.7	4017054.30	7803752	1344616

Table 4.2: Total sales for the 5 consecutive years

SUMMARY	-	-	-	-
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
2013-14	24	124248176	5177007.348	3.6785
2014-15	24	55971931.2	2332163.8	2.3763
2015-16	24	60011484.4	2500478.517	1.2665
2016-17	24	92213968.1	3842248.67	3.9160
2017-18	24	199803323	8325138.458	5.9257

Table 4.3: Analysis of Variance

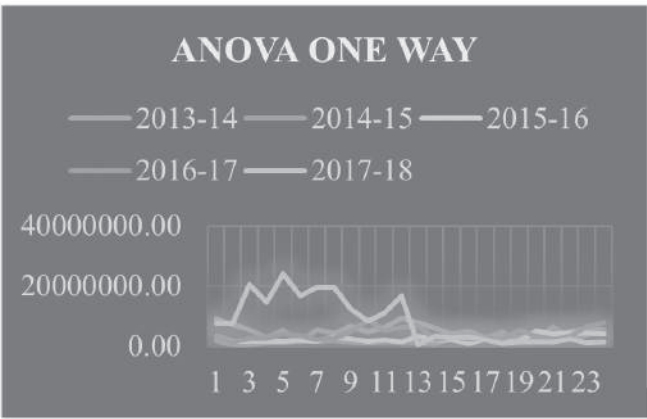
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	5.8078	4	1.45196E+14	10.2983853	3.65651E-07	2.45057052
Within Groups	1.6213	115	1.40989E+13			
Total	2.2021	119				

H₀ = Sales remains the same for all the consecutive years.

H₁ = Sales is different for all the consecutive years.

Interpretation: The above analysis indicates that the calculated value (10.29) is greater than the table value (2.45). Therefore accept H₁, which means that the sales are different for all the 5 years.

Graph 4.1: The pattern of cargo sales



The above graph indicates that, the sale was the highest in 2017-18, in the month of May 2017. During the end of the previous financial year, we can see a drastic drop in the sales.

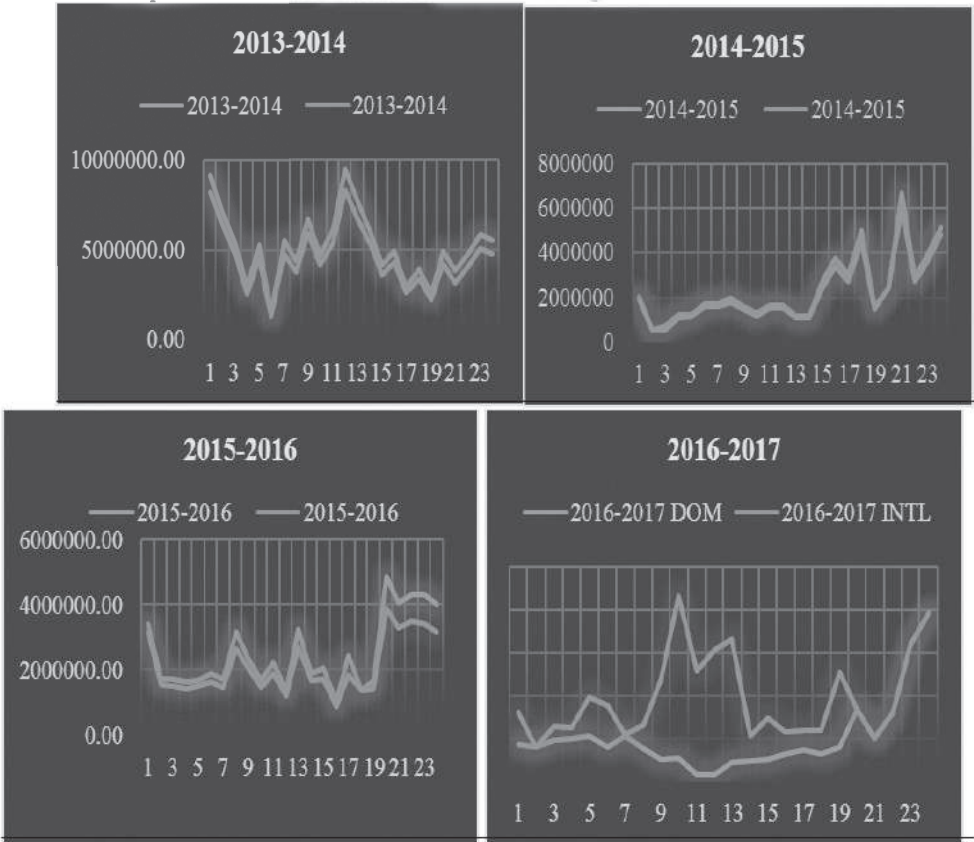
4.2: TWO TAILED T- TEST

Table 4.4: Two tailed T-test:

2013-2014		2014-2015		2015-2016		2016-2017		2017- 2018	
DOM	INTL	DOM	INTL	DOM	INTL	DOM	INTL	DOM	INTL
9052034.30	8199599.98	2012546.05	1831614.20	3412565.15	3123828.76	1628637	3171360.75	7598406	64544
7123560.25	6466490.10	518432.00	505646.85	1725244.25	1541467.75	1528907	1549357.85	7652326	95146
5354199.55	4787112.71	658134.00	608563.33	1710354.25	1491776.25	1854589	2507769.40	20473926	64955
2896454.85	2557661.30	1159742.00	1060498.33	1647595.00	1416642.20	1882519	2464041.00	14560988	62764
5225134.45	4565777.01	1192244.65	1088177.32	1688340.00	1461682.66	2061312	3886984.85	23967718	63597
1470337.95	1284327.40	1674449.85	1536536.44	1900670.15	1604484.60	1495765	3482603	16669361	58038
5478127.15	4783703.97	1682723.25	1537697.00	1733972.00	1428137.80	2036175	2091168.2	19448972	89568
4298274.35	3775190.19	1898705.50	1728776.53	3160646.00	2634642.19	1479979	2593714.05	19436085	58878
6622056.55	5901880.73	1580122.00	1454017.52	2355331.43	2017673.39	943313	4716006	12451739	49180
4651549.60	4164278.75	1250526.00	1146070.18	1678575.38	1429812.36	1029623	8592040	8311410	61837
6076560.25	5393098.60	1601141.15	1457152.18	2242679.00	1857359.00	235891	5073012.7	10825626	59472
9392897.40	8302608.50	1618617.00	1484384.61	1378383.00	1193418.00	357659	6057252.15	16783098	61242
7724819.05	6800531.21	1152718.7	1069026.74	3265907.90	2655524.36	823815	6576621	541328	526374

5971815.10	5287690.67	1125123.00	1040367.56	1892160.55	1633874.80	868207	2079858.05	3192284	364748
4134043.90	3645690.54	2674392.25	2364754.93	2068361.60	1712279.32	915654	2910358.08	2731977	411779
4906745.56	4310715.01	3738164.10	3319252.09	1029555.00	880101.36	1173607	2275902.51	3146043	335546
2893384.35	2611603.26	2975366.40	2665805.89	2443036.06	1839304.48	1369914	2341828.98	2178843	338403
3842096.60	3395413.28	4968762.57	4466643.87	1392764.10	1338705.00	1196620	2332499.25	975933	371742
2528718.75	2245108.57	1561438.00	1445945.73	1672200.00	1381974.23	1499154	5026390	1316433	552424
4845921.35	4276569.20	2391998.70	2389230.21	4874580.00	3865328.74	3269219	3269219	1433836	220323
3804616.25	3197707.12	6644186.80	5954806.40	4078028.00	3286094.07	1948099	1948099	1379988	107987
4680212.80	4094279.21	2880019.50	2648913.08	4331466.28	3491112.76	3127427.41	3127427	2285545	52111
5808980.95	5056853.00	3907800.05	3623679.56	4312015.00	3391557.99	6336703	6336703	1096842	139844
5465635.05	4769148.71	5104577.68	4746917.10	4017054.30	3140433.31	7803750.85	7803752	1344616	1948099

Graph 4.2: Domestic and International Cargo Sales from 2013-2018



4.3: TIMES SERIES ANALYSIS

Table 4.5: First Fortnight (IFN)

Regression Statistics		
Multiple R		0.385718981
R Square		0.148779132
Adjusted R Square		0.130274331
Standard Error		4713070.699
Observations		48
Coefficients		
Intercept		947511.7972
		139237.3617
RESIDUAL OUTPUT		
Observation	Predicted SALES y	Residuals
1	1086749.159	925796.8911
2	1225986.521	-567852.5206
3	1365223.882	-172979.2323
4	1504461.244	178262.006
5	1643698.606	-63576.60563
6	1782935.967	-181794.8173
7	1922173.329	-769454.629
8	2061410.691	612981.5593
9	2200648.052	774718.3477
10	2339885.414	-778447.414
11	2479122.776	4165064.024
12	2618360.137	1289439.913
13	2757597.499	654967.651
14	2896834.861	-1186480.611
15	3036072.222	-1347732.222
16	3175309.584	-1441337.584
17	3314546.946	-959215.5158
18	3453784.307	-1211105.307
19	3593021.669	-327113.7691
20	3732259.031	-1663897.431
21	3871496.392	-1428460.332
22	4010733.754	-2338533.754

23	4149971.116	-71943.11582
24	4289208.477	22806.52251
25	4428445.839	-1257085.089
26	4567683.201	-2059913.801
27	4706920.563	-819935.7125
28	4846157.924	-2754989.724
29	4985395.286	-269389.2859
30	5124632.648	-51619.94756
31	5263870.009	1312750.941
32	5403107.371	-2492749.291
33	5542344.733	-3200515.753
34	5681582.094	-655192.0943
35	5820819.456	-3872720.456
36	5960056.818	376646.1824
37	6099294.179	1499111.821
38	6238531.541	14235394.46
39	6377768.903	17589949.1
40	6517006.264	12931965.74
41	6656243.626	5795495.374
42	6795480.988	4030145.012
43	6934718.349	-6393390.349
44	7073955.711	-4341978.711
45	7213193.073	-5034350.073
46	7352430.434	-6035997.434
47	7491667.796	-6111679.796
48	7630905.158	-6534063.158

Table 4.6: Predicted sales for IFN for the next 4 years

Interpretation: The above analysis indicates the predicted sales for the next four years during the first fortnight of all the months.



Therefore the equation is: $Y = 947512 + 139237 X$

Graph 4.3: The First Fortnight predicted sales for the next 4 years

The above graph indicates that the predicted sales for the next 4 years is in uptrend and the organization is likely to get higher revenue from the sales of cargo during the first fortnight.

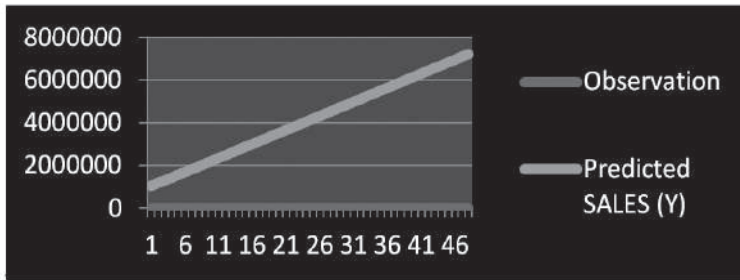
Table 4.7: Second Fortnight (IIFN)

<i>Regression Statistics</i>		
Multiple R		0.420715012
R Square		0.177001121
Adjusted R Square		0.159109841
Standard Error		4011700.229
Observations		48
<i>Coefficients</i>		
Intercept		920230.7959
		131467.6232
RESIDUAL OUTPUT		
<i>Observation</i>	<i>Predicted SALES (Y)</i>	<i>Residuals</i>
1	1051698.419	-533266.4191
2	1183166.042	-23424.04228
3	1314633.665	359816.1845
4	1446101.289	452604.2113
5	1577568.912	-327042.9119
6	1709036.535	-90419.53506
7	1840504.158	-715381.1583
8	1971971.781	1766192.319
9	2103439.405	2865323.165
10	2234907.028	157091.6722
11	2366374.651	513644.849
12	2497842.274	2606735.406
13	2629309.897	-904065.6474
14	2760777.521	-1113182.521
15	2892245.144	-991574.9938

16	3023712.767	136933.233
17	3155180.39	-1476605.01
18	3286648.013	-1908265.013
19	3418115.637	-1525955.087
20	3549583.26	-2520028.26
21	3681050.883	-2288286.783
22	3812518.506	1062061.494
23	3943986.129	387480.1506
24	4075453.753	-58399.45257
25	4206921.376	-2657563.526
26	4338388.999	-1874347.999
27	4469856.622	-987253.5122
28	4601324.245	-2007610.195
29	4732791.869	3859248.331
30	4864259.492	1192992.658
31	4995727.115	-2915869.065
32	5127194.738	-2851292.228
33	5258662.361	-2926163.111
34	5390129.985	-2120910.985
35	5521597.608	-2394170.608
36	5653065.231	2150686.769
37	5784532.854	1867793.146
38	5916000.477	8644987.523
39	6047468.1	10621892.9
40	6178935.724	13257149.28
41	6310403.347	2001006.653
42	6441870.97	10341227.03
43	6573338.593	-3381054.593
44	6704806.216	-3558763.216
45	6836273.84	-5860340.84
46	6967741.463	-5533905.463
47	7099209.086	-4813664.086
48	7230676.709	-5886060.709

Table 4.8: Predicted Sales for IIFN for the next 4 years

Interpretation: The above analysis indicates the predicted sales for the next five years during the second fortnight of all the months. Therefore the equation is: $Y = 920230.7959 + 131467.6232 X$



Graph 4.3: Second Fortnight Predicted Sales for the next 4 years

The above graph indicates that the predicted sales for the next 4 years is in uptrend and the organization is likely to get higher revenue from the sales of cargo during the second fortnight also.

5. FINDINGS

- ❖ The company's expenditure on the commutation of the crew members is very high.
- ❖ Air India receives more revenue from the domestic cargo sales, i.e. there is more of cargo being transported within the country than international.
- ❖ The company's revenue from international cargo dropped drastically in the last financial year.
- ❖ The ANOVA test proved that the company receives more sales during the first and second fortnight of every month.

6. RECOMMENDATIONS

- ❖ It is not advisable for Air India to begin their own travels as the salary, maintenance and repairs cost, and idle time of the drivers is a burden for the company.

- ❖ The airline can also look for reducing the maintenance cost by stationing officers at hubs instead of allowing them to travel at regular intervals.
- ❖ The government should reduce the restrictions and conditions put forward during the privatization of the company so that the investors come forward to buy the airline.

7. CONCLUSION

Air India has a bloated workforce, unproductive work practices and political impediments to shedding staff which made the creation of a viable business model extremely challenging. The situation calls for a depth of leadership across the organization which still does not exist. There appears to be no clear business plan to revive the carrier and affecting a turnaround now appears to be a herculean task. Also, with the government taking up the carrier and not selling it to the private businessmen, the airline is expected to progress in the near future.

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A STUDY ON IMPLICATION OF HERZBERG THEORY ON EMPLOYEE MOTIVATION AT ARVIND GOODHILL SUIT PRIVATE LIMITED, BENGALURU .

~Chaya.R

Abstract

Employee motivation has been a major concern of organizations and human resource managers for many years; it has been a key indicator of a successful and productive employee. A Motivated employee generally is more quality oriented. According to the Two Factor Theory of Frederick Herzberg people are influenced by two factors. Satisfaction and Psychological growth was a factor of motivation factors. Dissatisfaction was a result of hygiene factors. Thus, this study is conducted to find out directly from the employees the factor that does not motivate them to continue employment with their organization. With help of a self-developed questionnaire few factors are taken into consideration for the study with the help of the study, an attempt is made to find out the effectiveness of the motivational technique utilized to stimulate employee growth.

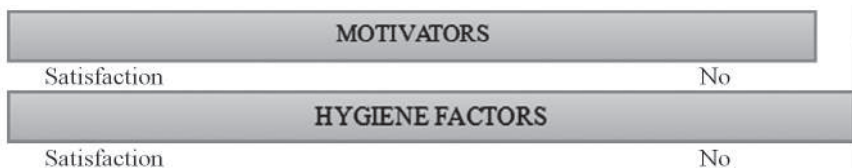
1. INTRODUCTION

❖ Concept of Motivation

Motivation is an important element in understanding, studying and analysing human behaviour. It helps of an executive or a manager to identify the motives which influence the behaviour of employee at work to attain organizational objectives. Motivation is a personal and internal feeling. The feeling arises from needs wants. Human needs are unlimited. Fulfilment of one set of needs give rise to the other needs. Therefore, motivation is a continuous process.

❖ Herzberg Hygiene Factors and Motivators Theory

In 1959, Frederick Herzberg, a behavioural scientist proposed a two factory theory or the motivator-hygiene theory. According to Herzberg, there are some job factors that result in satisfaction while there are other job factors that prevent dissatisfaction. According to Herzberg, the opposite of “satisfaction” is “no satisfaction” and the opposite of “dissatisfaction” is “no dissatisfaction”.



Herzberg theory of two factors

❖ Meaning of Herzberg's Two Factor Theory

“The two -factor theory also known as Herzberg’s motivation-hygiene theory and dual-factor theory states that there are certain factors in the workplace that cause job satisfaction , while a separate set of factors causes dissatisfaction.”

Herzberg classified these job factors into two categories-

- A. Hygiene factors.
- B. Motivational factors.

A. Hygiene Factors

“Hygiene factors are the factors that characterize the context or environment of a person’s work. They can be a cause of job dissatisfaction unless appropriately applied by an organization.”

Hygiene factors are those job factors which are essential for existence of motivation at workplace. These do not lead to positive satisfaction for long term. But if these factors are absent if these factors are non-existent at workplace, then they lead to dissatisfaction. These factors are also called as dis-satisfier and maintenance factors as they are required to avoid dissatisfaction.

B. Motivational Factors

According to Herzberg, the hygiene factors cannot be regarded as motivators. The motivational factors yield positive satisfaction. These factors are inherent to work. These factors motivate the employees for a superior performance. These factors are called satisfier. These are factors involved in performing the job.

2. LITERATURE REVIEW

- **Ederer and Manso’s** study titled “**Is Pay for Performance Detrimental to Innovation?**” concluded the following: The optimal incentive scheme that motivates exploration is fundamentally different from standard pay - for - performance schemes used to motivate effort. Tolerance for early failure, reward for long- term success, excessive continuation, commitment to a long - term incentive plan, and timely feedback on performance are all important to motivate exploration.(p.32).
- According to **Lockley** offering training and development programs that effectively contributes to personal and professional growth of individuals is another effective employee motivation strategy.

- **Llopis** draws attention to the increasing relevance of the work – life balance problem for modern employees and stresses in negative impact on the level of employee motivation.
- **Vuori** and **Okkonen** stated that motivation helps to share knowledge through an intra–organisational social media platform which can help the organisation to reach its goals and objectives.

3. RESEARCH METHODOLOGY

3.1. Background of the Study

Employee motivation is the level of energy, commitment, and creativity that a company's workers apply to their jobs. In the increasingly competitive business environment of recent years, finding ways to motivate employees has become a pressing concern for many managers. In fact, a number of different theories and methods of employee motivation have emerged, ranging from monetary incentives to increased involvement and empowerment.

Employees' motivation is "The heart of giving the people what they really want most from work" (Dell, 1988). Herzberg (1959) based on Maslow's' pyramid supports that money tends to have a motivating effect on employees that lasts only a short period of time (two-factor model of motivation). Maslow (1943) sets money at the lowest hierarchy level and shows that other needs work as better motivators to staff.

Two purposes framed for this study:

1. To gain an in-depth understanding of the ways that employee's motivation can be accomplished.
2. To examine those ways and methods that companies and managers use to increase their employees motivation and by that their performance.

3.2. Statement of the Problem

The relationship between motivation and performance is a universal concern and is often talked about but many organizations do not make concrete efforts to study it in detail. These organizations blindly apply the popular motivational theories without findings and investigators which would be the result of an intensive study on motivation. In today's hyper-competitive marketplace, understanding what fosters and forwards employee motivation and thus organizational performance is critical. This study was to determine what types of incentives and motivational factors can effectively promote innovation and increase employee motivation in the company, as well as to provide recommendations to management on what to implement, eliminate, or change, based on our findings.

3.3. Importance of the Study

- This study was completed using the input of full-time and part-time employees of the company in all different departments.
- These employees were surveyed for the purpose of discovering what is most motivating to them in the workplace.
- Employee motivation is defined as the eagerness or drive in an employee that directly influences their level of involvement or performance in the workplace.
- Motivating factors and incentives are reasons for employee motivation, and in order to best evaluate and describe which of these factors are most and least critical to employees, we have split this study up into the following criteria: communication, income, long-term incentives, and non -financial incentives.

3.4. Limitations of the Study

- An in depth study could not be conducted because of the limited period.

- Accuracy of the report is completely dependent on the employee's respondents.
- The change of biased responses cannot be eliminated through all steps were taken to avoid the same.

3.5 Objectives of the Study

- To determine the factors that increase Employees motivation in Arvind Goodhill Suit Manufacturing Private Limited.
- To analyse and examine the level of employee motivation among employees in Arvind Goodhill Suit Manufacturing Private Limited.
- To know the effectiveness of the motivational technique utilized to stimulate employee growth in Arvind Goodhill Suit Manufacturing Private Limited.
- To render effective recommendations to implementation of Herzberg motivational techniques.

3.6. Hypothesis

Hypothesis test was done on two questions in related with objectives.

- Chi-square test is used for the calculations.
- Using chi-square test 2 hypotheses were framed.

3.6.1 Null hypothesis:

Null hypothesis is rejected for the both questions because there is significant relationship between both.

- H1: There is significant relationship between the employee motivation and satisfaction of the job in the organization.
- H2: There is significant relationship between employee motivation and opportunities of career advancement in the organization.

3.7. Type of Research

Descriptive Research - The research method selected for this project is descriptive study. This study is a fact finding investigation with adequate interpretation. It is more specific as it focuses on particular aspect or dimensions of the problem study. It is designed to gather descriptive information for formulation more sophisticated studies.

3.8 Sampling Technique

3.8.1. Simple Random Sampling –

A randomly selected sample from a larger sample or population, giving all the individuals in the sample an equal chance to be chosen. In the simple random sample, individuals are chosen at random and not more than once to prevent a bias that would negatively affect the validity of the result of the experiment.

3.9. Sample Size and Sample Description

- **Population size:** The population size is 100.
- **Sample size:** The sample size of the study is 50 respondents.
- **Sampling frame:** The respondents are the employees of Arvind Goodhill suits manufacturing Private Limited.

3.10. Research Instrument

For the collection of data different types of instrument are used by the researchers. Among them questionnaire is one of the most effective instrument for collection of data. In this study, researcher has used the structured questionnaire as an instrument for collection.

3.11. Actual Collection of Data

There are two types of data collection:

- Primary data.
- Secondary data.

In this study both primary and secondary data are used, but most of the actual information is collected through primary sources.

- **Primary data:** Primary data is the actual data and first hand data which is collected by the researcher. The research is done through help of questionnaires and personal interviews.
- **Secondary data:** The data is obtained through the company website, company HR policy, annual records and reports, from magazines and journals related to the research topic.

3.12. Tools Used for Statistical Analysis

• Simple Percentage Method

Simple percentage method is used for comparing certain feature. The collected data represented in the form of tables and graphs in order to give effective visualization of comparison made

$$\text{Simple percentage} = \frac{\text{Actual responses}}{\text{Number of respondent}} \times 100$$

• Chi-Square Test

Chi-Square Test is used in this study. It is a statistical test commonly used to compare observed data with data we would expect to obtain according to a specific hypothesis.

4. FINDINGS

- Majority of the respondents are satisfied with job and feels that their job allows them to learn new skills for career development.
- Almost half of the respondents feel their job is a challenging and exciting and receive adequate recognition for doing their job well.
- Less than half of the respondents agreed that there is chance of working alone on the job at Arvind Goodhill Suit Manufacturing Private Limited.
- Almost 60%-70% of the respondents agreed that there is good relationship between colleagues and supervisors.

- Majority of the respondents believe that work security is safe at their work place.
- The respondents encouraged working harder because of the salary but the demotivating factor is low salary in Arvind Goodhill Suit Manufacturing Private Limited.
- Less than half of the respondents agree with incentives provided by the Arvind Goodhill Suit Manufacturing Private Limited.
- In overall we can see there is a good motivational support from the top management and supportive working conditions for development of employee's career.
- Majority of the respondents agree that company places great emphasis on creativity and innovation at Arvind Goodhill Suit Manufacturing Private Limited

5. RECOMMENDATIONS

- The company should create good working environment for the employees so that they feel sense of belonging to the organization.
- The company should provide career development opportunities to the employees.
- The company should advance the style of working. The monotonous powers work leads to inefficiency. They should make an attempt to make employees job more excited and challenging.
- The company should start skill development centres inside the organization so that the employees can enhance their knowledge with skills and experience.
- The company should recognize employee's performance and provide them good salary perks, incentives, fringe benefits etc. so that employees are motivated to work even better.
- The company should provide job security for the employees, if they are effective and efficient in doing the work and contribute to company by accomplishing the objectives.

6. CONCLUSION

Research topic chosen for my study is “A study on Implication of Herzberg Theory on Employee Motivation at Arvind Goodhill Suit Manufacturing Private Limited, Bangalore”. In the organisation an employee motivation can lead to higher staff retention, better productivity, more creativity and profits for the company.

The various employee motivation factors that motivate the employees in the organization are job security, career development and salary. The Herzberg Motivational techniques that are implemented in the organization are recognition, achievement, work itself and growth.

Managers need to provide growth opportunity and challenging jobs in order to better motivate today's workers. Without these challenges and opportunities for growth, employees may not see a need to perform highly at work. Have seen that recognition plays a major role in employee motivation and that it is a very effective motivator. Employees want and need to feel that their contributions make a difference and recognition is one way to satisfy those wants or needs. In conclusion, when it comes to bringing out the best performance of employees, growth opportunities and challenges, recognition and non-cash rewards are more effective motivators than money.

Researcher concluded that “Employee Motivation” at Arvind Goodhill Suit Manufacturing Private Limited is good, provided with recognition and career development opportunities for all employees, it could be better.

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A STUDY ON HIRING TRENDS IN INDIA'S START-UP ECOSYSTEM AT ICS CONSULTANCY SERVICE

~Shikha Patel

Abstract

In the world innovation in Manufacturing and service sector is fueling the growing start-up culture and new ideas, with the ease of funding and less risk in personal debt people are more concentrated towards start-up. Today India is one the pioneer into start-up in India but very few start-ups are able to survive into the market this is the sad face of it. Most of the start-ups get failed because they don't allocate the fund appropriate and not hire the right talent or skilled person for right job. Hiring looks very easy task but right person for right job can do wonders into the start-up rather than hiring a person who is misfit for the role. This study will help to understand the challenges which start-ups are face while hiring

1. INTRODUCTION

Hiring refers to the overall process of attracting, short listing, selecting and appointing suitable candidates for jobs (either permanent or temporary) within an organization. A start-ups ecosystems are generally defined by the network of interactions among people, organizations and their environment, they can come in many types but are usually better known as start-ups ecosystems of specific cities or online communities (although some may say that due to

social networks, the entire globe is just one big network of start-ups ecosystems) and resources like skills, time and money are also essential components of an start-up ecosystem.

This study is conducted to understand the current hiring trend in the start-ups ecosystem precisely in Bangalore. This study includes the analysis of the hiring trend in start-up and their source channel, dependencies and more focused challenges which they face in the current market situation for start-ups. This study will based on the sample of fifty start-ups in Bangalore. The information gathered for the study was by interviews conducted directly, LinkedIn and through questionnaire. This aided in understanding hiring trends in start-ups. This study is based on the organization which is mainly into information technology (IT)

The organization approached clients like Odessa technologies, nine leaps and many other firms. For any company their employees are the key resource and this study helps to understand the start-up more and what methods they prefer for hiring the candidates. It becomes difficult for start-ups to find the right person with required skill set for the position and it will helps start-ups to understand and the barriers faced by them while in hiring process.

Consultancy

A consultant is usually an expert or an experienced professional in a specific field and has a wide knowledge of the subject matter.

HR Consultancy

The human resource consulting industry has emerged from management consulting and addresses human resource management tasks and decisions. HR Consultants can fill two typical roles:

- (1) Expert Resource Consultant
- (2) Process/People consultant.

❖ About ICS Consultancy

ICS Consultancy started in the year 2000 when a team of professionals with varied experiences related to the service industry joined together & started a recruitment & training firm called Impact Consultants from a small office in the outskirts of Bangalore. They along with their training arm provided career opportunities IT and soft skills training to the booming BPO & Call Centre industry. By 2003 ICS Consultancy Services and started catering to many leading Indian & MNC companies who were setting up their Development centres & Service Delivery Centres in Bangalore & across India. The transformation from a training & deployment company to a pure play Recruitment firm with strong client base was the effort of a focused team which was determined to make a mark in the industry.

2. LITERATURE REVIEW

- ❖ **Mr. Aditya Kovvali, Madhav Mahajan and Chaitanya Joon, International Journal of Current Research, Volume 10, Issue 02, 2018.** - According to the work done by Mr. Aditya Kovvali, Madhav Mahajan and chaitan yajoon, In a rapidly changing world since long there has been a need in the global economy for speed, innovation and low costs in all business In a rapidly changing world since long there has been a need in the global economy for speed, innovation and low costs in all business functions. This is especially true for the banking industry which is the back bone of any successful country. In the start reduce costs there has been rapid strides in innovative ways to reduce the costs for different business functions. This has led to the development of Speed test the cognitive ability of prospective candidates after which suitable candidates are chosen. This paper studies speed hiring by using pre hiring works best for small firms and the tool for evaluation should take into consideration more elements as well as use some of the modern trends in hiring to ensure a more comprehensive

view of the employee, leading to a better hiring choice. This could be by the company, in turn aiding the banking industry to grow through well deployed human the banking industry.

- ❖ **Vinita Sinha, Journal of Contemporary Management Issues, Volume 18. No. 2, 2013.** - According to the work done by Vinita Sinha, Human capital is arguably the most treasured and valued asset of any organization, and is primarily responsible for adding value to all other assets of an organization. The very word recruitment is a logistics nightmare for the HR of many organizations. It has been seen, in this rapid changing world, that various sourcing recruitment channels, such as social media (LinkedIn, Face book, etc.) have been developed and used, in addition to the traditional ones (advertisements, employee referrals, recruitment agencies, etc). In this paper, an attempt has been made to identify the changing trends related to effective hiring sources and to study their impact on the leading global organizations. It is concluded that a shift is being made towards the modern and innovative sourcing channels due to various factors like quality, cost, availability, time, etc.

3. RESERCH METHODOLOGY

3.1. Statement of the Problem

To understand the hiring trend of start-ups and the challenges faced by them while hiring process why they are not able to perform well and are there any link between the hiring and business performance and suggesting the remedial measures to improve the hiring process.

3.2. Importance of the Study

- To understand the hiring trend in today's start-ups.
- Determine the present requirements.
- To understand the challenges faced by start-ups in hiring.
- To understand their recruitment process.

3.3. Need of the Study

- This study helps to understand the prospective entrepreneurs in strategic hiring process in their start-up.
- This study helps the current start-ups to understand their barrier into hiring process and they can take corrective action.

3.4. Objectives of the Study

A research objective is a clear, concise, declarative statement, which provides direction to investigate the variables. Below are the objectives of this project which is set by the researcher to analyse the start-ups hiring procedures, it represents the challenges which is faced by start-ups while hiring the right candidate for the right job and provide some suggestions in their hiring procedures which will help them in future hiring.

The objectives of this study are:-

- Analyse the hiring trend in Indian start-ups.
- Analyse challenges faced by the start-ups.
- Analyse 50 leading start-ups in Bangalore.
- To give suitable recommendation in hiring process.

3.5. Collection of Data

- **Primary data:** In this research the primary data was collected through close ended questionnaire and interview where the respondents the despondent would be given sufficient time to think and answer a number of questions relating to the objective of the study.
- **Secondary data:** In this research the secondary data is collected from the company's website, textbook, theoretical information from IT recruiters and the internet.

3.6. Type of Research

In this study the descriptive approach has been used and accurate information is gathered and the main objective of the research is to identify the various characteristics and essential facts of the problem start-ups face are under this study. After analysing the data the researcher attempts to predict the results of action. It provides basic for decision making for new start-ups.

3.7. Sampling Technique

The researcher has used Simple random sampling. A simple random sample is a subset of a statistical population in which each member of the subset has an equal probability of being chosen. In this study the researcher has taken 50 samples of start-ups and the sample has taken random.

3.8. Sample Size & Sample Description

- The Sample size is 50 for this study to understand the hiring trends in India's start-ups ecosystem.
- Sample Description The data has been collected from Human resource executives and the employees who have handled the recruitment in the organization typically the start-ups. These are the right people to answer the questionnaire and give an unbiased answer.

3.9. Limitations of the Study

- Time and cost restrictions led to use non probability sampling method.
- The study was limited to Bangalore because of the restricted time of the project.
- The duration of the study was limited and hence elaborate and comprehensive project survey was not undertaken.
- Because of small period of time, only small sample had to be consider which does not reflect the accurate picture.

4. FINDINGS

- Generally the Start-ups in India prefer new fresh talent as compare to experienced candidate because they have broad thinking and they can shape them according to their need.
- Companies prefer walk-in so that they can recruit in bulk and chance of closing the position at earliest will be more. Most walking happens due to posting of job on LinkedIn.
- Most of the organizations prefer three rounds of interviews with written exam.
- Personal interview is the most preferred way of interviewing candidate among the organizations because though personal interview the interviewer can get more insight information about the candidate.
- Organizations HR generally take interview for 30 or more minutes to understand more briefly about the candidates.
- Many candidates back out because they didn't join the company after getting selected because of very less chance of expansion, growth and survival of the start-up.
- Organizations believe and prefer to hire more productive and innovative candidates because of them the performance of the organization is also get improved.
- Most of the organizations prefer Decentralized form of recruitment where selection decision is made by discussing through executive and management.
- Most of the organization don't follow and provide the employment contract in their organization while joining.
- Most of the organization follows internal referral policy in their organization for lower cost.

5. SUGGESTIONS

- Start-ups should look for different skills as well as the ideas of the candidate at the time of recruitment it will help them into process which leads to growth.
- Start-ups should spend more on their marketing and communication so that prospects should know about their products.
- In Start-ups referral scheme should be more increased so that it will reduce the chance of employee's turnover due to poor confidence and pressure.
- During the selection process both experienced and fresher's should be given the chance to prove them self for the specific role.
- Start-ups should go for campus recruitments job fairs may attract more skilled and talented employees towards the organization.
- Take feedback from candidates as well as from existing employees for better work culture and environment in the organization.
- Ensure candidates in start-ups they will get more chance of personal growth and development.
- Job responsibilities have to be clearly explained and ensure the candidate attitude is positive towards the job before the joining the organization.
- Selection process should be less time consuming and more innovative.
- Recruitment procedure should be fair and impartial.

6. CONCLUSION

In today's scenario there is a huge potential for the growth of start-ups because majority of people are preferring to becoming an entrepreneur but for any successful start-ups the key resource is their employees and hiring the right candidate for the right job is must . According to the researcher in start-ups the candidates mostly hired are fresher and they prefer face to face form of interview which helps to understand the candidate's attitude towards start-up and his reliability. The candidates hired on the basis on their Intellectual intelligence. Start-ups mostly prefer walk-in interview which help the start-ups for quickly closing the position. But majority of candidates are not interested in the joining or starting their carrier in start-ups and candidates back out because the lack of the popularity and sustainability of the business. One more main reason for back out of the candidate is lack of funds due to which they are not able to provide high compensation to the candidates which lead to back off of candidate the start-ups should spend on their visibility and they should adopt fair and less time consuming process of interview and ensure candidates for personal growth.

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IMPACT OF DIGITAL MARKETING IN MARKETING STRATEGIES AND BRAND POSITIONING” CONDUCTED AT SYGINA DATA SYSTEMS PRIVATE LIMITED, BANGALORE

~Usha Karki

Abstract

Digital marketing has become a very important part for any small and large company. Today, an extremely inexpensive and competent method is by using digital marketing to market their products and positioning the brand. Company can utilize ‘n’ numbers of platforms to reach out to its customers in a single click. It has reduces the manual work as well as paper work of the company. Digital marketing will achieve maximum if it considers consumer desires as a peak priority. The research has been conducted in a company called Sygina Data Systems Private Limited, which is a leading company providing enhanced technology which is accessible for small-scale veterinary practices across the globe. The research has been conducted to know more about the impact of social media in marketing strategies and brand positioning in depth. The questionnaire survey has been conducted on the 30 employees of an organization to know their opinion on the digital marketing. The data collected has been analysed thoroughly and conclusions have been made on the same. Market research offers numerous ways to

improve the efficiency and effectiveness of the company. The analysed data will be used to enhance the decision making of marketing managers. It can reduce business risk through the acquisition of relevant data and information.

1. INTRODUCTION

1.1. What is marketing?

Marketing is the study and management of exchange relationships. Marketing is used to create, keep and satisfy the customer. It is an activity, set of institutions, and processes for creating, communicating, delivering, and exchanging, offering that have value for customers, clients, partners, and society at large. It includes advertising, selling and delivering products to people. Through marketing we try to get the attention of target audiences by using slogans, packaging design, celebrity endorsements and general media exposure etc. In a simple term it is about satisfying needs and wants through an exchange process.

1.2. TYPES OF MARKETING:

1.2.1. Traditional marketing

Traditional marketing refers to any type of promotion, advertising or campaign that has been in use by companies for years, and that has a proven success rate. The most commonly used traditional marketing channels include newspapers prints ads, billboards, flyers, newsletters, commercial spots, trade shows/conventions, radio spots, and direct mailings.

1.2.2. Digital Marketing

Digital marketing encompasses all marketing efforts that use an electronic device or the internet. Businesses leverage digital channels such as search engines, social media, email, and their websites to connect with current and prospective customers. With how accessible the internet is today. The number of people who go online is

increasing day by day. It is. In fact, “constant” internet usage among adults increased by 5% in just the last three years, according to Pew Research. And although we say it a lot, the way people shop and buy really has changed along with it -- meaning offline marketing isn’t as effective as it used to be. Marketing has always been about connecting with the audience in the right place and at the right time. Today, that means you need to meet them where they are already spending time: on the internet.

2. LITERATURE REVIEW

With a view to authenticate the study, various literatures have been reviewed to identify the research gaps:

- ❖ **Sigala and Dimosthenis, 2009; Chen et al., 2011** - the use of these online communication platforms based on the usage of the Internet and mobile-based technologies in marketing actions by businesses is critical in two aspects. The first is the effect that consumers have on their products and brands and the second is the share they create on other consumers
- ❖ **Lu and Hsiao, 2010, Hajli, 2013** - research has shown that social media influences the intention of trust and purchasing and facilitates sharing of knowledge and experience among consumers
- ❖ **Mersey et al., 2010** - many businesses use online interactions among their users by encouraging their customers to share their purchases, with simple clicks using their chosen social media channel. Second, social media is utilized by businesses as a platform through in which direct marketing actions are carried out. In this sense, social media is pushing the boundaries of time and space in the interactions of businesses with potential consumers and promoting the feeling of closeness
- ❖ **Shankar et al. 2011** - social media has advanced from simply providing a platform for individuals to stay in touch with their family and friends. Now it is a place where consumers can

learn more about their favourite companies and the products they sell. Marketers and retailers are utilizing these sites as another way to reach consumers and provide a new way to shop. “Technology related developments such as the rise of powerful search engines, advanced mobile devices and interfaces, peer-to-peer communication vehicles, and online social networks have extended marketers’ ability to reach shoppers through new touch points”

- **Munshi, 2012** - today advertising and marketing techniques have given way to digital marketing. In addition, it is so powerful that it can help to revive the economy and can create tremendous opportunities for governments to function in a more efficient manner”.

After reviewing the above literatures, it is analysed that researchers are trying to communicate that the concept of digital marketing or social media marketing has given a far greater exposure to the business and as well as customers to explore the market in a better and best way than traditional marketing. Our world is developing; companies are realizing the importance of digital marketing to become successful in the market. Customers have got a powerful platform to share their views about the experience of after purchase which is resulting into innovations and product development. A digital view can change a whole perspective of customers towards the product. Customers feel more comfortable, reliable, connected, through digital marketing. Business can reach to any customers sitting anywhere in the world with a single click.

3. RESEARCH METHODOLOGY

3.1. Objectives of the research

- To know how effective is digital marketing on Return on Investment (ROI).
- To know how effective is digital marketing in creating greater brand awareness.

- To know whether digital marketing has increased market share of the product or not.
- To understand the current consumers need, their tastes and preferences.
- To learn how convenient has marketing become through digital marketing.
- To understand why the pool of the customers have grown after using social media platform for marketing.
- To understand the different marketing strategies to retain the customers.
- To know whether traditional marketing is still required even though the company is using social media marketing.
- To know how important it is to be updated about the latest trends in the market.
- To know whether through digital marketing companies are able to target all customers of different age groups.
- To know if social media can also work against the brand image as there would be some customers who are not that happy with the product.

3.2. Need for the study

- To have a depth knowledge about how marketing strategies and brand positioning happens through digital marketing.
- To know how effective is digital marketing than traditional marketing for marketing strategies.
- To understand the impact of social media marketing on the businesses and as well as on customers.
- To understand how instead of product centred make and sell philosophy, the market has changed to consumer centred respond strategy.

- To find out the gap between the shift from traditional marketing to digital marketing.
- To contribute new knowledge/findings in the existing knowledge.
- To gain the knowledge about Social Media Marketing, and how it is done.
- To find out whether traditional marketing will have any existence in near future or it is going to over ruled by digital marketing completely.
- To find out whether digital marketing is fully successful to position the brand in the market, and has the marketing strategies of company are being accomplished through it, because today markets are complex and fragmented where customers differ in terms of characteristics like – income, age group, likes-dislikes etc.
- To find out why businesses have inclined towards social media marketing.

3.3. Limitations of the study

- Analysis of the data collected is done on the assumption that the information provided by the respondent is true.
- Time given for the research is limited.
- Since sample is small compared to the total population, the outcomes cannot be generated without sampling error.
- The employees are taken as sample which cannot predict consumer behaviour.
- Since the consumer taste and preferences keep on changing, the information provided by the employees cannot be exact.
- The findings cannot fully reduce the business risks.
- The data is collected from only one company which can-not represent the whole market.

- The findings cannot replace decision making, it can only aids in decision making.
- It can provide suggestions and not solutions.
- Lack of marketing knowledge can affect the quality of information

3.4. Actual collection of data

- **Primary data:** Primary data collection forms the first hand information got from respondent itself and the information is collected through series of questions. Primary data has been collected to know the opinion of the employees of Sygina data system private limited on the effect of digital marketing on marketing strategies and brand positioning. 20 questions have been prepared to study it and it is conducted on 30 employees of the company. The researcher has taken Questionnaires as a research instrument. The sampling technique used in this study is – Deliberate Sampling Technique. The type of research is used in the study is – Descriptive research, under that “survey method” has been used.
- **Secondary data:** Secondary data is collected through other medium like the website of the company, customer’s feedback, old records, for the purpose of this study.

4. FINDINGS AND SUGGESTIONS

4.1 Findings

In a digital marketplace where things change with the blink of an eye, it is very evident from the study that a business needs to change itself according to the market.

The researcher found that the digital marketing is much more effective than traditional marketing in creating awareness, engaging huge number of audience, positioning the brand, creating brand identity etc.

- Through this research it is found that marketing strategy through digital marketing is relatively efficient and it reduces money spent on advisements and promotion i.e. it is cost effective.
- The company is trying to reach out to its customers, sitting at any part of the world by using every platform of social media like LinkedIn, Facebook, Twitter, Instagram, Pinterest.
- The company using Social networking Sites for advertisements and promotion have a competitive advantage over other traditional methods of marketing as the Social Networking Sites help them to capture large customers.
- It is found in the research that digital marketing can also work against for the company as it is a platform where customers can openly talk and give feedback about their experiences about the product. Therefore any negative feedback read by the competitors of the brand gives them a chance to attract those unsatisfied customers towards themselves and can reduce the market share of the company.
- Using digital marketing has become the need for the companies to sustain in the market.
- From the analysis it is found that re-positioning the brand is easier with digital marketing strategies. Because changing the identity of the brand in the minds of consumers through traditional marketing will consume a lot of time also its impact cannot be measured quickly.
- From the research it is found that through social media marketing the market share of the company has got increased.
- The researcher found that traditional marketing is not at all effective as compared to digital marketing for the company because most of the customers of the company are based in UK, US, Australia, UAE and reaching out to them through traditional mode is difficult and costly.

4.2 Suggestions

- Offline advertising should be used to complement the online media. Adding “visit us on Facebook” and other such texts to promotional material will help to raise awareness.
- The number of customers is increasing day by day to handle their quarries there should be enough number of people in the organization. After interviewing the employees the researcher found that the work load is more in support and development department whereas the number of employees is limited.
- There are “n” numbers of features in the product, some of them are not at all used by the customers. Awareness should be generated among customers by providing them training or descriptive guidelines for every feat
- The company does not have a great market in India as compared to they have in other countries. But with effective and strong strategies the company can create a huge market in India also.

5. CONCLUSION

- Digital marketing creates a real connection between companies and customers; that connection creates a trend for purchase online and it provides a platform to innovative advertising to be effectively used for business growth.
- Marketers should not forget that just because digital marketing uses different communications techniques to traditional marketing, its main and end objective is no different from the objective that marketing has always had.
- Though the objectives of digital and traditional marketing are same, the methods used in traditional marketing and its limitations are no longer suited to consumer needs.

- Digital marketing definitely helps a company to increase its revenue. Because the social media marketing is very cost effective, a company can reach out to the huge number of audiences within a limited budget.
- Digital marketing has become a very important part for any small and large company. Today, an extremely inexpensive and competent method is by using digital marketing to market their products and positioning the brand. It has no limitations. Company can utilize ‘n’ numbers of platforms to reach out to its customers in a single click. It has reduces the manual work as well as paper work of the company. Digital marketing will achieve maximum if it considers consumer desires as a peak priority.

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SECTION III M.COM (FA)

Foreword

“Much success can be attributed to inactivity. Most investors cannot resist the temptation to constantly buy and sell.”

– Warren Buffett

This journal aims to encourage students towards deeper, independent study, and intensive analytical thinking whilst attempting to gear the students to develop practical skills that can be harnessed at higher levels of academia.

The third section of **DHII** comprises of 4 papers in the field of banking and the stock market. The first paper evaluated the customer's satisfaction towards the banking services rendered by SBI mutual funds. The study focused on various factors that determine customer satisfaction such as employee behavior, banking services, banking performance, infrastructure facility and other value added services. Tools such as percentage analysis were used in establishing a relationship between the satisfactory levels of customers and the bank. The paper indicates a significant relationship between the variables of customer satisfaction and banking.

The second paper of **DHII** focused on the performance evaluation of mutual funds of ShareKhan Pvt. Ltd. The study revolved around data collected for 4 years, July 2014-2018. Tools such as Beta, Standard Deviation, Sharpe's measure, Treynor's measure and Jensen's measure were used to analyze the risk and return of the various mutual funds. This analysis facilitate sound investment decisions and informs mutual fund investors on buy, sell and holding decisions.

The third paper of **DHII** forecasted the performance of selected equity stocks in banking and FMCG sectors. The paper identifies two popular investment sectors, and selected 10 stocks on which various forecasts and predications were made. The intention of the project is to aid investors in making educated assumptions on future trends of these sectors. Through the use of different statistical tools like moving averages, exponential smoothing, time series analysis, and multiple regressions; pricing values and associated deviations

were predicted. The study propounds that stock forecasting models are useful to individual investors and retirees looking for wealth creation, and stable future economic growth.

The fourth paper of **DHII** seeks to understand the non-performance of assets with special reference to Sreenidhi Souharda Sahakari Bank Niyamitha. The study understands the challenges in managing non-performing assets and attempts to examine the position and growth of NPAs in Banks for a period of 5 years. The study considers the various NPAs such as substandard assets, doubtful assets, loss assets, gross NPA, provision for NPA, net NPA, and movements in NPA. The analysis was conducted on the bank as a whole and included the numerous branches they hold. It was observed that all banks regardless of management practices face the risk of NPA.

Dr. Jahnavi M

*Head, Department of M.Com (FA),
Jyoti Nivas College Autonomous*

A STUDY ON “CUSTOMER SATISFACTION TOWARDS SBI MUTUAL FUNDS”

~Priyanka.K

Abstract

The purpose of this research article is to evaluate the customers' satisfaction towards the banking services rendered by the SBI mutual fund and thoroughly scrutinized how it caters to the mutual funds. The study also focused on various factors that determine the customers' satisfaction like employees' behaviour, banking services, banking performance, infra- structure facility and other value added services. Analysis was made by using various tools like percentage analysis. The result showed that there was a significant relationship between the variable of customer satisfaction and banking.

1. INTRODUCTION

Mutual fund is a trust that pools the savings of a number of investors who share a common financial goal. This pool of money is invested in accordance with a stated objective. The joint ownership of the fund is thus “Mutual”, i.e. the fund belongs to all investors. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual Fund is the most suitable investment for the

common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost. A Mutual Fund is an investment tool that allows small investors access to a well- diversified portfolio of equities, bonds and other securities. Each shareholder participates in the gain or loss of the fund. Units are issued and can be redeemed as needed. The funds Net Asset value (NAV) is calculated on a daily basis. Investments in securities are spread across a wide cross-section of industries and sectors and thus the risk is reduced. Diversification reduces the risk because all stocks may not move in the same direction in the same proportion at the same time. Mutual fund issues units to the investors in accordance with quantum of money invested by them. Investors of mutual funds are known as unit holders. When an investor subscribes for the units of a mutual fund, he becomes part owner of the assets of the fund in the same proportion as his contribution amount put up with the corpus (the total amount of the fund). Mutual Fund investor is also known as a mutual fund shareholder or a unit holder. Any change in the value of the investments made into capital market instruments (such as shares, debentures etc) is reflected in the Net Asset Value (NAV) of the scheme.

2. LITERATURE REVIEW

- **Aravmudhan V (2014)** analysed the relationship among service quality, customer satisfaction and customer retention state bank at Tiruchengode town. It addresses whether the dimensions of service quality impacts customer satisfaction which eventually leading to customer retention. Correlation was used to analyse the relationship among service quality, customer satisfaction and customer retention. Service quality and customer satisfaction have a positive correlation with customer retention. Hence, the bank provides quality services and also highly satisfies and retains their customers. Further, the bank implements and create awareness on e-corner facilities to satisfy and retain their customers. It reduces the employees' burden and help to maintain a long term

relationship between the employees and the customers because employees are the face of the bank.

- **Abdul A R. (2014)** evaluated the customers' satisfaction towards the banking services rendered by the SBI in Kanyakumari District. The author conducted a literature search on banking services of SBI interviewing of its 150 customers and thoroughly scrutinized how it caters to the g services of the SBI and the result of the survey stated that customers are highly satisfied with the Banking Service. Banking needs of the inhabitants of Kanyakumari district. The study also focused on various factors that determine the customers' satisfaction like employees' behaviour, banking services, banking performance, infra- structure facility, loan oriented services and other value added services. Analysis was made by using various tools like percentage analysis, Chi-square test and charts. The result showed that there is a significant relationship between the variable of customer satisfaction and banking services of the SBI and the customers have a medium level of satisfaction. The SBI could consider the researcher's suggestions in order to alleviate its reputation and customer satisfaction.
- **Shah Minal (2013)** conducted to study the customer perception towards services provided by public banks using SERVQUAL model. The research has been conducted with public sector banks. Typically, customers perceive very little difference in the banking products offered by public banks dealing in services as any new offering is quickly matched by competitors.
- **Parasuraman (1985) and Zeithaml et al (1990)** noted that the key strategy for the success and survival of any business institution is the deliverance of quality services to customers. The present study wanted to examine Customer's Satisfaction towards Banking Services of State Bank of India in Bareilly District, Uttar Pradesh and also find out any possible satisfaction among SBI services.

3. COMPANY PROFILE

3.1. State Bank of India - State Bank of India (SBI) is an Indian multinational, public sector banking and financial services company with 200 years of experience (Estd:1806). It is a government-owned corporation with its headquarters in Mumbai, Maharashtra. As of 2016-17, it had assets of Rs.30.72 trillion (US\$460 billion) and more than 14,000 branches, including 191 foreign offices spread across 36 countries, making it the largest banking and financial services company in India by assets. The company is ranked 232nd on the Fortune Global 500 list of the world's biggest corporations as of 2016.

3.1.1. AMUNDI: Amundi Asset Management is a privately owned investment manager in France. The firm provides research, accounting, risk control, management control, treasury, and marketing management solutions for its clients. It provides its services to individuals, institutions, corporations, pension and retirement funds, provident funds, banks, insurance companies, and government entities. The firm manages separate client-focused portfolios. It launches and manages equity, fixed income, and balanced mutual funds for its clients. The firm also launches and manages hedge funds for its clients. It invests in the public equity, fixed income, and hedging markets across the globe.

AMUNDI are globe leader in asset management and backed by Credit Agricola and Society General. It has more than 3000 institutional clients and distributors in 30 countries.

SBIMF has Rs 1.65 lac crores in AUM across mutual funds, segregated managed accounts, and domestic advisory and offshore advisory business. It has multiple asset classes ranging from equities and debt, money market to ETFs and structured funds. It includes investment team of 32 professional with strong track record. It has broad customer base with over 5.2 million related to individual, corporate and institutional investors.

3.2. Vision, Mission, Values and Services

3.2.1. Vision - “To be the most preferred and the largest fund house for all asset classes, with a consistent track record of excellent returns and best standards in customer service, product innovation, technology and HR practices.”

3.2.2. Mission - Constantly evolving fund house which focuses on customer delight, transparency and sustained returns.

- Attracting, nurturing and retaining the best talents.
- Leaders and not followers. Targeting to set the benchmark rather than following it.
- Leveraging on latest technology and group synergy to enhance business effectiveness.
- Global reach and awareness.
- Active risk management and global best practices in all business areas.
- Launching a wide of range of innovative products.

3.2.3. Values

- Integrity- True to self and to all stakeholders.
- Team work- Each individual works hand in – hand to achieve common organisational goals.
- Transparency- Create a culture of openness internally, communicating disclosures, policy and standards to the external world.
- Trustworthiness- A deep sense of trusteeship, winning the confidence and respect of everyone.
- Courage- To take the right decision, without any fear or favour, in the best interest of all our stakeholders.
- Commitment- To remain steadfast and true to our principles and goals, irrespective of situations. To be passionate about creating value. To make commitment a way of life.

- Customer Friendly- Customer first, understanding the customer's need with full empathy and providing solutions through customer delight.
- Purpose and Objectivity- Customer-centric, creative and clarity.

4. RESEARCH METHODOLOGY

4.1. Background of the Study

The main purpose of the study is to know the customers satisfaction towards the mutual fund schemes and their percentage of investments from their savings' and to know what type of risk takers are they.

4.2. Statement of the Problem

A market research was performed to find out the actuality from the investors about what they think about the various investment options. It was done to find out the investment patterns and behavior of the people i.e. how much they invest, what are the reasons behind their investment and where they invest.

Thus the questionnaire was framed to fetch the above mentioned information from the investors. Most of the questions in the questionnaire were objective in nature which helped the people to fill it utmost use. The sample size for the research is 100, which includes all the classes of people: aged 18 and above. Questionnaire is designed for conducting the market research.

4.3. Need and Importance of the Study

The research was carried in the SBI funds management private limited which is a joint venture between SBI and AMUNDI on project topic **"A Study on Customer Satisfaction Towards SBI Mutual Funds"**.

This study helps us to know the interest preferences of the customers regarding investment, options, getting return that they prefer.

4.4. Limitation of the Study

- Some of the respondents were not that responsive.
- Time constraints

4.5. Objectives of the Research

- To know the reasons behind the investment in SBIMF.
- To find out investment pattern of the investors.
- To know the level of investments into mutual funds.
- To find out the risk bearing capacity of the investors.
- To determine the type of fund selected for investment.
- To determine key factors behind the investment in mutual funds.

4.6. Type of Research

- **Sample unit**-the questionnaire was given to the customers of the SBI mutual funds.
- **Sample size**-the sample size is 53.

4.7. Sampling Procedure

The sample is selected in a random way irrespective of them being investor or not. It was collected through personal visits to the known persons by formal and informal questions that were informed using convenience sampling. The analysis is done using tables, graphs and frequency distribution.

4.8. Research Instruments

Research is totally based on primary data. Secondary data can be used only for the purpose of reference. Research has been done by primary data collection, and primary data has been collected by interacting with various customers. Secondary data collected through factsheet, websites and special publications.

4.9. Tools Used for Analysis

Frequency Distribution, Percentage Method, Table and Graphs

5. FINDINGS

- From the survey conducted it was found that majority of respondents were private firms employees who have invested in the mutual fund scheme.
- The income of the respondents majorly was in the range of between 1-5 lakh.
- Majority of the savings were invested in savings bank.
- Savings from their total was less than their total income.
- Most of the respondents gave priority to the aspect of safety.
- Majority of the respondents invest their savings into financial instruments where the risk is low and returns are high.
- Most of the respondents knew about the mutual fund.
- Investment pattern of the customers were majority on the monthly basis.
- The scheme that was invested by the customers was majorly into equity fund.
- The customers had knowledge about the equity markets for investments i.e., shares.
- Investors do know that their savings of the investment was being invested into share market.
- Customers do look into majorly the past performance before investing their savings investors do say that mutual fund is the good investment instrument.

6. SUGGESTIONS

- The customers can invest their savings not only in savings bank but also in shares and they can diversify their savings.
- They should not only look into the aspect of past performances but also should take the expert advices and the ratings as well.

- They can improve their customers by publicizing about their products etc.
- The transparency must be made about the companies and their performances so that the investors can decide their investment on the suitable basis.
- Credit rating agencies should rate the equities and mutual funds for the benefit of the investors.

7. CONCLUSION

From the research it was concluded that the mutual fund investment helps in diversification in order to reduce the risk and it's a risk free instrument which gives a satisfactory returns to the customers. The number of investors and the amount invested in mutual fund is quite low. Investors consider that it gives a low return some times, and they think that tax benefits for it is low and also investors judge that mutual fund schemes for the investment on the basis of their structure and performance. Further, investors expect good regulations, expert advice and strong grievance mechanism from mutual fund companies. Most of the investors have been investing in growth, income and balanced mutual fund schemes for the investments.

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“A STUDY ON PERFORMANCE EVALUATION OF MUTUAL FUNDS OF SHAREKHAN PVT. LTD.”

~ U. Prajna. M. Bhat

Abstract

The study is focused on the Performance Evaluation of Mutual Funds of Sharekhan Pvt. Ltd. by taking risk and return into consideration. The data for risk and returns is taken from Morningstar website pertaining to the period 1st July 2014 to 1st July 2018. The tools used for analysing the performance are Beta, Standard Deviation, Sharpe's measure, Treynor's measure and Jensen's measure. The research is aimed at evaluating the performance of Mutual Funds for decision making with regard to where to invest and when to invest.

1. INTRODUCTION

A Mutual Fund is like a bridge or a financial intermediary that allows a group of investors to pool in their money together with a pre-determined investment objective and then this gathered money is invested by the fund manager into various securities (stocks and bonds). In other words they mobilize money from investors, to invest in various securities as per the investment objectives agreed upon between the mutual fund and the investors.

Mutual fund assist the investors in earning income by participating in the opportunities available in various securities and markets. Mutual Fund mobilize money from all the possible investors who have different investment preferences and needs. In order to help these preferences and needs of investors, mutual funds mobilize different pools of money. Each such pool of money is called a Mutual Fund Scheme.

1.1. Working of Mutual Funds

First the Mutual Fund Schemes will announce their investment objective and seek information from the investors. The investor will invest in Mutual Fund Scheme if the investment objective reflects their own needs and preferences. Then the investment made by the investor is translated into a certain number of ‘units’ in the scheme. Thus an investor in a scheme is issued with units of the scheme. Scheme earns dividend income or interest income on the investment it holds. When the scheme is 1st made available for investment, it is called a NFO (New Fund Offer).

1.2. Systematic Investment Plan

Systematic Investment Plan (SIP’s) were introduced almost 20 years back by Franklin Templeton. Since then, SIP’s in good funds have generated excellent returns and created wealth for the investors. Mutual fund SIP’s work pretty much like bank recurring deposits, except they generate superior risk adjusted returns compared to recurring deposits and will have the tax benefit if the fund scheme is of Tax Saving Funds. There are number of deposits of retirement planning through Mutual Funds Systematic Investment Plans (SIP). SIP mainly help us to get addicted to the principle:- $\text{Income} - \text{Savings} = \text{Expenditure}$, rather than following the principle of $\text{Income} - \text{Expenditure} = \text{Savings}$.

1.3. Tax Saving Mutual Funds

Investments in mutual funds are very popular now. Tax Saving Mutual Funds are just like any other mutual funds which are eligible for tax benefits under section 80C. Most of the Tax Saving Funds are ELSS and make investments in Equity Market.

2. LITERATURE REVIEW

- ♦ **Irwin, Brown, F.E (1965)** analysed issues relating to investment policy, portfolio turnover rate, performance of mutual funds and its impact on the stock markets. They identified that mutual fund had a significant impact on the price movement in the stock market. They concluded that, on an average, funds did not perform better than the composite markets and there was no persistent relationship between portfolio turnover and fund performance.
- ♦ **S. Narayan Rao (2003)** evaluated the performance of Indian Mutual Funds in a bear market through relative performance index, risk-return analysis, Treynor's ratio, Sharpe's ratio, Jensen's measures and Fama's measures. The study made use of 209 open-ended schemes out of total schemes of 433 for computing the relative performance index. Then after excluding the returns which are less than the risk free returns, 58 schemes were finally used for the study of further analysis. The result of performance evaluation measure suggests that most of the mutual fund in the sample of 58 were able to satisfy the investor's expectation by giving excess returns over expected returns based on both premium for systematic and total risks.
- ♦ **Selvam et.al (2011)** the authors in their study had conducted the research on analysis of Risk and Return relationship of Indian Mutual Fund schemes and concluded that out of 35 sample schemes, eleven showed significant t-values and all other 24 samples did not prove significant relationship between the risk and the return. According to t-alpha values, majority (32) of the sample schemes returns were significantly different from their market returns during the study period.
- ♦ **Mr. Sattagouda Patil and Dr. Shivashankar K** the authors in their study "Comparative Analysis of selected Mutual Fund and its Impact on Investment Decision," analyzed that the investors prefer more equity funds as they want higher returns on their investment.

- ♦ **Dr. V. Rama Devi and Mr. Nooney Lenin Kumar** “Performance Evaluation of Debt Mutual Funds in India” this research is considered the performance of mutual funds during the period 2003-2007. The study consists of 137 debt mutual funds classified into five investment styles. The study evaluates the performance of different debt mutual funds on the basis of risk and return parameters, Sharpe ratio, Treynor ratio and Jensen ratio and is compared with benchmark index and examines the risk and return component among these mutual funds.

3. RESEARCH METHODOLOGY

3.1. Background of the Study

Mutual Fund has emerged as a preferred investment avenue by various investors. SIP (Systematic Investment Venue) which is a new way of investment in mutual fund play a key role in the creation of wealth. The investors can create wealth by investing a small sum of money every month in the selected mutual fund. Risk and Return are the two important facts that needs to be considered while investing, so the return expected by the investors depends on their risk taking capabilities. Before making an investment, the investors are required to evaluate various funds; a wrong investment into a fund may lead to capital loss to the investors.

3.2. Statement of the Problem

There are two ways of investment in Mutual Funds: SIP (Systematic Investment Planning) and Lump Sum Method. The investors lack knowledge of choosing the right method of investment. The investor finds it difficult to evaluate the performance of the fund to be invested, choosing a wrong fund may bring loss to the investor. For this purpose, five different equity growth funds (Tax Saving Funds) are selected for evaluating the performance of the funds.

3.3. Need of the Study

The main aim of this project is to know about the mutual fund and its working. To gain knowledge regarding SIP (Systematic Investment

Planning) which creates a wealth to the investor of started as earlier as possibly. Before making any investment, it's the duty of the fund manager to evaluate the performance of various funds. Hence through this study, an attempt is made to evaluate the performance of five selected funds.

3.4. Objectives of the Study

- To understand the concept of Mutual Funds
- To get a better knowledge about SIP (Systematic Investment Planning) and its role in wealth creation.
- To evaluate the performance of various funds using statistical tools such as Sharpe's, Treynor's and Jensen's Measure.
- To know the volatility of the fund using beta and standard deviation.

3.5. Type of Research

The research is analytical in nature.

3.6. Source of Data

The data is purely based on secondary source such as text book and websites. The data is collected for a period of five years from 2013 to 2018.

3.7. Statistical Tools Used

- **Standard Deviation**

It measures the total risk of a fund. It measures the fluctuation of the NAV as compared to the average returns of the schemes during particular period. A higher standard deviation indicates that the return of the fund is more unstable and riskier than the fund having lower standard deviation. Therefore, low standard deviation means low risk in funds return. In simple words Standard Deviation σ (sigma) is the square root of variance X.

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

- **Beta**

Beta measures the systematic risk of a portfolio. It gives a sense of a stock's market risk compared to greater risk. Beta is used to compare a stock's market to that of the other stocks. It is represented as β . Beta value of a fund is very close to 1. It indicates that the fund's performance closely matches the market index. Negative beta reflects the inverse relationship between the security and the market. It is computed by following formula:- Beta = covariance (stock, index) / variance (index). Where covariance (stock, index) means covariance between scheme and market returns while variance (index) means variance of index.

- **Treynor's Measures**

The measures was developed by the economist Jack Treynor. Treynor's measure is a measure of risk – adjusted performance of an investment portfolio. The Treynor's ratio is a measurement of the returns which is earned in excess of that which could have been earned on an investment that has no diversification risk per each unit of market risk is assumed. Under the analysis, the better performance of the portfolio is generated when the Treynor's ratio is higher.

- **Sharpe's Measures**

It was developed by Nobel Laureate William F Sharpe in 1966. It was originally called as "reward-to-variability". It has become the most widely used method for calculating risk-adjusted return. It is a way to evaluate the performance of an investment by adjusting for its risks. It's a measure of funds return per unit is assumed. Sharpe's ratio is calculated by deducting the risk free rate of return from the average monthly return for a portfolio and dividing the result by standard deviation of the portfolio returns. Higher ratio indicates the better the funds historical risk-adjusted performance. It tells us whether the

portfolio returns are due to smart investment decisions or a result of excess risk. Greater a portfolio's Sharpe's ratio the better is its risk adjusted performance. A negative Sharpe's ratio indicates that a risk-less asset would perform better than the security being analysed. If funds Sharpe's ratio is greater than the benchmark, it means that the fund's performance is superior over the market and if it's less then it means that the performance is not good in the market.

- **Jensen's Performance Measures**

The Jensen's Performance is a risk-adjusted performance measure that represents the average return on portfolio or investment, above or below that is predicted by the CAPM (Capital Asset Pricing Model) given beta and the average market return. This is the portfolio's alpha. In fact, the concept is sometimes referred to as 'Jenson's alpha'.

$$\text{Benchmark Portfolio} = R_f + \beta (R_m - R_f)$$

3.8. Limitations of the Study

1. The study of this analysis is mainly based on historical data.
2. The study is considered only for a period of 5 years from 2013 to 2018. The study considers performance evaluation of only equity funds (Growth).

4. DATA ANALYSIS AND INTERPRETATION

4.1. Compound Annual Growth Rate

The compound annual growth rate is a useful measure of growth over multiple time periods. It can be thought of as the growth rate that gets you from the initial investment value to the ending investment value, if the investor assumes that the investment has been compounding over the time period.

4.2. Power of Compounding

Compounding means earning interest on interest. Over the time more returns is invested, higher will be wealth creation for the investor. A Systematic Investment Plan (SIP) is an effective means to beat market

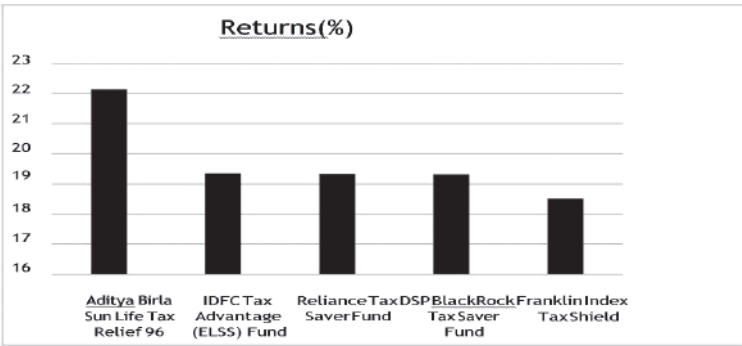
volatility and benefit from the enormous power of compounding over time. A SIP allows you to invest in any mutual fund by making smaller periodic investments instead of a lump sum one-time investment. Since this is small money flowing out at regular intervals, it doesn't affect investor's other financial commitments significantly. When speaking about this concept even the time value of money that is, the rupee earned today has more value than the rupee earned tomorrow. The investor should start his investment earlier so that the amount invested today has more value and which helps in faster wealth creation for the investor.

4.3. Power of Rupee Cost Averaging

Every investor wants to purchase stocks at low price and sell them at higher price. Investors generally tend to speculate on the right time to invest. But, it is a known fact that no one can predict whether the market is going to move-upwards or downwards. A more successful strategy to overcome this drawback is "Rupee-Cost Averaging" wherein a fixed amount is invested regularly.

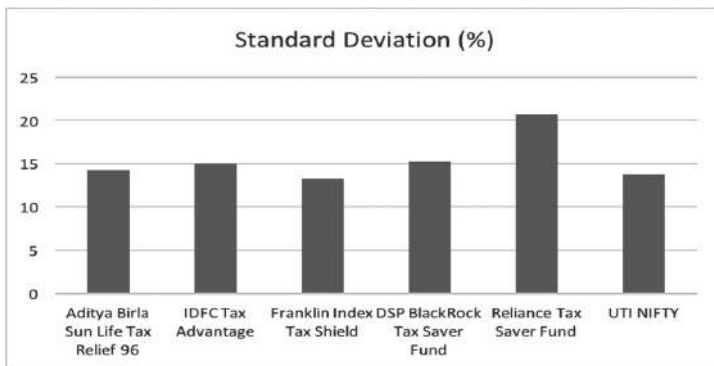
With rupee-cost averaging, an investor invests a specific amount at regular intervals irrespective of the investment's share (unit) price. By investing regularly, the investor takes advantage of market dips without worrying about when they'll happen. Their money buys more units when the price is low and fewer when the price is high, which can mean a lower average cost per unit over a period of time.

Graph 4.1 Showing the Returns of Equity (Growth) Fund (Tax Saver Fund) from the year 2014 to 2018



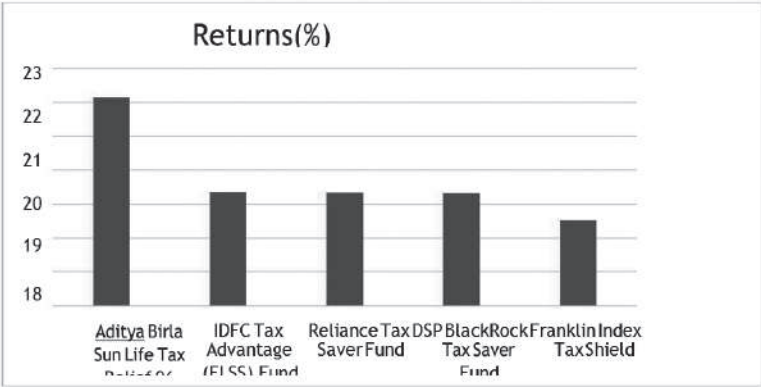
Interpretation - All the funds chosen for the study gives higher return when compared to the market return. Aditya Birla Sun Life Tax Relief 96 is the best fund to be selected for investment as it gives higher returns when compared to all the other funds and the market return, and also it has relatively less risk percentage when compared to all the other funds which provides less returns having more risk rate. The investor can also select IDFC Tax Advantage (ELSS) Fund, DSP BlackRock Tax Saver Fund or in Franklin India Tax Shield as it has more returns than its risks. The investor should be extra careful while investing in Reliance Tax Saver Fund as it provides returns which has more percentage of risk than its return.

Graph 4.2 Showing the Standard Deviation of Equity (Growth) Fund (Tax Saving Funds) from the year 2014 to 2018



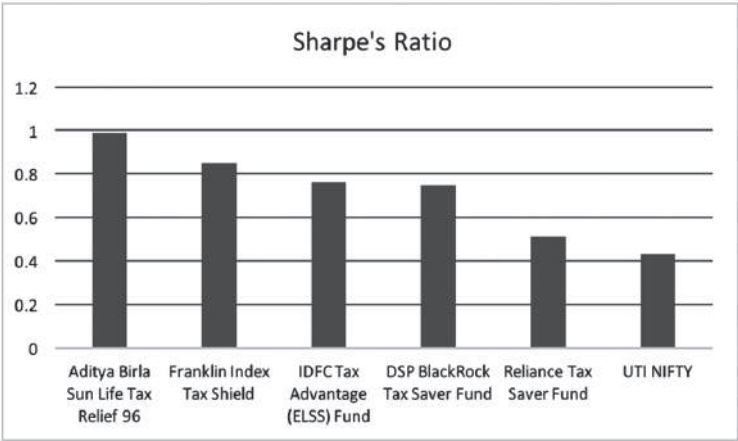
Interpretation - The Standard Deviation of Franklin Index Tax Shield is less when compared to all the other funds risk and the market risk. The best fund to invest is Franklin Index Tax Shield as its risk is less than the market risks and also provides return more than its risk. The investors can also park their money in Aditya Birla Sun Life Tax Relief 96, IDFC Tax Advantage, and DSP BlackRock Tax Saver Fund as its risk is less when compared to its returns. The investor should avoid or think before investing in Reliance Tax Saver Fund as its risk is more than its returns.

Graph 4.3 Showing the Volatility of Equity (Growth) Fund (Tax Saving Funds) from the year 2014 to 2018



Interpretation - From the above graph Aditya Birla Sun Life Tax Relief 96, IDFC Tax Advantage (ELSS) Fund and Franklin Index Tax Shield are less volatile when compared to the market. DSP BlackRock Tax Saver Fund more or less moves in tandem with the market. The Reliance Tax Saver Fund are highly volatile when compared with other funds

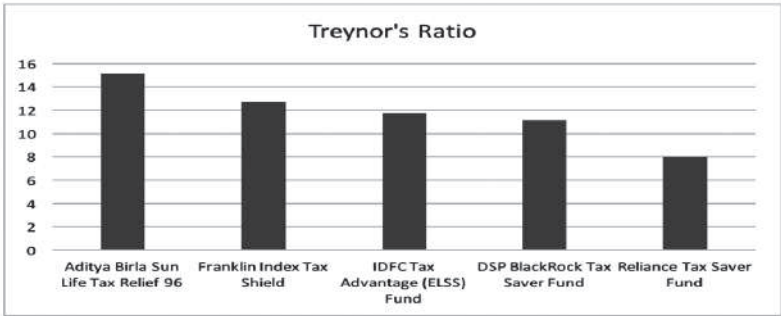
Graph 4.4 Showing Values of Equity (Growth) Funds (Tax Saving Funds) based on Sharpe’s Measure From the year 2014 to 2018



Interpretation - From the above graph Aditya Birla Sun Life Tax Relief 96 has performed well when compared to all the other funds.

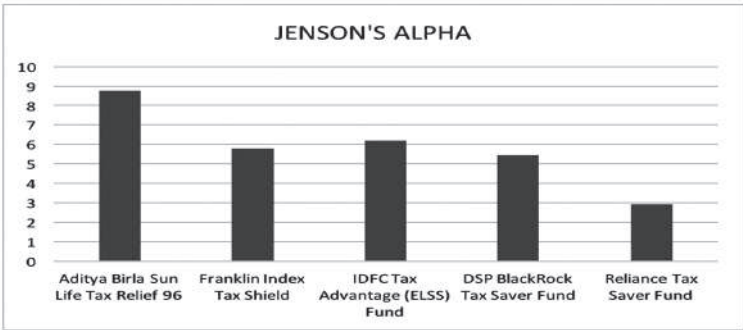
Even though Franklin Index Tax Shield gives high return the fund performance is considered while investing. Hence the investor can chose Aditya Birla Sun Life Tax Relief 96 for their investments. All the funds have performed well when we compare the funds with the performance of market index (UTI NIFTY).

Graph 4.5 Showing the Values of Equity (Growth) Funds (Tax Saving Funds) based on Treynors Measure from the year 2014 to 2018



Interpretation - From the above graph Aditya Birla Sun Life Tax Relief earns the highest risk premium and stands as a best fund for investment. Even Franklin Index Tax Shield earns good risk premium and can also be selected as an alternative fund for the investor for the investment.

Graph 4.6 Showing the Values of Equity (Growth) Funds (Tax Saving Funds) based on Jensen's Performance Index from the year 2014 to 2018



Interpretation - From the above graph, Aditya Birla Sun Life Tax Relief 96 has the highest alpha, hence they can be selected for investment. All the other funds have smaller alpha. Franklin Index Tax Shield also gives good alpha and can be selected as an alternative fund for the investment. The investor should not consider Reliance Tax Saver Fund for investment as it has a very low alpha when compared to all the other funds.

5. FINDINGS

1. According to the return, Aditya Birla Sun Life Tax Relief 96 Fund gives more return when compared to all the other funds which is 22.14% followed by IDFC Tax Advantage (ELSS) Fund with the return of 19.33%.
2. According to the risk, Reliance Tax Saver Fund assumes higher risk of 20.70% followed by IDFC Tax Advantage (ELSS) Fund with the risk of 14.99%.
3. According to Beta, Reliance Tax Saver Fund is more volatile with highest beta. DSP BlackRock Tax Saver Fund more or less move in tandem with the market.
4. According to Sharper's Performance Index, Aditya Birla Sun Life Tax Relief 96 has performed well compared to other funds with the ratio of 0.99 followed by Franklin Index Tax Shield having the ratio of 0.85.
5. According to Treynor's Performance Index, Aditya Birla Sun Life Tax Relief 96 gets the highest risk premium of 15.15 followed by Franklin Index Tax Shield with the risk premium of 12.69%.
6. According to Jensen's Performance Index, Aditya Birla Sun Life Tax Relief 96 has the highest alpha of 8.77 followed by Franklin Index Tax Shield with the alpha of 6.18.
7. According to the analysis of the funds Aditya Birla Sun Life Tax Relief 96 is performing well when compared to other funds.

6. SUGGESTIONS

1. According to the study, the investor can select Aditya Birla Sun Life Tax Relief for their investment as they give better returns for a given risk.
2. According to the study of returns, Aditya Birla Sun Life Tax Relief 96 and IDFC Tax Advantage ELSS Fund would be the best way of investment to the investors.
3. According to the study of returns, Franklin Index Tax Shield would be the best investment for the investor as it is providing lower risk and the investor can also select Aditya Birla Sun Life Tax Relief 96 as it provides best return with bearable risk factor.
4. Aditya Birla Sun Life Tax Relief 96 and Franklin Index Tax Shield funds would be a best option for the investors to investment on the basis of Sharpe's Performance, Jensen's Performance Measure and Treynor's Performance Measure.
5. According to overall study the best fund for the investors for investment is Aditya Birla Sun Life Tax Relief 96 and Franklin Index Tax Shield.

7. CONCLUSION

Mutual Fund is one of the investment avenue which pools money from different investors having common financial goal. The investment risk can be minimized through Diversification. They offer professionally managed basket of securities at a relatively lower cost for the common investors. Systematic Investment Plan is a new method of investment into mutual funds. It helps the investors to invest consistently. The investment in equity through Systematic Investment Plan can help the investors tackle the changing market scenario. Systematic Investment Plan is an inflexible investment program and expensive if withdrawn early. Performance evaluation is an important step that should be considered before investment because once the wrong investment is made it may encourage capital loss to the investor. The investors can select an Aditya Birla Sun Life Tax Relief 96 Fund for their investment.

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A STUDY ON “FORECASTING THE PERFORMANCE OF SELECTED EQUITY STOCKS IN BANKING AND FMCG SECTORS”

~Navya Kothandaraman

Abstract

The equity analysis linked with the industry reveals its involvement with the Banking and FMCG industry. An analysis of these values facilitates a clear understanding and decision making about the investment in securities. The appropriate stock selections those are suitable for investment is a difficult task. The key factor for each investor is to earn maximum profits on their investments. Numerous techniques used to predict stocks in which fundamental and technical analysis are one among them.

This project has been initiated with an intention to help investors in their prediction on the Shares of different companies. We have utilized four different Statistical tools to test on the accuracy towards reaching the estimated value. The first tool being Moving Average considered for 3 different stages i.e. 3 months, 5 months and 7 months to have a look at the closeness we can reach towards the prediction. The second tool, Exponential Smoothing accompanies Alpha to have a check to reach on the predicted value. Time Series Analysis being the third tool which chooses monthly pricing values to reach some of

the values like Coefficients to reach the destination of predicted pricing. Lastly Multiple Regression, which has been an effective and recommended approach due to its extension on reaching the predicted value.

We have utilized 10 Stocks from two different sectors which extends through FMCG and Banking sectors. These are the most sort after sectors in present day where investors try to accumulate their shares. It would not have been effective with few stocks as now it is easy to understand when we have a detailed extensions of each stock. The tools gave more or less accurate forecasts for stocks, the best results were obtained for stocks which use Multiple Regression as their key approach.

The study believes our stock forecasting models will be useful for individual investors and retirees looking for a stable future who have no access to detailed information about the performance of the companies behind the stocks.

1. INTRODUCTION

Stockbroking, the function of buying and selling financial securities such as stocks, shares and bonds through the stock market by a dealer (stockbroker) who acts as an agent on behalf of clients wishing to buy or sell securities.

A stockbroker is a regulated professional individual, usually associated with a brokerage firm or broker-dealer, who buys and sells stocks and other securities for both retail and institutional clients through a stock exchange or over the counter in return for a fee or commission. Stockbrokers are known by numerous professional designations, depending on the license they hold, the type of securities they sell, or the services they provide.

The first stockbroking began in Rome, where the first recorded buying and selling of shares occurred in the 2nd century BC. After Rome fell, stockbroking did not become a realistic career until after

the Renaissance, when government bonds traded in Italian city-states such as Genoa or Venice. New stock exchanges opened their doors in the 16th and 17th centuries, including the London Stock Exchange which was opened at a coffee shop in 1698. In the 1800s, in the United States, the New York Stock Exchange opened its doors under a buttonwood tree in New York City. 24 stockbrokers signed the Buttonwood Agreement, agreeing to trade five securities under that buttonwood tree.

In India, Stockbrokers typically earn a bachelor's degree in finance or business administration. A finance degree prepares students to work as stockbrokers by focusing their studies on financial laws and regulations, accounting methods and investment management. Students study the principles of economics and currency, financial planning and financial forecasting. On-the-job training programs are often available to aspiring stockbrokers, which allow them to gain practical experience and work towards earning the required professional licenses.

The internship was undertaken in SCIPL which is a financial service provider and stock broking company in a span of twelve weeks of project, it provided good opportunity for me and I learnt from my manager how the company undertakes its various operations and also learnt about the growth and development of the stock market which helped me to understand the various aspects relating to financial sector in the economy.

I was given responsibility to analyse the performance of few stocks related to FMCG and Banking sector and drawn my conclusion which sector is performing better with comparison to market. The internship set a strong platform for me on understanding the concepts of Forecasting, Equity Market, FMCG and Banking Sector along with Stock Broking and its Interpretation.

Forecasting in Stocks is the act of trying to determine the future value of a company stock or other financial instrument traded on an

exchange. The successful prediction of a stock's future price could yield significant profit. The efficient-market hypothesis suggests that stock prices reflect all currently available information and any price changes that are not based on newly revealed information thus are inherently unpredictable. Others disagree and those with this viewpoint possess myriad methods and technologies which purportedly allow them to gain future price information.

An equity market is a market in which shares are issued and traded, either through exchanges or over-the-counter markets. Also known as the stock market, it is one of the most vital areas of a market economy because it gives companies access to capital and investors a slice of ownership in a company with the potential to realize gains based on its future performance. Equity markets are the meeting point for buyers and sellers of stocks. The securities traded in the equity market can be either public stocks, which are those listed on the stock exchange, or privately traded stocks. Often, private stocks are traded through dealers, which is the definition of an over-the-counter market.

Fast-moving consumer goods (FMCG) sector is the 4th largest sector in the Indian economy with Household and Personal Care accounting for 50 per cent of FMCG sales in India. Growing awareness, easier access and changing lifestyles have been the key growth drivers for the sector. The urban segment (accounts for a revenue share of around 40 per cent) is the largest contributor to the overall revenue generated by the FMCG sector in India and recorded a market size of around US\$ 52.75 billion in 2017-18. However in the last few years, the FMCG market has grown at a faster pace in rural India compared with urban India. Semi-urban and rural segments are growing at a rapid pace and FMCG products account for 50 per cent of total rural spending.

As per the Reserve Bank of India (RBI), India's banking sector is sufficiently capitalized and well-regulated. The financial and economic conditions in the country are far superior to any other country in the world. Credit, market and liquidity risk studies suggest that Indian Banks are generally resilient and have withstood the global downturn well. Indian banking industry has recently witnessed the roll out of

innovative banking models like payments and small finance banks. RBI's new measures may go a long way in helping the restructuring of the domestic banking industry. The digital payments system in India has evolved the most among 25 countries with India's Immediate Payment Service (IMPS) being the only system at level 5 in the Faster Payments Innovation Index (FPII).

2. LITERATURE REVIEW

1. Based on “Risk and Return Analysis of Equity Shares with Special Reference to Companies (NSE) Stock Index” by Dr. R.Narayanasamy and Ms. R.Thirugnanasoundari.

The study helps to determine the market price and trading volume for the stock, high and low price for the stock over different periods and the earnings for the company. The right choice of a security or portfolio to an investor depends on the level of risk that the stock carries. An estimation of the risk-return profile of a security or portfolio is an important aspect in investment management. The stock market research will allow one to assess the possible risk of a stock against the possible rewards the stock may offer. In this study the context is relevant in explaining the parity between risk and return in the Indian equity market. It will definitely help the stakeholders to take appropriate decision regarding the time of investment, horizon of investment, quantum of investment and even portfolio selection.

2. Based on “A Study on Risk and Return Analysis of Selected Stocks in India” by Dr. S. Krishnaprabha and Mr.M.Vijayakumar.

This research displays risk and return go hand in hand. If an investor wishes to earn higher returns, then the investor must appreciate that this will only be achieved by accepting a commensurate increase in risk. Based on risk and return analysis, high risk gives high returns with low risk gives to low return, based on this concept in Banking and Automobile sector high risk gives low return, and in Information Technology, Fast Moving Consumer Goods and Pharmaceutical sector low risk gives high return. Alpha stock is

positive and the companies are independent to market return and have a profitable return.

3. Based on the analysis conducted by Dr. Pramod Kumar Patjoshi in the year 2016 in his article “Comparative Risk Return Analysis of Bombay Stock Market with Selected Banking Stocks in India”.

His study shows how the banking sector engages major share among other sectors in Indian stock trading scenario. It examines the correlation between risk and return of the Sensex and Banking stocks of BSE 30 (Sensex). India's one of the superior stock exchange i.e. Bombay Stock Exchange (BSE). In this study different Sensex and Banking stock indices have been used to examine the risk return trade off of Sensex with that of HDFC Bank, ICICI Bank, Axis Bank and SBI. The study is based on secondary data. The data for the analysis has taken from the BSE website over a period of 15 years from January 1, 2001 to December 31, 2015. In this analysis for testing the presence or absence of risk return trade off in the Indian equity markets and for testing hypothesis, different methods like correlation, regression, descriptive statistics and t-test have been employed.

4. William F Sharp in his article “Adjusting for Risk in Portfolio Performance Measurement”.

His research states that if a portfolio is highly diversified, its characteristic line will describe its performance almost perfectly all variation in its rate of return may be attributed to market swings and the portfolio's volatility. But if the portfolio is not highly diversified, its excess return will vary around its characteristic line, leading to additional overall variability. The article only introduced some of the modern approaches. The hallmark of all such procedures is the explicit consideration of risk. Several firms now offer performance measurement services using procedures, and least one has gone well beyond, to provide detailed diagnoses of the performance of a component of each portfolio. Risk-adjusted performance is clearly here to stay.

3. RESEARCH METHODOLOGY

3.1 Background of the Study

Understanding the concepts and the relationship between them were first step towards the study and the topics include:

3.1.1. Risk

The meaning of risk in dictionary is “a situation involving to danger”. In terms of finance (or) management it is “investment associated with uncertainty”. It is possibility that expected return on investment is totally different from normal return. This concept is most important in finance i.e., higher risk has higher return.

3.1.2. Return

Return is “what we receive other than investment”. The return says about the profit (or) loss on what you have invested.

3.1.3. Equity Stocks

Equity is the value of an asset less the amount of all liabilities on that asset. As an accounting equation, one can represent it as $\text{Assets} - \text{Liabilities} = \text{Equity}$. Equity by definition means ownership of assets after the debt is paid off. Stock generally refers to traded equity.

3.1.4. FMCG Sector

Fast – Moving Consumer Goods (FMCG) or Consumer Packaged Goods (CPG) are the products that are sold quickly and at relatively low cost. The FMCG industry in India is one of the largest sectors in the country and over the years has been growing at a steady pace. The FMCG sector is an important contributor to India’s GDP and it is the fourth largest sector of the Indian economy. Items in this category are meant for frequent consumption and they usually yield a high return.

3.1.5. Banking Sector

The Banking sector is the section of the economy devoted to the holding of financial assets for others, investing those financial assets as leverage to create more wealth and the regulation of those

activities by government agencies. The banking sector has always attempted to diversify its risks by investing as widely as possible; this prevents an unexpected loan default from sinking the entire bank. The banking sector's core is trust. Without it, no one would deposit money, and it would be unable to use that money to give loans, invest and drive economic growth and regulation is used to create that trust.

3.2 Statement of the Problem

The analysis of past performance will clearly enable the company and its investors to understand the average return and associated risk with the various equity stocks of both the sectors of Banking and FMCG for the period of 5 years.

The returns express the quantity which a shareholder earned on an investment during a certain stage of time while the risk represents the uncertainty associated with a stock. In financial term, a risk is a chance or probability that a certain investment may or may not deliver the actual or expected returns.

3.3 Need for the Study

In the budgetary field, it is a typical information that cash, or fund is a panic and that speculators attempt to amplify their profits yet when the profits are higher, the danger is additionally higher. Return and hazard go together, and they have an exchange off. The craft of venture is to see that arrival is expanded with least hazard. In the above talk we focused on "venture" and contribute we must examine securities. A blend of securities will constitute the arrangement of the speculator which gives him an unmistakable picture about the exhibitions of the stocks.

3.4 Objectives of the Study

- The main objective is to study selected companies, analyse financials and look at their quantitative and qualitative aspects mainly for decisions as to whether to Invest or not.

- To suggest and comment for holdings - sell or buy position that could be given to Stakeholders
- To predict value of certain equity under the specific circumstances.
- To compare between companies during the same time in different sectors chosen i.e., FMCG and Banking.

3.5 Type of Research

The study is based on an approach which uses **Analytical Research** to be able to establish a scientific and systematic search for pertinent information on the Risk and Return of Equity stocks in the sectors. Analytical Research is primarily concerned with testing hypothesis and specifying and interpreting relationships by analysing the facts or information already available. The research comprises defining and redefining problems, formulating hypothesis, collecting, organizing and evaluating data; making deductions and reaching conclusion; and at last carefully testing the conclusions to determine whether they fit in the formulated hypothesis.

3.6 Sampling Techniques

The study would be using the **Non Probability Sampling** as it does not provide every unit in the universe with a known chance of being chosen for the sample.

Specifically under the non-probability sampling the study focuses on **Convenience Sampling**. It is also known as deliberate sampling or purposive sampling. The units in the universe do not enjoy equal representative of the universe. Sampling units are selected on the advice of some experts or by the intuition/opinion of researcher him/herself. In the first case, an expert who is familiar with the sampling frame guides the researcher in selecting the sampling units from the sampling frame, whereas in the second case the researcher applies his/her intuitive judgment & his/her previous experience in selecting the units from the frame. As a result, there is an element of bias in the selection.

3.7 Sample Size and Sample Description

Sample size measures the number of individual samples measured or observations used in a survey or experiment. Is the act of choosing the number of observations or replicates to include in a statistical sample. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. Optimal sample size plays a very important role as it allows to have appropriate analysis, to provide the required level of accuracy and to allow the validity of significance test.

In the current study a sample of 5 FMCG companies selected using convenience sampling and they are: ITC Ltd, Godrej, P&G Ltd, HUL Ltd and Colgate. Similarly 5 banking companies includes: AXIS Bank, ICICI Bank, HDFC Bank, YES Bank and KOTAK MAHINDRA Bank. These companies are chosen because of them being familiar across the sector and also due to their easily available data for analysis.

3.8 Actual Collection of Data

The data could be classified under the below two sections:

- 3.8.1. Primary Data:** Raw data or primary data is a term for data collected at source. This type of information is obtained directly from first hand sources by means of surveys, observations and experimentation and not subjected to any processing or manipulation and also called primary data.
- 3.8.2. Secondary Data:** It refers to the data collected by someone other than the user i.e. the data is already available and analysed by someone else. Common sources include various published or unpublished data, books, magazines, newspaper, trade journals etc. Hence for the study on Equity stocks the data is collected from other sources which conclude that secondary data is being utilized.

3.9 Tools Used for the Analysis

The tools which would be considered along with the data collected towards the fulfilment of the research include the following:

3.9.1. Moving Average

A moving average (MA) is a widely used indicator in technical analysis that helps smooth out price action by filtering out the “noise” from random price fluctuations. It is a trend-following or lagging indicator because it is based on past prices.

3.9.2. Exponential Smoothing

Exponential smoothing is a rule of thumb technique for smoothing time series data using the exponential window function. Whereas in the simple moving average the past observations are weighted equally, exponential functions are used to assign exponentially decreasing weights over time. It is an easily learned and easily applied procedure for making some determination based on prior assumptions by the user, such as seasonality. Exponential smoothing is often used for analysis of time-series data.

3.9.3. Time Series Analysis

A time series is a sequence of numerical data points in successive order. In investing, a time series tracks the movement of the chosen data points, such as a security's price, over a specified period of time with data points recorded at regular intervals. There is no minimum or maximum amount of time that must be included, allowing the data to be gathered in a way that provides the information being sought by the investor or analyst examining the activity.

3.9.4. Regression

Regression is a statistical measure used in finance, investing and other disciplines that attempts to determine the strength of the relationship between one dependent variable (usually denoted by Y) and a series of other changing variables (known as independent variables).

Regression helps investment and financial managers to value assets and understand the relationships between variables such as commodity prices and the stocks of businesses dealing in those commodities.

3.9.5. Alpha

Alpha is used in finance as a measure of performance. Alpha, often considered the active return on an investment, gauges the performance of an investment against a market index or benchmark which is considered to represent the market’s movement as a whole. The excess return of an investment relative to the return of a benchmark index is the investment’s alpha.

3.10 Limitations of the Study

- The stocks that were selected are restricted to Banking and FMCG sector.
- The analysis may not be reliable after a certain period.

4. DATA ANALYSIS & INTERPRETATION

4.1. FMCG COMPANIES

Table 4.1: RMSE Values of Moving Average for FMCG Companies

MOVING AVERAGE			
COMPANY NAME	3 months	5 months	7 months
COLGATE	34.1027	66.9037	62.7851
GODREJ	23.0399	33.07	41.6485
HUL	42.2776	63.7282	84.2606
ITC	15.0966	18.777	21.0465
P&G	249.442	414.64	574.959

We have collated the data of the selected FMCG companies and compute the Moving Average values; from the above table it is evident that the lower values show the efficiency and we see 3 months having minimal value and especially ITC with 15.0966.

Table 4.2: RMSE Values of Exponential Smoothing for FMCG Companies

EXPONENTIAL SMOOTHING			
COMPANY NAME	0.3	0.5	0.7
COLGATE	48.3698	52.9503	63.7226
GODREJ	32.592	35.3827	42.0493
HUL	58.8407	67.0497	86.7435
ITC	22.2848	21.7149	21.8112
P&G	346.601	416.093	580.058

The data collected is summarized here with the Exponential Smoothing values and see that 0.3 has lesser RMSE values compared to 0.5 and 0.7 and hence its efficiency is proved.

Table 4.3: RMSE Values of Regression for FMCG Companies

REGRESSION		
COMPANY NAME	SIMPLE	MULTIPLE
COLGATE	79.1095	23.592
GODREJ	50.1192	12.527
HUL	112.765	25.227
ITC	21.9453	8.1004
P&G	688.439	141.02

Here it is evident that efficiency of Multiple Regression is better compared to simple regression.

4.2. BANKS

Table 4.4: RMSE Values of Moving Average for Banks

MOVING AVERAGE			
BANK NAMES	3 months	5 month	7 months
AXIS BANK	25.9319	40.1026	51.6579
HDFC BANK	49.2902	76.6787	103.906
ICICI BANK	14.8107	20.6105	25.092
KOTAK MAHINDRA BANK	35.2012	51.8027	67.388
YES BANK	88.1887	109.822	126.223

We have collated the data of all the selected Banks with respect to the Moving Average values; the lower values show the efficiency and we see 3 months having minimal value. ICICI Bank with 14.8107 leads.

Table 4.5: RMSE Values of Exponential Smoothing for FMCG Companies

EXPONENTIAL SMOOTHING			
BANK NAMES	0.3	0.5	0.7
AXIS BANK	36.3762	41.3955	51.2656
HDFC BANK	69.725	80.3686	107.708
ICICI BANK	20.9143	22.4808	26.7889
KOTAK MAHINDRA BANK	48.8085	55.0092	69.7
YES BANK	159.39	145.361	138.006

The data collected is summarized here with the Exponential Smoothing values and see that 0.3 has lesser values compared to 0.5 and 0.7 and hence its efficiency is proved.

Table 4.6: RMSE Values of Regression for FMCG Companies

REGRESSION		
BANK NAMES	SIMPLE	MULTIPLE
AXIS BANK	75.9854	15.1308
HDFC BANK	119.667	20.9653
ICICI BANK	39.491	9.24413
KOTAK MAHINDRA BANK	63.0539	19.2728
YES BANK	130.861	7.93526

Here the least values or efficiency can be seen in Multiple Regression compared to simple regression.

5. SUGGESTIONS

Based on the analysis performed on both FMCG and Banking sector, the below suggestions could be taken into consideration.

- From the above study we see that Moving Average and Exponential Smoothing are a perfect tool for Companies ITC and ICICI seeing their minimal values which help in decision making. Similarly Multiple Regression has been a tool suitable for ITC and YES Bank. Hence these companies can use these Statistical Analysis for their Forecasting.
- Based on technical analysis it is suggested to the investors to BUY following companies stocks like Colgate, HUL, ITC, P&G, HDFC Bank, ICICI Bank and Kotak Mahindra Bank and SELL signal suggested for Godrej.
- We observe same number of BUY and SELL Signal in AXIS Bank which can be considered for Intra-Day Trading.

- d) From the study Multiple Regression is the most efficient tool to forecast the Equity Stock and hence would recommend for prediction of stocks' BUY and SELL.

6. CONCLUSION

We have seen the different scenarios around the FMCG Companies and Banks' Stocks. Our requirement being the best way to reach to a conclusion of when to Buy and when to Sell the Stocks being the motive.

Hence we can conclude that Multiple Regression is accurate in predicting future prices compared to Moving Average, Exponential Smoothing and Time Series Analysis.

- a) If we observe a huge Fluctuations i.e. BUY and SELL Signals, then Investors should not hold the Stock/Shares for a long time. Hold them for short period and then trade them.
- b) If Majority SELL Signal is observed, then the demand for that Company Share is HIGH. Therefore to gain MAXIMUM Profit, Investors should prefer to go for Selling.
- c) If Majority BUY Signal is observed, then the Investors should hold the share for a few more period to avoid ending up in LOSS. Preferably hold for a long time also called Long Period Trading.

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A STUDY ON “NON- PERFORMING ASSETS WITH SPECIAL REFERENCE TO SREENIDHI SOUHARDA SAHAKARI BANK NIYAMITHA”

~Vaishnavi P

Abstract

The Cooperative form of organization is the ultimate organization for economically weaker sections in the country. The management of Non-Performing Assets in cooperative banks is a really tough challenge and unmanageable task. The title of the study is “A Study on Non- Performing Assets with special reference to Sreenidhi Souharda Sahakari Bank Niyamitha (SSBN)”. These findings examine the position and growth of Non-Performing Assets level in the bank for the last 5 years that is 2013-2014 to 2017-2018. It considers the various sectors in which the Non-Performing Assets was formed and through the various Non-Performing Assets like substandard assets, doubtful assets, loss assets, gross Non-Performing Assets, provision for Non- Performing Assets, net Non-Performing Assets, movements in Non-Performing Assets provisions. The analysis is not only done as the whole of bank it is done even through considering the branch wise data it includes number of Non-Performing Assets in different branches and by comparing the total advances, total deposits and branch advances with the help of secondary data available from

the bank. The study observed that there is increase in advances, deposits and provisions in Non-Performing Assets and decrease in the level of Non-Performing Assets over the period of the study. However, from the study it is clear that all the banks are facing the problem of Non-Performing Assets no matter how the bank functions, there is still exist a certain level of Non-Performing Assets in all the branches of Sreenidhi Souharda Sahakari Bank Niyamitha.

1. INTRODUCTION

1.1 Non-Performing Assets (NPA)

Non- Performing Asset means a loan or an account of borrower, which has been classified by a bank or financial institution as sub-standard, doubtful or loss asset, in accordance with the directions or guidelines relating to asset classification issued by RBI.

♦ Types of NPA

There are three major types of NPA:

- **Sub-standard:** The account holder comes in this category when they don't pay three installments continuously after 90 days and up to 1 year. For this category bank has made 10% provision of funds from their profit to meet the losses generated from NPA.
- **Doubtful NPA:** Under doubtful NPA there are three sub categories :
 - o D1 i.e. up to 1 year: 20% provision is made by the banks.
 - o D2 i.e. up to 2 year: 30% provision is made by the bank.
 - o D3 i.e. up to 3 year: 100% provision is made by the bank.

- **Loss Assets:** Under this 100% provision is made. When account holder comes in this category their account can be written off by the banks. After this the assets are handed over to recovery agents for sale.

1.2. Causes for Creation of Non-Performing Assets

- **External causes:** Natural calamities and climatic conditions, recession, changes in government policies, changes in economic conditions, Industry related problems, Impact of liberalization on industries and technical problems.
- **Internal causes:** Most of the project reports are ground realities, proper linkages, product pricing etc. Some approach for the “heck” of starting a venture, with poor knowledge of product risks, over depended on poorly paid killed workers and technicians, Building up pressure for sanctions, Inefficient handling by bankers, lack of professionalism and appraisal standards, Non-observance of system, procedures and non- insistence of collaterals etc., lack of post sanction monitoring and unchecked diversions.

2. COMPANY PROFILE

Sreenidhi Souharda Sahakari Bank Niyamitha, a unique urban Co-operative Bank founded in 1998, rests on the pillars of co-operation, thrift, fellowship, character and the selfless service.

- The Head office is located in V.V. Puram
- Established in 1998
- Branches of Bank
 - ❖ Bommanahalli started in the year 2010, shifted to HSR Layout in the year 2015
 - ❖ Marathahalli started in the year 2013
 - ❖ Raghuanahalli started in the year 2018
 - ❖ Arekere started in the year 2018

2.1 Products and Services of Bank -

Locker Facility, ECS Facility, RTGS Facility, DD's All Over India, ATM Facility and NEFT Facility

2.2. Mission

- Aims to provide a range of financial services to the customers/members.
- Manage the risks judiciously and offer the services to the best satisfaction of the customers.
- Transparency in all dealings with the customers/members.
- Training the employees to render the best possible professional and pleasing services. Ensure fair returns to the members and contribute to their general welfare.

3. REVIEW OF LITERATURE

- **Toor N.S. (1994)** stated that recovery of non-performing assets through the process of compromise by direct talks rather than by the lengthy and costly procedure of litigation. He suggested that by constant monitoring, it is possible to detect, the sticky accounts, the incipient sickness of the early stages itself and an attempt could be made to review the unit and put it back on the road to recovery.
- **S.N. Bidani (2002)** Non-performing Assets are the smoking gun threatening the very stability of Indian banks. NPAs wreck a bank's profitability both through a loss of interest income and write-off of the principal loan amount itself. This is definitive book which tackles the subject of managing bank NPAs in it's entirety, starting right from the stage of their identification till the recovery of dues in such accounts.
- **Kavitha. N (2012)** emphasized on the assessment of non-performing assets on profitability, its magnitude and impact. Credit of total advances was in the form of doubtful assets in the past and has an adverse impact on profitability of all

Public Sector Banks affected at very large extent when non-performing assets work with other banking and also affect productivity and efficiency of the banking groups. The study observed that there is increase in advances over the period of the study.

- **Dr. A Ramachandran, D.Siva Shanmugam (2012)** Analyzed that the urban cooperative banks exhibited a greater emphasis on product diversification, customer orientation, thrust towards retail banking, adoption of IT for improved service, better MIS and management and strategic mergers and acquisition across bank groups. The researcher concluded that the future of urban cooperative banks is challenging because of the competition from public sector banks and private sector banks. Public sector banks and private sector banks are concentrating on their major expansion activities both vertically and horizontally. The growth of urban cooperative banks depends on transparency in control and operation, governance, customer-centric policies, technology-up gradation and efficiency.

4. RESEARCH METHODOLOGY

4.1 *Statement of the Problem*

An asset, which fails to generate income for the bank is known as NPA. The raising level of NPA has negative implications on the functioning of the bank. It calls for the management to take immediate remedial actions to overcome this impending problem. Hence the study primarily focuses on the issue of the poorly performing, non-performing assets of the bank and to understand its implications.

4.2 *Purpose of the Study*

The main purpose of conducting this study is to analyze the non-performing assets and to suggest ways and means of managing NPA, in order to overcome the problems faced by the bank regarding the presence of NPAs.

4.3 Limitations of the Study

- Study is restricted to conduct only at Sreenidhi Souhardra Sahakari bank Niyamitha.
- Some of the facts and figures are not incorporated in this project as it was too confidential.
- The study considers NPA as a whole and not on the sub categories.

4.4 Objectives of the Study

- To find out the level of NPA with respect to the bank.
- To study the trend in NPA levels over the last 5 years.
- To study the cause of NPA in the bank.
- To study the problems faced by the bank due to NPA.
- To study the recovery procedure.

4.5 Type of Research

- **Analytical Research**

The study is done using the available information as the base to make the further study on Non-Performing Assets.

- **Primary data:**

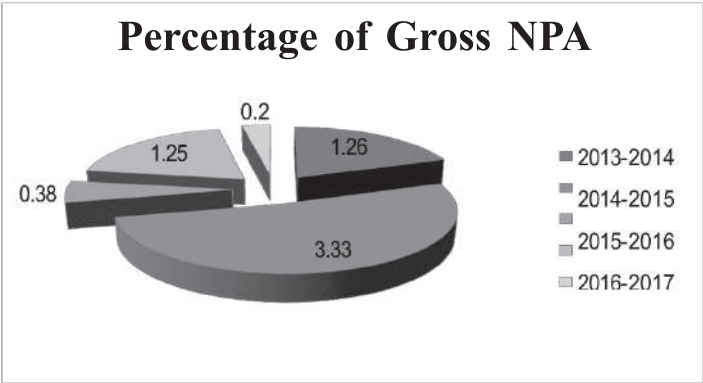
Primary data is collected through direct interactions with the branch managers and other staff members of the bank for required information.

- **Secondary data:**

Secondary data was collected through annual reports of the bank, circulars of the bank, review of books and website of Sreenidhi Souharda Sahakari Bank Niyamitha.

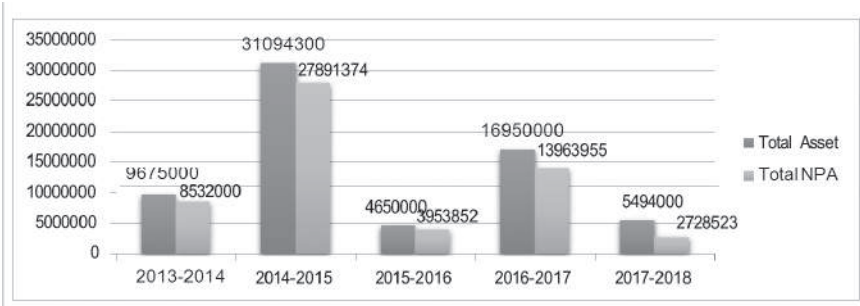
5. DATA ANALYSIS AND INTERPRETATION

Graph 5.1: The Percentage of Gross NPA for Last 5 Financial Years



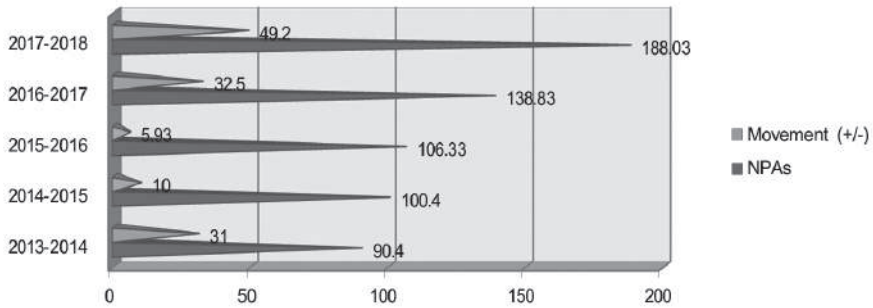
Interpretation - The percentage of gross NPA, it shows a downward trend. In the financial year 2013-2014 having 1.26%, in the financial year 2014-2015 its 3.33%, in the financial year 2015-2016 it is decreased to 0.38%, in financial year 2016-2017 it is increased by 1.25% and in the financial year 2017-2018 it is decreased to 0.20%.

Graph 5.2: Total NPA from Total Assets for last 5 Financial Years



Interpretation - The total NPA from total assets, in 2013-2014 the total NPA was 88.19% in 2014-2015 it increased to 89.70%, in 2015-2016 it is has been decreased to 85.03%, in 2016-2017 it is decreased to 82.38% and in 2017-2018 it is decreased to 49.66%. This shows the decrease in NPA.

Graph 5.3: The Movement in Provisions For Last 5 Financial Years (₹ In Lakhs)



Interpretation - The movement of NPA provision has been decreasing year by year in the financial year 2013- 2014 the movement of provision is been decreased up to Rs. 31.00 lakhs, in the financial year 2014- 2015 it has been decreased to ₹10.00 lakhs, in the financial year 2015-2016 it has been decreased to Rs. 5.93 lakhs, in the financial year 2016-2017 it has been decreased to Rs. 32.50 lakhs and in financial year 2017-2018 it has been decreased to Rs. 49.20 lakhs.

The Different Categories of Loans Which Has Turned Out to be NPA for the Last 5 Financial Year (₹ In Lakhs)

In the financial year 2013-2014 the loans which became NPA is Housing Loan of ₹ 44.16 lakhs, mortgage loan of ₹ 11.13, Vehicle loan of ₹ 3.86 lakhs, Long Term Business Loan of ₹ 21.74 lakhs and Agriculture loan to ₹ 4.43 lakhs. In the financial year 2014-2015 the huge NPA was due in Gold loan i.e., 54 lakhs, Housing loan of ₹ 29.68 lakhs, Mortgage loan of ₹ 48.38 lakhs, Personal loan of ₹ 8.7lakhs, Vehicle loan of ₹ 9.87 lakhs and Long Term Business loan of ₹ 12.6 lakhs. In the financial year 2015-2016 there is a decrease in NPA mortgage loan of ₹ 7.11 lakhs, Long Term Business loan of ₹ 24.73 lakhs and Education loan of ₹ 7.70 lakhs. In the financial year 2016-2017 NPA in housing loan of ₹ 12.24 lakhs, mortgage loan of ₹ 6.84 lakhs and in long term business loan ₹ 10.43 lakhs. In the financial year 2017-2018 there is an increase in mortgage loan of ₹

10.62 lakhs, vehicle loan of ₹ 0.26 lakhs, long term business loan has increased to ₹ 15.47 lakhs and a surety loan of ₹ 0.93 lakhs.

6. FINDINGS

- The findings suggests that in the financial year 2013-2014 to 2017-18 total deposits increased from ₹ 9442.43 lakhs to ₹ 20, 54.67 lakhs.
- The NPA accounts in the V V Puram branch shows an downward trend that is in the financial year 2013-2014 it is 4 NPA accounts, in the financial year 2014-2015 it is increased to 110 accounts, in the financial year 2015-2016 to 2017-18 it is decreased to 4 accounts, 2 NPA accounts and 2 NPA accounts. It shows a positive sign for the bank.
- The total NPA accounts of the bank in the financial year 2013-2014 it is 9 NPA accounts, in the financial year 2014-2015 it is increased to 138 accounts, in the financial year 2015- 2016 it is decreased to 4 accounts, in the financial year 2016-2017 it is increased to 6 NPA accounts and in the financial year 2017-2018 it is 7 NPA accounts. This shows a fluctuation in the NPA accounts of the bank.
- The NPA provisions have been increased year by year. In the financial year 2013-2014 provisions stood at ₹ 90.40 lakhs, ₹ 100.40 lakhs in FY: 2014-2015, ₹ 106.33 lakhs in FY: 2015-16, ₹ 138.83 lakhs in FY : 2016-17 and in the financial year 2017-2018 it stood at ₹ 188.03 lakhs. It shows an increase in the provisions.
- The following are the recovery measures followed by the Sreenidhi Souharda Sahakari Bank Niyamitha:
 - ❖ The bank adopts the SARFAESI Act that is the Securitization and Re- Construction of Financial Assets and Enforcement of Security Interest Act. There is an authorized official who is Chief Manager of the Regional Office who has the power to enforce this act.

- ❖ When the EMI of the loan taken is not paid for 3 months i.e., 90days. It will become a Non-Performing Asset (NPA) for the bank. After 90 days of time the customer will be given 6 months as a grace period to repay the loan amount. If the customer pays half of the amount and unable to pay the other half of the amount the property which is kept for the security will be put for sale by bidding. The amount got by bidding the property is taken for the bank to clear the loan amount of the customer under the SARFASEI Act.

7. SUGGESTIONS

- The bank can follow the same NPA procedure as the NPA is being decreased as the provisions have increased.
- The bank has to check the credit worthiness of the customers in respect with the housing loans and long term business loans when approached.
- The loans has already sanctioned should be effectively monitored and supervised which may help in preventing borrower accounts becoming irregular.
- The bank has to adhere to the prudential norms prescribed by the RBI effectively.
- The bank should give ATM facility to its customers in near future.
- Online transactions and easy payment should be improved as it makes the customers for easy transactions.

8. CONCLUSION

The study on Non-Performing Assets with special reference to Sreenidhi Souharda Sahakari Bank Niyamitha was conducted, to find the reasons for the incidents of nonperforming assets and its effect on the bank. The findings, suggestions and conclusion of the study helped the corporation to properly manage its non-performing loans. The various loop holes under various heads in the study has to be taken care to come out of the current problems it is facing. In

this competitive world each and every financial mistake will lead to ultimate demise of the corporation and if properly managed will lead to better profitability, better market share and increase in the Good Will of the bank.

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