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## STUDY OF QUALITY OF WORK LIFE AMONG UNSKILLED WOMEN EMPLOYEES IN MYSURU DISTRICT

**M SHUBHANGINI**  
**RESEARCH SCHOLAR**  
**JSS RESEARCH FOUNDATION**  
**JSS TECHNICAL INSTITUTIONS CAMPUS, SJCE**  
**MYSURU**

**Dr. M PRABHU**  
**ASST PROFESSOR**  
**JSS COLLEGE FOR WOMENS**  
**KOLLEGALA(T), CHAMRAJNAGARA(D), KARNATAKA**

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**PROFESSOR & HOD**  
**JSS CENTRE FOR MANAGEMENT STUDIES**  
**SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING**  
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**ABSTRACT**

Women workers in organized sector are given less importance by the Government as well as private sectors. Women from the organized sector have high expectation from the government as it will provide some sort of benefits like incentives, special developments, health care, etc. lead to socio economic development of family. The previous studies carried out by earlier researchers was not included some required variables of quality of work life such as Job satisfaction, Job Security, facilities extended for skill development and health care facilities. The present research made an attempt to analyse the Quality of Work Life of Unskilled Women Employees in Organized Sector with special Reference to Mysuru District. The primary data was collected from 90 respondents in Mysore District with structured questionnaire. Apart from descriptive analysis of the demographic variables of the respondents, analysis of correlation and variance were applied to test the hypothesis. It is found from the study that work expectation and work satisfaction are related to each other and work expectation of the respondents is the same across different levels of designations. Workers expectation with reference to work culture and work environment remained the same among employees of different designations. It is also found that organisations should embark on and different facilities to different categories of employees.

**KEYWORDS**

women workers, work life, work expectation, job satisfaction, organized sectors.

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**1. INTRODUCTION**

Quality of work life (QWL) is concerned with creating a positive interaction between the physical and mental well beings of employees towards increased productivity. The Organisations have to maintain skilled employees to sustain the competitive market and required to treat the employees as an asset and not liability which is possible through the humanized job design process, known as Quality of Work Life. Focusing on improving QWL is required to enhance the contentment and job satisfaction of employees which can results to gain various advantages for employees and organization. Typical Corporates, NGOs and Governments across the world are striving to expand quality of work life and to improve health care services to employees working in organized sector. Women constitute the valuable human resources needed for the development of any country and contribution of women employees in the recent past is highly recognised in every sector of the economy. The study of QWL of women employees is very significant and worthwhile to take up research.

**2. STATEMENT OF THE PROBLEM**

Quality of Work Life of Women employees contributes to the organizational efficiency in general. It is also observed that it is true that the contribution is significant particularly in the organised sector. However, women workers in organized sector are given less importance both by Government and private sectors. Women employees expect more benefits like incentives, special developments, health care, etc. from the organized sectors in order to improve their socio-economic life. The organization may have to face challenges if there is high attrition and deliver inadequate quality services to organisation and customers, due to their job dissatisfaction. The organizations are now required to take appropriate steps to reinforce the positive behaviour amongst the employees, through identifying the factors lead to employee job satisfaction. Given this back ground, the present paper attempts to study the quality of work life of unskilled women employees in organised sectors.

**3. REVIEW OF LITERATURE**

**Richard Walton (1973)**<sup>1</sup>, describes that Quality of Work Life is the work culture that serves as the corner stone and opines that work culture of an organization should be recognized and to be improved to enhance the Quality of Work Life of organizations. **De (1976)**<sup>2</sup>, identified the Quality of work life as an indicator of how the society could be free from exploitation. Injustice, inequality, oppression and restrictions on the continuity of the growth of a individual. **Danna and Griffin (1999)**<sup>3</sup>, found that QWL not only includes work-based factors such as job satisfaction, salary benefits, inter & intra relationships with colleagues, but also factors that reflects life satisfaction and general feelings of well-being. **Gershuny (2001)**<sup>4</sup>, opined that a quality of work life leads to happiness and contentment whereas poor quality of work life contributes to ill-health, mental disturbance leading to depression as body and mind are correlated and leads to physical and mental

<sup>1</sup> Richard E. Walton 1973, "Quality of Working Life: What is it?" *Slogan Management Review*, Vol. 15, No. 1, pp. 11-21.

<sup>2</sup> As De 1976 Some Dimensions of Quality of Working Life, *Paper presented at National Seminar on Quality of Working Life*, Bombay, pp. 22-27.

<sup>3</sup> Danna & Griffin (1999) "Human Resource Management and Practices", Vol. 20, Issue 2, p.p.70.

<sup>4</sup> Gershuny. (2001), *changing times*, New York: Oxford University Press.

illness. The essence of quality of work life is a balance between work and leisure. Hoque and Rahman (1999)<sup>5</sup>, found that QWL is important for job performance, job satisfaction, labor turnover, labor management relations play a crucial role in determining the overall well-being of an organization. Further it is noted that workers of private sector textile mills perceived significantly higher QWL than the workers of the public sector textile mills. RadhaChebolu (2005)<sup>6</sup>, observed that the improvement of work place conditions of an organizations is testified in the terms of performance and the status of women in workplace is no longer discriminatory in Indian corporate sectors. Rama (2007)<sup>7</sup>, stated that, QWL refers the issue of repetition of legitimate interest or women workers in its entirety and also suggested the policy makers to improve the QWL of women workers, specifically in Banking, Insurance, PSV's and Hospitals. Jagadeesan. G (2008)<sup>8</sup>, states that working women have to contend with and overcome the social and mental barriers such as lack of proper education, lack of exposure to global business, social stigma and psychological inhibition. Rao & Medha Gore (2008)<sup>9</sup>, made an observation that nine to five rigid job structures and walking the tightrope of family and work related responsibilities made woman's life mechanized. Sumita Parmar (2010)<sup>10</sup>, observed that in contemporary times women are professionally qualified as the men and the incomes they earn are equally substantial and working hours as well as the work stress not less than the man's. Therefore, inevitably, the equations between them are changing along with the traditional roles they played.

#### 4. RESEARCH GAP

From the extensive literature it is noted that the previous researchers have not included the variables of quality of work life such as Job satisfaction, Job Security, facilities extended for skill development and health care facilities. Further, it is noted that there are only few studies were found on the QWL with reference to the Unskilled Women employees in organised sector especially in Mysuru District.

#### 5. NEED FOR THE STUDY

In the present study, the researcher has made an attempt to analyse the Quality of Work Life of Unskilled Women Employees in Organized Sector with special Reference to Mysuru District and to resolve the problems of unskilled women employees.

#### 6. RESEARCH QUESTIONS

- 1 What are the factors that influences QWL of unskilled women employees?
- 2 What are the issues and challenges related to maintenance of quality of work life of unskilled women employees?
- 3 How should quality of work life of unskilled women employees be measured and effective means to enhance it?

#### 7. OBJECTIVES OF THE STUDY

The study aims to achieve the following research objectives:

1. To study the factors influencing the QWL of unskilled women employees.
2. To study the challenges of unskilled women employees to maintain the quality of work life.
3. To study the relationship between work expectation, work satisfaction and quality of work life.

#### 8. HYPOTHESIS

*H<sub>1</sub>*: "There is no significant relationship between work expectation and designation of unskilled working women employees in organized sector".

*H<sub>2</sub>*: "There is no significant difference between work satisfaction and designation of unskilled working women employees in organized sector".

*H<sub>3</sub>*: "There is no significant relationship between work expectation and work satisfaction of unskilled working women employees in organized sector".

#### 9. RESEARCH DESIGN

The present empirical study is based on primary and secondary data. The primary data has been collected through structured questionnaire. Primary data include the respondents' socio-economic condition, quality of work life, job satisfaction, health condition, health status etc. Secondary data related to women workers engaged in different organized sectors and the other data are collected from Directorate of Economics and Statistics, Government of Karnataka.

**SAMPLE SIZE:** The sample is collected using cluster sampling method from different segment of the organized sector. The total population of the unskilled women employees in Mysuru District is 14, 131 of which 100 questionnaires were issued to the target group of unskilled women employees from all the seven taluks of the Mysuru district. After removing the incomplete questionnaire, 90 questionnaires were considered for analysis.

**TOOLS OF ANALYSIS:** apart from descriptive analysis of the demographic variables of the respondents, an analysis of variance and Bi- variate correlation were applied to test the hypothesis.

#### 10. DISCUSSION AND ANALYSIS

Quality of work life is a critical concept with having lots of importance in women employee's life. A high quality of work life and work life expectation are essential for all organizations to continue to attract and retain employee. This study attempted to find out the factors influencing the quality of work life of unskilled women employees in organized sectors. The Quality of Work Life of women employees in an organization has been assessed by opinions of employees on statements regarding quality of work life [QWL] aspects. If employees perceive an organization as offering a good quality of work in return for their contribution to an organization, then it is likely that employees will report higher levels of performance and work satisfaction. Employee satisfaction facilitates superior performance and also greater attraction and retention of the best employees, thereby enhancing the ability of the organization to deliver higher quality services. The present study examined the perception of the respondents to study the work expectation scores and work satisfaction scores. In the present study, only two variables-work expectation and work-satisfaction of the respondents were considered for analysis.

Table 1 shows the descriptive statistics of work expectation and work satisfaction scores pertaining to each of the designation considered under the study. Mean scores of the variables in each category of the designation has been registered almost equal weightage with more than 2 standard deviations. Similarly, job satisfaction scores are shown equal mean scores which indicate that the work expectation and work satisfaction are the same in each category of designations.

<sup>5</sup> Hoque, M.E. and Rahman, A. (1999) Quality of Working Life & Job Behaviour of workers in Bangladesh: A Comparative Study of Private and Public Sectors, Indian Journal of Industrial Relations, 35 (2), 175-184.

<sup>6</sup> Radha Chebolu (2005), "Women in the workplace", HRM Review, ICFAI Journal, September 2005, Page:11-19.

<sup>7</sup> Rama J. Joshi (2007) "Personal Management and Industrial Relations", 15<sup>th</sup> edition, Sultan Chand & Sons p. 88.

<sup>8</sup> Jagadeesan (2008), "Working Women – A Paradigm Shift", The ICFAI University Press, Pg. 3.

<sup>9</sup> Rao & Medha Gore (2008); "Women Entrepreneurs: Substance, Strength and Success", First Edition, The ICFAI University Press, Pg.No.6.

<sup>10</sup> Sumita Parmar (2010) "Accessing Empowerment: Contemporary Indian Women" paper published in book "Empowerment of Women – Emerging Dimensions Compiled by Krishna Gupta, S. Chand Publisher, Page 38.

TABLE 1: DESCRIPTIVE STATISTICS OF WORK EXPECTATION, WORK SATISFACTION AND DESIGNATION

Variables		N	Mean	Std. Deviation
Work Expectations total scores	Attender	27	54.63	3.341
	Peon	7	56.00	2.236
	Sweeper	24	52.79	3.659
	House keeping	26	55.00	2.953
	Gardeners	6	55.83	2.401
	Total	90	54.43	3.315
Work Satisfaction total scores	Attender	27	42.70	1.436
	Peon	7	42.57	1.718
	Sweeper	24	40.67	3.102
	House keeping	26	42.15	3.331
	Gardeners	6	42.67	.816
	Total	90	41.99	2.671

Table 2 exhibits the ANOVA of Work Expectation scores of unskilled women employees of the study area according to the designation they are working in. F value of work expectation scores is 2.501 at 0.05, the assumed level of significance. P value is close to 0.05 in for work expectation score, and F value of Work satisfaction scores is 2.283, P value is 0.067 which is more than 0.05 the assumed level of significance. Therefore, Null Hypothesis ( $H_0$ ) is rejected and hence it may be inferred that "There is no significant difference between work expectation and designation of unskilled working women employees in organized sector, further, the null Hypothesis ( $H_2$ ) "There is no significant difference between work satisfaction and designation of unskilled working women employees in organized sector is rejected and hence. It may be inferred that work expectation of employees of all the designations are the same. Similarly, the level of work satisfaction among the employees remains the same across designation. This indicates that the organizations need to focus on various aspects of work life quality enhancement strategy irrespective of the level of authority or the designation of women employees. This finding also replete that the management of the organized enterprises should maintain equal quality life enhancement facilities without bias. In most of the organizations, work efficiency depends on the coordination between different cadres and levels. Therefore, it is pertinent that the management looks after the quality work life of all the employees to maintain conducive working environment.

TABLE 2: ANOVA OF WORK EXPECTATION, WORK SATISFACTION AND DESIGNATION

		df	F	Sig.
Work Expectations total scores	Between Groups	4	2.501	.048
	Within Groups	85		
	Total	89		
Work Satisfaction total scores	Between Groups	4	2.283	.067
	Within Groups	85		
	Total	89		

In order to establish the relationship between work expectation and satisfaction, Pearson's correlation is calculated and presented in Table 3 below. The Table shows correlation value of 0.690 for two tailed test significance. The value of correlation is significant at 0.01 percent level. This indicates that null hypothesis ( $H_0$ ) is rejected and therefore there is no significant relation between work expectation and work satisfaction. It can be inferred from the results that work satisfaction depends on work expectation. If the work environment and work culture are up to the expectation of the women employees at work, the level of satisfaction in turn will improve. Work satisfaction among the employees improves performance of the employees, which is essential for the success and growth of the organization. This win-win situation is good for both the employer and the employees that contributes significantly to the economic growth of the country.

TABLE 3: CORRELATIONS BETWEEN WORK EXPECTATION AND WORK SATISFACTION

		Work Expectations total scores	Work Satisfaction total scores
Work Expectations total scores	Pearson Correlation	1	.690**
	Sig. (2-tailed)		.000
	N	90	90
Work Satisfaction total scores	Pearson Correlation	.690**	1
	Sig. (2-tailed)	.000	
	N	90	90

\*\* . Correlation is significant at the 0.01 level (2-tailed).

11. FINDINGS

This research work attempts to understand the factors influencing the quality of work life of unskilled women employees of organised sector in the study area. It is found from the study that work expectation and work satisfaction are related each other. Correlation value of 0.69 indicates that both the variables have moderately high correlation and can be inferred that both are correlated. It is also found from the study that work expectation of the respondents is the same across different designation. Workers expectation on the work culture and work environment does not vary between the designation and also found that the organisations should embark on similar strategy and facilities to different categories of employees.

The organizations should strive to establish a strong coordination among different groups of employees to display their dynamic and adoptive managerial policies to improve working environment, recognise the human needs at work, flexi time, concern for family and dependents, pay and facilities to keep employees focus more on the work rather than their inherent family problems hindering smooth functioning at work.

The present paper strongly recommends to train the employees in the areas such as time management, managing stress, physical and health related training to keep them healthy, personality development to control emotions and interpersonal relations among the workers. This would keep the unskilled employee's confidence and help them to have cordial relations between colleagues and have an intelligent plan to keep their dependents and family members bright and cool.

12. CONCLUSION

The dynamics of the work environment creates work pressure on working women as they need to cope with virtually two full time jobs – one at the office and the other at home. Review of literature related to the subject has revealed that unskilled working women experience greater difficulty in balancing work and family. The present paper encompasses on finding the factors influencing the quality of work life of women employees. From the study it is found that both the variables are moderately highly correlated. Moreover, the variables signify at various designation of the employees. Since different designation involve different work culture, the analysis of the variables is necessary from the view point that the success of any Organisation needs link and cohesiveness among the different levels of employees.

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**AN EMPIRICAL STUDY ON MOBILE BANKING IN COIMBATORE DISTRICT**

**Dr. P.ANANDA MURUGAN**  
**HEAD**  
**DEPARTMENT OF COMMERCE**  
**TERF'S ACADEMY**  
**TIRUPUR**

**M.SUMATHI**  
**RESEARCH SCHOLAR**  
**TERF's ACADEMY**  
**TIRUPUR**

**ABSTRACT**

*Technology plays an important role in banking sector. Banking is one of the largest financial institutions constantly explores the opportunity of technology enabled services to provide better customer experiences and conveniences. Mobile banking (also known as M-banking, SMS banking) is a term used for performing balance checks, account transactions, payments etc. via a mobile device such as mobile phone. The increased prevalence of mobile phones provides exciting opportunities for the growth of mobile banking (m-banking). These papers are classified into five main categories: m-banking overview and conceptual issues, Features & Benefits of Mobile Banking, Current operating practices of commercial banks, Mobile banking/payment practices in Indian Commercial Banks and Challenges in India strategic, legal and ethical issues.*

**KEYWORDS**

Coimbatore district, mobile banking.

**JEL CODE**

G21

**1. INTRODUCTION**

**B**anking industry is driven by the technological innovation, market uncertainty and competition. There has been a rapid shift from traditional banking to electronic banking. Competitive banks make significant investments in adopting new technology to align business strategies, enable innovative functional operations and provide extended customer services. The term mobile refers to "applications, which are designed for users on the move". Mobile device is commonly known as cell phone and users commonly use it for communication and as a wireless delivery channel. Mobile banking is also known as m-banking. Mobile banking is defined as "a form of banking transaction carried out via a mobile phone".

Today, financial sector firms are competing to increase their profit share in the market. Among these firms, banks have radically shifted from traditional banking to branchless mode of banking. The development of new technologies has profoundly changed the way in which the customers interact with the service providers. Traditionally, the distribution of services in the retail banking industry largely meant customers having to visit a physical branch to access any financial services. Today, the situation has changed. The opportunity to avoid queuing at the Automated Teller Machine (ATM) was perceived an important factor in electronic banking. Technology has become an increasingly vital element in the competitive landscape of the financial service industry. The improved network bandwidth and wireless application technologies have created opportunities for wider deployment and usage of mobile commerce services.

Mobile Banking (MB) refers to the use of a mobile phone or other wireless devices to perform banking activities while away from home, such as monitoring account balances, transferring funds between accounts, bill payment and locating an ATM. Despite many wireless commercial services increasing quickly, the use of mobile banking service is much lower than expected and still underused, and the market of mobile banking still remains very small in comparing to the whole banking transactions. That is, the widespread adoption and large usage of cell phones did not reflect on the adoption and usage of mobile banking, although mobile banking perhaps was the first commercial mobile service. Both Internet banking and mobile banking are often considered as electronic banking, but Internet banking and mobile banking are two alternative channels for banks to deliver their services and for customers to acquire services. That is, customers using Internet banking are through computers connected to Internet, while customers using mobile banking are through wireless devices.

**2. STATEMENT OF THE PROBLEM**

The study has focused on the reluctant of banking customers to adopt mobile banking services. The customers are refraining to use these technologically advanced services partly because of lack of awareness and partly due to other concerns like security threats, reliability, device functionality, etc. The behavioural intention of the users is mainly influenced by the perceived ease of use. The users would not use mobile banking when they perceive it to be difficult to use, even if it may be useful for their work. There is certain other customer enrolment related issues like mobile number registration, M-PIN related problems, security related concerns and technical issues faced by the customers are inhibiting the adoption of mobile banking services. The loyalty of mobile banking customers was easily affected by the satisfaction from mobile banking services. Where, the satisfactions of the customers are affected by tendency to trust, convenience, requirements (e.g. guidance to know the procedures) and acceptance of new technology. The study has covered all the above problems and how to overcome those barriers.

**3. SCOPE OF THE STUDY**

Mobile banking is a provision made by the bankers and availing of the banking and financial services to the customers with the help of mobile telecommunication devices. The study helps to identify and to overcome the problems that are faced by the customers in adopting mobile banking services like lack of awareness, technical issues, ease of use, reliability, security threats, adopting new technology, trust and some other customer related issues.

The study focuses on the awareness level among the customers about mobile banking services and also how beneficial it is to them. The study also focuses on various factors like perceived usefulness, time saving, performance, affordable services, perceived ease of use, etc., that helps the customers in making decisions to adopt mobile banking services. It has examining the level of satisfaction among the customers in acceptance of mobile banking services. It also provides an opportunity to know whether the mobile banking has potential expand in future.

**4. OBJECTIVES OF THE STUDY**

The following have been the objectives of the study:

1. To study the degree of awareness among customers towards mobile banking features.
2. To determine the factors that motivates the customers to use mobile banking services; and
3. To analyse the response of the customers and their satisfaction on mobile banking.

## 5. METHODOLOGY OF THE STUDY

In this research, An Empirical study of mobile banking in Coimbatore city has been obtained from the respondents who are residing in the Coimbatore city.

### A. Sources of Data

Both primary and secondary data have been used in the study:

#### ▪ Primary Data

Primary data has been collected from customers by administering a questionnaire.

#### ▪ Secondary Data

Secondary data has been collected from various journals, books and magazines.

### B. Sample Section

Sample has been selected at random based on the mobile banking services.

### C. Sampling Technique

Convenient Random sampling method has been adopted to collect the data with structured questionnaires.

### D. Sample Size

A total of 120 respondents have been considered for the study of mobile banking service.

### E. Tools Used

The following statistical tools have been used to analyse the primary data collected

- Simple Percentage Analysis
- Descriptive analysis
- ANOVA
- t-Test

### F. Period of the Study

The period considered for the study is from July 2017-September 2017.

## 6. LIMITATIONS OF THE STUDY

The following are the limitations of the study:

- The study is restricted to Coimbatore City.
- The research is done on the basis of only 120 samples. The results of customer's perception and expectation cannot be generalized.

## 7. REVIEW OF LITERATURE

**Dr. S. Sudalai Muthu and B. Angamuthu (2011)** had proposed a study entitled "Influencing factors on adoption of mobile banking technology by bankers of India". Objective of their study was to explore the influencing factors on adoption of mobile banking technology by the bankers and to comparison of adoption factors of mobile banking technology between the bankers. Regarding collection of primary data, questionnaire was distributed based on proper sampling method to 500 respondents out of which 365 respondents returned the properly filled questionnaire. Secondary data were collected from books, journals, various online-free journals, websites, etc. Various statistical tools like factor analysis, independent sample t-test, correlation, regression and Kendall's W test were used to present the analysis. The study found that technical infrastructure, service to unbanked centre, cost of doing bank services, customer awareness, crowd at the bank counters, reduce the number of employees, building customer's trust, financial support and perceived relative advantage. Among them all factors (except reduce number of employees and building customer trust) highly influenced to adoption of mobile banking by the bankers of India.

**N.Yesodhadevi, J. Nancysebastina, and V.S. Kanchana (2011)** had proposed a study entitled "A study on customers awareness, opinion, reason for opting mobile banking". Objective of their study was to analyze the reason for preferring phone/ mobile banking, to identify the awareness of phone/mobile banking services and how frequently it is used by the respondents and to find the opinion of the respondents regarding the various problems of phone/mobile banking. Study was based on primary data of collected from 249 respondents by means of a questionnaire. Random sampling technique was applied and statistical tools like percentage analysis, ANOVA and T-test, Kendall's coefficient of concordance was carried out. Based on their study they gave suggestion such as, the awareness about phone/mobile banking has to be given before or once the technology is launched, Proper security services should be provided because that is the main reason for not adopting this technology and the processing should be still simplified. Further it is concluded that there is no significant difference among education groups and monthly income groups, in the average awareness score on phone/mobile banking usage.

## 8. OVERVIEW OF THE STUDY

### 8.1 BANKING

A bank is a financial institution that accepts deposits from the public and creates credit. Lending activities can be performed either directly or indirectly through capital markets. Due to their importance in the financial stability of a country, banks are regulated in most countries.

The word bank was borrowed in Middle English from Middle French banque, from Old Italian banca, meaning "table", from Old High German banc, bank - "bench or counter". Benches were used as makeshift desks or exchange counters during the Renaissance by Jewish Florentine bankers, who used to make their transactions atop desks covered by green tablecloths.

Banks act as payment agents by checking the current accounts of the customers, paying cheques drawn by customers in the bank, and collecting cheques deposited to customers' current accounts. Banks also enable customer payments via other payment methods such as Automated Clearing House (ACH), Wire transfers or telegraphic transfer, EFTPOS, and automated teller machines (ATMs).

Banks borrow money by accepting funds deposited on current accounts, by accepting term deposits, and by issuing debt securities such as bank notes and bonds. Banks lend money by making advances to customers on current accounts, by making instalment loans, and by investing in marketable debt securities and other forms of money lending.

Banks provide different payment services, and a bank account is considered indispensable by most businesses and individuals. Non-banks that provide payment services such as remittance companies are normally not considered as an adequate substitute for a bank account.

Banks can create new money when they make a loan. New loans throughout the banking system generate new deposits elsewhere in the system. The money supply is usually increased by the act of lending, and reduced when loans are repaid faster than new ones are generated.

### 8.2 RANGE OF ACTIVITIES

Activities undertaken by banks include personal banking, corporate banking, investment banking, private banking, transaction banking, insurance, consumer finance, foreign exchange trading, commodity trading, trading in equities, futures and options trading and money market trading.

Banks offer many different channels to access their banking and other services:

- Automated teller machines
- A branch in a retail location
- Call centre
- Mail: most banks accept cheque deposits via mail and use mail to communicate to their customers, e.g. by sending out statements
- Mobile banking is a method of using one's mobile phone to conduct banking transactions
- Online banking is a term used for performing multiple transactions, payments etc. over the Internet
- Relationship managers, mostly for private banking or business banking, often visiting customers at their homes or businesses

- Telephone banking is a service which allows its customers to conduct transactions over the telephone with automated attendant, or when requested, with telephone operator
- Video banking is a term used for performing banking transactions or professional banking consultations via a remote video and audio connection. Video banking can be performed via purpose built banking transaction machines (similar to an Automated teller machine), or via a video conference enabled bank branch clarification
- DSA is a Direct Selling Agent, who works for the bank based on a contract. Its main job is to increase the customer base for the bank.

### 8.3 BUSINESS MODELS

A bank can generate revenue in a variety of different ways including interest, transaction fees and financial advice. Traditionally, the most significant method is via charging interest on the capital it lends out to customers. The bank profits from the difference between the level of interest it pays for deposits and other sources of funds, and the level of interest it charges in its lending activities.

This difference is referred to as the spread between the cost of funds and the loan interest rate. Historically, profitability from lending activities has been cyclical and dependent on the needs and strengths of loan customers and the stage of the economic cycle. Fees and financial advice constitute a more stable revenue stream and banks have therefore placed more emphasis on these revenue lines to smooth their financial performance.

### 8.4 ONLINE BANKING

The Indian banking industry had become an important tool to facilitate the development of the Indian economy. At the same time, it had emerged as a large employer, and a debate had ensued about the nationalization of the banking industry. The IT revolution has had a great impact on the Indian banking system. The use of computers has led to the introduction of online banking in India. The use of computers in the banking sector in India has increased many folds after the economic liberalization of 1991 as the country's banking sector has been exposed to the world's market. There are some advantages on using e-banking both for banks and customers: Permanent access to the bank, Lower transaction costs / general cost reductions, Access anywhere using mobile or computer, less time consuming, very safe and secure method, helps to transfer the money immediately & accurately and Ease to use. Security of a customer's financial information is very important, without which the online banking could not operate. Similarly, the reputational risks to the banks themselves are important. Financial institutions have set up various security processes to reduce the risk of unauthorized online access to a customer's records, but there is no consistency to the various approaches adopted.

### 8.5 MOBILE BANKING

Banking Regulation Act of India, 1949 defines Banking as "accepting, for the purpose of lending or investment of deposits of money from the public, repayable on demanded withdrawal by cheques, draft, order or otherwise". The Banking industry comprises of segments that provide financial assistance and advisory services to its customers by means of varied functions such as commercial banking, wholesale banking, personal banking, internet banking, mobile banking, credit unions, investment banking and the like. With years, banks are also adding services to their customers.

The Indian banking industry is passing through a phase of customer's market. The customers have more choices in choosing their banks. A competition has been established within the banks operating in India. With stiff competition and advancement of technology, the services provided by banks have become more easy and convenient.

Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct transactions remotely using a mobile device such as a Smartphone or tablet. Unlike the related internet banking it uses software, usually called an app, provided by the financial institution for the purpose. Mobile banking is usually available on a 24-hour basis. Mobile banking differs from mobile payments, which involves the use of a mobile device to pay for goods or services either at a point of sale or remotely, analogously to the use of a debit or credit card to effect an EFTPOS payment.

Banking and financial services can now be reached a much larger section of the society, including the financially excluded through the medium of mobile phones. Transactions using mobile phones are far less expensive than its traditional alternatives. Mobile network operators like Vodafone, MTNL, Airtel, Aircel and orange have deployed mobile payment services in several countries and have set up joint ventures between them like Iris in US or project Oscar in UK. Money transfer operators like Western Union and Money Gram, as well as card companies like VISA, Master Card and Amex all have made multiple mobile payment initiatives. Payment service providers like PayPal are throwing their full concentration into mobile banking. E-commerce companies are developing wallets for cashless payment using NFC (Near Field Communications).

Technology has the potential to address the issues of outreach and credit delivery in rural and remote areas through the intensive and extensive use of Information and Communications Technology (ICT). By such use of ICT, it is possible to provide doorstep banking services, where the accounts can be operated by even uneducated customers by using biometrics and mobile phones.

### 8.6 MOBILE BANKING ORIGIN

In 1990's the banking sector in India saw greater Emphasis being placed on technology and innovation. Banks began to use technology to provide better quality service to their customers and at greater speed. Technology advancement allowed them to offer services like internet banking and mobile banking. Internet technology has brought the third revolution to this world. The banking sector has been upgrading their services with the use of technology from time to time like introducing the ATM-Automated teller machine which took more than a decade to get popular and the phone and net banking took half the time of ATM for banks, it can provide a cost effective way of conducting business and enriching relationship with customers by offering superior services, and innovative products which may be customized to individual needs. For customers it can provide a greater choice in terms of the channels they can use to conduct their business, and convenience in terms of when and where they can use e-banking.

Over the last decade India has been one of the fastest adopters of information technology, particularly because of its capability to provide software solution to organizations around the world. This capability has provided a tremendous impetus to the domestic banking industry in India to deploy the latest in technology, particularly in the Internet banking and e-commerce areas. The mobile banking is considered as the provision of banking services to the customers on their mobile phones and other mobile devices. With the quick growth in the market of 3G&4G smart phones, the wireless delivery channel becomes a promising alternative for banks to create great distributive channels for their services. Mostly, mobile banking is used for operation of the banks there are various types of activities that can be done through. The process of using mobile banking is very easy and everybody can use it. Mobile banking comes into the picture to address the basic limitation of Internet banking.

Now mobile banking has given the traditional banking a newer look "Anywhere Banking". You don't need a PC or Laptops with internet connectivity; just you need your cell phone with you. The biggest advantage Mobile Banking provides to the banks is that it helps to cut down the costs as it's even more economic than providing tele-banking facilities where banks have to keep hundreds of tele callers. Additionally, mobile banking helps banks to upgrade the quality of services and nature of customer relationship management. The main reason behind this success is the numerous benefits it can provide, both to the banks and to customers of financial services. For banks, it can provide a cost effective way of conducting business and enriching relationship with customers by offering superior services, and innovative products which may be customized to individual needs. One critical problem was left behind in banking sector i.e. Queue, yes a daily long waiting line of the customer to be served in a common custom to see in banks. But long waiting line in banks is most annoying thing being the public's most important units.

Mobile banking services in India started with SMS banking way back in 2002. With an increasing mobile subscriber base in India, mobile banking has picked up steam in recent years. Today more than half the population in India has a mobile phone. However, less than 1% of that uses mobile phone as a medium for banking. Though mobile banking is synonymous with the word convenience banking, its usage is not anywhere close to its potential. With the advent of smart phones and ever growing usage of internet on mobile handsets, application based banking has emerged as a new concept within this space. Other than SMS banking, banks are now offering banking services on mobile handsets through WAP-based internet websites and application based mobile banking services (Mehta, 2012).

An Online Banking user is expected to perform transactions online such as Checking account balance and transaction history, paying bills, transferring funds between accounts, requesting credit card advances, ordering checks, managing investments and stocks trading. Most banking before 2010 was most often performed via SMS or the mobile web. Apple initial success with iPhone and the rapid growth of phones based on Google's android (operating system) have led to

increasing use of special mobile apps, downloaded the mobile device. Mobile banking is not just about providing bank customers with real, anytime/anywhere banking and substantially decreasing service costs. It makes communication point-to-point paving the way to high service. From the customers' perspective, Online Banking provides a convenient and effective way to manage finances that is easily accessible 24 hours a day, seven days a week. In addition, information is up to date. Nevertheless, Online Banking has disadvantages for banks like how to work the technology, set-up cost, legal issues, and lack of personal contact with customers. And for customers there are security and privacy issues.

### 8.7 MOBILE BANKING SERVICES

Typical mobile banking services may include:

#### Account information

1. Mini-statements and checking of account history
2. Alerts on account activity or passing of set thresholds
3. Monitoring of term deposits
4. Access to loan statements
5. Access to card statements
6. Mutual funds / equity statements
7. Insurance policy management

#### Transactions

1. Funds transfers between the customer's linked accounts
2. Paying third parties, including bill payments and third party fund transfers(see, e.g., FAST)
3. Check Remote Deposit

#### Investments

1. Portfolio management services
2. Real-time stock quotes
3. Personalized alerts and notifications on security prices

#### Support

1. Status of requests for credit, including mortgage approval, and insurance coverage
2. Check (cheque) book and card requests
3. Exchange of data messages and email, including complaint submission and tracking
4. ATM Location

#### Content services

1. General information such as weather updates, news
2. Loyalty-related offers.
3. Location-based services.

Mobile banking is the performing of finance related functions on a mobile device like a Smartphone or tablet. With the use of a mobile device, the user can perform mobile banking via call, text, website, or app.

### 8.8 BANKS THAT PROVIDE MOBILE BANKING SERVICES AND THEIR APPLICATIONS

SBI Anywhere Personal (State Bank of India), HDFC Bank Mobile Banking (HDFC Bank), SBI Quick (State Bank of India), Axis Mobile (Axis Bank Ltd.), imobile by ICICI Bank (ICICI Bank Ltd.), M-Connect Plus (Bank of Baroda), UCO mBanking (UCO Bank), Karur Vysya Bank (The Karur Vysya Bank Ltd.), IndPay (Indian Bank), IOB Mobile (Indian Overseas Bank), IndusMobile (IndusInd Bank Ltd.), CUB MOBILE BANKING PLUS (City Union Bank) and much more.

## 9. ANALYSIS AND INTERPRETATION

The analysis and interpretation of the study on "An empirical study on mobile banking in Coimbatore city" is based on a sample size of 120 respondents from Coimbatore city. The collected facts have been categorized, tabulated and the following statistical measure has been employed in executing the objectives of the study.

- Percentage analysis
- Descriptive statistics
- ANOVA
- t-TEST

### PERCENTAGE ANALYSIS

Percentage analysis is carried out for all the questions specified in the questionnaire. This analysis illustrated the classification of the respondents falling under each category. The percentage analysis is used mainly for standardization and comparison.

**TABLE 1: GENDER OF THE RESPONDENTS**

Gender	No. of respondents	Per cent
<b>Male</b>	<b>63</b>	<b>52.5</b>
Female	57	47.5
<b>Total</b>	<b>120</b>	<b>100.0</b>

(Source: Primary data)

It has been inferred from the table 4.1 that, 52.5 per cent of the respondents are male and 47.5 per cent of them are female.

Hence, most of the respondents are male.

**TABLE 2: MARITAL STATUS OF THE RESPONDENTS**

Marital status	No. of respondents	Per cent
<b>Unmarried</b>	<b>74</b>	<b>61.7</b>
Married	46	38.3
<b>Total</b>	<b>120</b>	<b>100.0</b>

(Source: Primary data)

It has been inferred from the table 4.3 that, 61.7 per cent of the respondents are unmarried and 38.3 per cent of them are married.

Hence, it has been found that most number of respondents are unmarried.



**TABLE 3: EDUCATIONAL QUALIFICATION OF THE RESPONDENTS**

Educational qualification	No. of respondents	Per cent
School level	13	10.8
<b>Under Graduation</b>	<b>70</b>	<b>58.3</b>
Post-Graduation	28	23.3
Professional level	9	7.5
<b>Total</b>	<b>120</b>	<b>100.0</b>

(Source: Primary data)

It has been inferred from the table 4.4 that, 58.3 per cent of the respondents are Under Graduates, 23.3 per cent of them are Post Graduates, 10.8 per cent are school levels and 7.5 per cent of them are professionals.

Hence, it has been found that most number of respondents are Under Graduates.

**TABLE 4: MONTHLY INCOME OF THE RESPONDENTS**

Monthly income	No. of respondents	Per cent
Below Rs.20000	41	34.2
<b>Rs.20000-Rs.40000</b>	<b>42</b>	<b>35.0</b>
Rs.40000-Rs.60000	19	15.8
Above Rs.60000	18	15.0
<b>Total</b>	<b>120</b>	<b>100.0</b>

(Source: Primary data)

It has been inferred from the table 4.6 that, 35.0 per cent of the respondents are earning a monthly income of Rs.20000 – Rs.40000, 34.2 per cent of them are earning below Rs.20000, 15.8 per cent of them are earning Rs.40000 – Rs.60000 and 15.0 per cent of the respondents are earning above Rs. 60000.

Hence, it has been found that more number of respondents' monthly income is between Rs.20000 – Rs.40000.

**TABLE 5: REASON FOR USING MOBILE BANKING SERVICES**

Reasons	No. of respondents	Per cent
Checking balance	20	16.7
Checking balance and fund transfer	3	2.5
Checking balance, fund transfer and bill payment	2	1.7
Checking balance, fund transfer, bill payment, trading, mobile recharge and others	1	.8
Checking balance, fund transfer, bill payment and mobile recharge	4	3.3
Checking balance, fund transfer and mobile recharge	3	2.5
Checking balance and bill payment	1	.8
Checking balance, bill payment and trading	1	.8
Checking balance, bill payment and mobile recharge	5	4.2
Checking balance and mobile recharge	1	.8
Fund transfer	20	16.7
Fund transfer and bill payment	1	.8
Fund transfer, bill payment and mobile recharge	1	.8
Fund transfer and mobile recharge	4	3.3
<b>Bill payment</b>	<b>21</b>	<b>17.5</b>
Bill payment, trading and others	1	.8
Checking balance and others	1	.8
Trading	7	5.8
<b>Mobile recharge</b>	<b>21</b>	<b>17.5</b>
Others	2	1.7
<b>Total</b>	<b>120</b>	<b>100.0</b>

(Source: Primary data)

It has been clear from the table 4.7 that, 17.5 per cent of the respondents use mobile banking for bill payment, 17.5 per cent use for mobile recharge, 16.7 per cent of the respondents use for checking balance and funds transfer, 5.8 per cent for trading, 4.2 per cent of them use the services like Checking balance, bill payment and mobile recharge, 3.3 per cent of them use the services like Checking balance, fund transfer, bill payment and mobile recharge, 3.3 per cent use for the service like Fund transfer and mobile recharge, 2.5 per cent of them use for the service like Checking balance and fund transfer, 2.5 per cent use for the services like Checking balance, fund transfer and mobile recharge, 1.7 per cent of them are using the service like Checking balance, fund transfer and bill payment, 1.7 per cent use other services, 0.8 per cent of the respondents use all services, 0.8 per cent use the services like Checking balance and bill payment, 0.8 per cent use the services like Checking balance and mobile recharge, 0.8 per cent of them use the services like Fund transfer and bill payment, 0.8 per cent use the services like Checking balance and others, 0.8 per cent of the respondents use the services like Checking balance, bill payment and trading, 0.8 per cent of them use the services like Fund transfer, bill payment and mobile recharge and 0.8 per cent use the services like Bill payment, trading and others.

Hence, it has been found that more number of respondents use mobile banking for bill payment and mobile recharge.

**DESCRIPTIVE STATISTICS**

Descriptive statistics is used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

TABLE 6: FACTORS MOTIVATED TO PREFER MOBILE BANKING

	N	Minimum	Maximum	Mean	Std. Deviation
Security concern/risky	120	1	5	3.95	.942
Privacy	120	1	5	4.07	.837
Reliability	120	2	5	3.83	.843
Cost	120	2	5	3.98	.902
Perceived usefulness	120	1	5	3.81	.882
Perceived ease of use	120	1	5	3.94	.973
Time saving	120	1	5	4.39	.901
Performance	120	1	5	3.91	.889
Convenient service	120	2	5	3.97	.970
Affordable service	120	1	5	3.85	.958

(Source: Computed)

A five-point rating scale ranging from 1 to 5 where 1 for strongly agree, 2 for agree, 3 for neutral, 4 for disagree and 5 for strongly disagree has been constructed to obtain the opinion of the respondents on factors motivated to prefer mobile banking services. From the mean ratings computed based upon the response of the respondents it is evident that most of them have agreed that most of the factors motivated to prefer mobile banking services namely, 'time saving' (mean 4.39), 'privacy' (mean 4.07), 'cost' (mean 3.98), 'convenient' (mean 3.97), 'security concern /risky' (mean 3.95), 'perceived ease of use' (mean 3.94), 'performance' (mean 3.91), 'affordable' (mean 3.85), 'reliability' (mean 3.83), 'perceived usefulness' (mean 3.81).

Therefore, based on the high mean rating it has been concluded that most of the respondents have agreed that most factors motivated them to prefer mobile banking services.

**ANOVA**

ANOVA has been used to examine whether there has been significant variation between respondents' 'demographic and banking related variables' and their 'Awareness on features of banking services'. Awareness scores about the features of mobile banking services have been found by adding the ratings given by the respondents for the statements relating to mobile banking services. Higher the score more is the agreeability on the statements. The mean scores have been compared with the independent variables – demographic and banking related factors, to know the level of variance in the awareness of the respondents classified under different categories.

TABLE 7: AWARENESS SCORES ON FEATURES OF MOBILE BANKING VS. DEMOGRAPHIC AND BANKING RELATED VARIABLES

		Awareness scores on mobile banking features			Table Value	F	Sig.
		Mean	SD	No.			
Age	0-20	3.5781	.49908	32	3.07	1.449	NS
	20-40	3.7641	.53917	65			
	40-60	3.7681	.55673	23			
	60 and above						
Educational Qualification	Up to school level	3.5513	.66453	13	2.68	1.413	NS
	Graduation	3.6833	.47153	70			
	Post-graduation	3.7857	.61840	28			
	Professional level	3.9815	.47467	9			
Occupational Status	Student	3.6282	.47785	52	2.68	1.772	NS
	Employed	3.8082	.57401	53			
	Unemployed	3.4000	.30277	5			
	Others	3.8333	.60858	10			
Monthly income	Below Rs. 20,000	3.5610	.47691	41	2.68	2.916	S*
	Rs. 20,000-Rs. 40,000	3.7460	.54005	42			
	Rs. 40,000-Rs. 60,000	3.7193	.55847	19			
	Above Rs. 60,000	3.9907	.53770	18			
Level of Mobile Banking service	High	4.0054	.54515	31	4.78	7.481	S**
	Moderate	3.6321	.46829	82			
	Low	3.4048	.75680	7			
Importance of Mobile Banking to our society	Yes	3.8101	.50969	79	3.07	3.955	S*
	No	3.5972	.47385	12			
	Not sure	3.5057	.56954	29			
Overall Mobile Banking experience	Very good	4.2500	.43141	6	3.94	5.485	S**
	Good	3.7662	.49144	72			
	Neutral	3.6204	.49539	36			
	Poor	3.1389	.78469	6			
	Very poor						
Potential of Mobile Banking to expand in future	Yes	3.7329	.56004		3.07	.273	NS
	No	3.6111	.57001				
	Not sure	3.7067	.43376				

(Source: Computed)

Notes: NS-Not Significant      S\*\* – Significant at 1% level      S\* - Significant at 5% level

H<sub>0</sub>: There has been no significant difference in the awareness scores about the features of mobile banking services given by the respondents classified based upon the demographic and banking related variables namely, age, educational qualification, monthly income of the family, Level of Mobile Banking service, Importance of Mobile Banking to our society, Overall Mobile Banking experience and Potential to expand Mobile Banking in future.

The null hypothesis has been tested for each of the personal and banking related variables separately and are presented in the table 1.

**Age**

The F-ratio value has shown that there is no significant difference in the respondents' level of awareness on the features of mobile banking services when they have been classified based on their age, thereby, accepting the null hypothesis.

**Educational Qualification**

It has been concluded with the F-ratio value that there is no significant difference in the mean awareness scores which proves that the respondents' level of awareness about features of mobile banking services do not vary based on their educational qualification. Hence, the null hypothesis has been accepted with respect to 'educational qualification'.

**Occupational Status**

It has been clear with the F-ratio value that there is no significant difference in the respondents' level of awareness on features of mobile banking services when they have been classified based on their occupational status. Hence, the null hypothesis has been accepted with respect to occupational status.

**Monthly income**

The value of F-ratio shows that there is a significant difference in the respondents' level of awareness on the features of mobile banking when they have been classified on the basis of monthly income of the respondent, thereby, rejecting the null hypothesis at 5 per cent level of significance.

**Level of Mobile banking service**

The F-ratio value suggests that there has been a significant variation in the level of awareness on the features of mobile banking services when the respondents have been classified based on their level of mobile banking service provided by their bank, thereby, rejecting the null hypothesis at 1 per cent level of significance.

**Importance of Mobile banking to our society**

The value of F-ratio shows that there is a significant difference in the respondents' level of awareness on the features of mobile banking when they have been classified on the basis of their response to the importance of mobile banking to our society, thereby, rejecting the null hypothesis at 5 per cent level of significance.

**Overall Mobile Banking experience**

It has been concluded with the F-ratio value that there is a significant difference in the mean awareness scores which proves that the respondents' level of awareness about features of mobile banking services vary based on their overall mobile banking experience. Hence, the null hypothesis has been rejected with 1 per cent level of significance.

**t-TEST**

t-Test has been used for judging whether there is any significant difference between the means of two samples.

**TABLE 8: SATISFACTION ON FACTORS MOTIVATED TO PREFER MOBILE BANKING Vs. DEMOGRAPHIC VARIABLES**

		Satisfaction on factors motivated to prefer mobile banking			Table value	T	Sig.
		Mean	SD	No.			
Gender	Male	3.9873	.47332	63	1.64	.465	NS
	Female	3.9491	.42136	57			
Marital Status	Single	3.9541	.40517	74	1.64	.467	NS
	Married	3.9935	.51312	46			
Prefer Mobile banking than internet banking	Yes	4.0000	.44769	48	1.64	.614	NS
	No	3.9486	.45004	72			
Mobile banking suit your life style	Yes	4.0584	.38374	101	2.32	5.648	S**
	No	3.4947	.47548	19			
Total		3.9232	.44624	60			

(Source: Completed)

Notes: NS-Not significant S\*\*-significant at 1% level

H<sub>0</sub>: There is no significant difference in the motivation scores about factors of mobile banking services namely gender, marital status, prefer mobile banking than internet banking and mobile banking suit your life style by the respondents classified based on factors motivated you to prefer mobile banking:

**Gender**

The t value suggests that there is no significant difference in the respondents' motivation based on the factors of mobile banking services when they are classified based on their gender. Thus, the null hypothesis has been accepted with respect to the factor 'gender'.

**Marital status**

The t value suggests that there is no significant difference in the respondents' level of satisfaction about mobile banking features when they are classified based on their marital status. Thus, the null hypothesis has been accepted with respect to the factor 'marital status'

**Prefer Mobile banking than internet banking**

The t-Test value has no significant difference in the respondents' level of satisfaction about mobile banking features when they are classified based on prefer mobile banking than internet banking. Thus, the null hypothesis has been accepted with respect to the factor of 'Prefer mobile banking than internet banking'.

**Mobile banking suit your life style**

The t value suggests that there is significant difference in the respondent's level of satisfaction about mobile banking features when they are classified based on their 'mobile banking suit your life style'. Hence, the null hypothesis has been rejected with 1 per cent level of significance.

**10. FINDINGS, SUGGESTIONS AND CONCLUSION**

**10.1 FINDINGS**

This chapter gives the summary of findings about "An empirical study on mobile banking in Coimbatore city". Following are the inferences derived from the analysis.

**PERCENTAGE ANALYSIS**

The results of the percentage analysis have been presented in following necessitate aspects:

- 52.5% of the respondents are male.
- 54.2% of the respondents are between 20 – 40 years.
- 61.7% of the respondents are unmarried.
- 58.3% of the respondents are Under Graduates.
- 44.2% of the respondents are employed.
- 35.0% of the respondents' monthly income is between Rs. 20,000 – Rs. 40,000.
- 17.5% of the respondents agree that bill payment and mobile recharge services are the reason for using mobile banking.
- 68.3% of the respondents agree that levels of mobile banking services provided by banks are moderate.
- 60% of the respondents prefer internet banking than mobile banking.
- 65.8% of the respondents agree that mobile banking is important to our society.
- 60.0% of the respondents have good experience in overall mobile banking services.
- 84.2% of the respondents agree that mobile banking suits their life style.
- 69.2% of the respondents agree that mobile banking have potentiality to expand in future.

**DESCRIPTIVE STATISTICS**

- Most of the respondents have been aware of the mobile banking features offered.
- Most of the respondents have agreed that most of the factors motivated them to prefer mobile banking services.
- Most of the respondents have been satisfied with all mobile banking services offered.
- Most of the respondents rarely have problems on mobile banking services.

**ANOVA**

- Respondents' level of awareness on the features of mobile banking services has not varied at significant levels when they have been classified based on age, educational qualification, occupational status and potentiality of mobile banking to expand in future. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on the monthly income, level of mobile banking services provided by their bank, importance of mobile banking to our society and overall mobile banking experience there has been a significant variation, thereby, rejecting the null hypothesis.
- Factors that motivate the respondents to use mobile banking services has not varied at significant levels when they have been classified based on educational qualification, occupational status and monthly income. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on the age, level of mobile banking services provided by their bank, importance of mobile banking to our society, overall mobile banking experience and potentiality of mobile banking to expand in future there has been a significant variation, thereby, rejecting the null hypothesis.
- Respondents' level of satisfaction on technology usage of mobile banking services has not varied at significant levels when they have been classified based on age, educational qualification, occupational status, monthly income, level of mobile banking services provided by their bank and potentiality of mobile banking to expand in future. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on the importance of mobile banking to our society and overall mobile banking experience there has been a significant variation, thereby, rejecting the null hypothesis.
- Respondents' level of problems on technology usage of mobile banking services has not varied at significant levels when they have been classified based on age, educational qualification, occupational status, monthly income, importance of mobile banking to our society and potentiality of mobile banking to expand in future. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on the level of mobile banking services provided by their bank and overall mobile banking experience there has been a significant variation, thereby, rejecting the null hypothesis.

**t-TEST**

- The overall result of t-Test has revealed that respondents' level of awareness on the features of mobile banking services has not varied at significant levels when they have been classified based on marital status, preference of mobile banking than internet banking and suitability of mobile banking to their life style. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on gender there has been a significant variation, thereby, rejecting the null hypothesis.
- The overall result of t-Test has revealed factors that motivate the respondents to use mobile banking services has not varied at significant levels when they have been classified based on gender, marital status and preference of mobile banking than internet banking. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on suitability of mobile banking to their life style there has been a significant variation, thereby, rejecting the null hypothesis.
- The overall result of t-Test has revealed that respondents' level of satisfaction on technology usage of mobile banking services has not varied at significant levels when they have been classified based on gender, marital status and preference of mobile banking than internet banking. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on suitability of mobile banking to their life style there has been a significant variation, thereby, rejecting the null hypothesis.
- The overall result of t-Test has revealed that respondents' level of problems on technology usage of mobile banking services has not varied at significant levels when they have been classified based on gender, marital status and preference of mobile banking than internet banking. Hence, the null hypothesis has been accepted with respect to these factors. When the respondents have been classified based on suitability of mobile banking to their life style there has been a significant variation, thereby, rejecting the null hypothesis.

**10.2 SUGGESTIONS**

Based on the above findings, we may put forward the following suggestions about incorporating innovative solutions in the banking sector, particularly by utilizing mobile services.

1. Banks can use mobile services as a positive competitive advantage as well as differentiation strategy with rivals.
2. Banks should create more awareness about the mobile banking services through Advertisements, Pamphlets, Demo Fares, campaigning etc. so that the customer feel informed and it may create interest among them.
3. Trust is also an important point of concern. Trust between the customers and the service provider is very important, without security and privacy users will not use mobile for financial transactions.
4. Perceived ease of use and perceived usefulness are found to be important factors to influence the consumer intention to adopt mobile banking. Hence, the main attention of management should be focused on the development of usefulness of system.
5. Perceived cost is also an important factor; therefore, this study suggests that the creative promotional and pricing strategies, including cost reduction should be implemented to attract more price-conscious customers.

**10.3 CONCLUSION**

Mobile banking has made it possible to bring mass population under the facilities of the banking services and to help in reaching these banking facilities at the doorstep of the people. There is a great scope for mobile banking services in India as the number of mobile users are increasing in the current scenario. Banking and financial services can now be reached by a much larger section of the society, including those who were financially excluded through the medium of mobile phones. Mobile banking is not just about providing bank customers with real, anytime/anywhere banking services but also, substantially decreasing the service costs. In this study customers' opinion on mobile banking services has been obtained and analysed with appropriate statistical tools. It has been found that most of the customers have been aware of the mobile banking features that are offered and they have good experience in overall mobile banking services. Most of the people feel that mobile banking is important to our society and it also suits our life style. The customers would be more satisfied if the problems (security threats, technical issues, etc.) faced by them in using mobile banking services are met by the bankers' initiatives in improving these services. Thus, the study has met its objectives and has solved the problems in mobile banking services by suggesting an improvisation in the technology of mobile banking services and it also hopes for widening the scope for mobile banking in India in the future.

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**TRANSPORT EMPLOYEES OPINION ON NATURE OF WORK AND FACILITIES IN CUDDALORE DISTRICT**

**Dr. S. THIRUMARAN**  
**ASST. PROFESSOR**  
**DEPARTMENT OF COMMERCE**  
**ANNAMALAI UNIVERSITY**  
**ANNAMALAI NAGAR**

**ABSTRACT**

*The study finds out that transport plays a vital role in the development of any place. The drivers and conductors job is a difficult one as it is stressful to the body and it deserves a certain amount of physical and mental fitness and desirable minimum alertness for maximum performance and safety on road. Therefore, the stress can be identified as the major problem for transport employees. The driver and conductor are the key factors in the system of very easily responsible to stress in the way of carrying out their regular responsibility. Many factors can initiate the stress like Organizational factors, Working conditions, Passenger attitudes, public and government attitudes and personal factors. It was found out that working condition and personal factors are significantly influencing physiologically and organizational factors and personal factors significantly impacting psychologically the employees of Transport Corporation in Tamil Nadu.*

**KEYWORDS**

Cuddalore district, stress management, transport employees.

**JEL CODES**

L90, L99, J50.

**INTRODUCTION**

Today stress is the most integral part of life. Changing the life style and social factors, it becomes predictable. Stress leads to behavioral, physical and mental changes. It can be a positive or negative. Stress generated by undesirable outcomes, is called Distress. Some level of stress is need for effective functioning and performance. The transport plays an important role in the development of each and every state. Transport employees particularly drivers and conductors are frequently report tension, sleeping problems, mental over load and fatigue problems. They are facing many problems compared to other employees.

**STRESS**

The stress may be emotional, mental and cognitive. Stress is a usual reaction as soon as your brain recognizes a threat. While the threat is perceived, your body releases hormones that make active your "fight or flight" response. Psychologists S. Lazarus expresses stress as "a feeling that a person experiences when they perceive that the demands go beyond the personal and social resources the person is able to mobilize." For the majority of people, stress is an unenthusiastic experience.

**TRANSPORT IN TAMIL NADU**

Tamil Nadu is backed up by a structured "Public Transport System" like State buses, Private buses, Taxis, and Autos which make communities within the state easier and comfortable. Transport facilities are a basic element in a modern society to bring people together as well as to the development of the society. The Tamil Nadu Government transport corporations provide different types of services like Chennai metro city services, town services, Express service. It includes inside and outside state services, Ghat services and Mofussil express are also offering the services. Now a day's stress is a widely extended and common phenomenon. It affects not only the individuals, but also organizations, companies, families and the whole society. Significance of Stress in general and work-stress in particular can be judged from the information given by the behavioral scientists, medical scientists, management experts. These have covered the research on stress and its impact on individual employees, which includes mental, emotional, behavioral and physical impacts on human beings.

**STATEMENT OF THE PROBLEM**

Keichel identified the job stress as one of the key problems in the workforce for the next century. Job stress problem poses risks to workers' wellbeing as well as to organizational performance. Hence, the stress is the universal phenomena and property of modern human beings irrespective of their occupation. Because each and every job has its own nature and accordingly it is generating a kind of pressure (Stress) over the respective domain. According to the above truth, the transportation sectors especially the public transport and its employees facing plenty of problems and issues in their day to day life. India's public Road Transport Systems are among the most heavily utilized in the world which is mostly run by government owned Transport Corporation, come under the preview of State Governments. In Tamilnadu, Public Road Transport still remain as the primary and preferred mode of transport for the most of the population. Buses take up over 90 per cent of Road Public Transport in India, and serve as a cheap and convenient mode of transport. Therefore, the employees' level of job stress is vital for the safety and security of mass passenger population.

Today's work environment demands more and more, therefore a stress is unavoidable upto an acceptable level. Stress can serve as a stimulus to enhance performance and productivity. However, when the level of stress is such that, an individual is incapable of satisfactorily dealing with it, then the effect on performance may be negative. Therefore, assessment of level of stress is important. Stress has become significant due to dynamic social factors and changing needs of life style. Cooper and Sutherland's research evidence indicates that a wide variety of workplace conditions causes stress, strain or pressure. According to the WHO report job related stress in developing countries is often made worse by a broad spectrum of factors besides the work environment, external environment and individual factors. Therefore, identification of factors influencing job stress is considered as important.

**OBJECTIVES**

1. To study the Employees opinion on nature of work and facilities in the study area.
2. To assess the level of stress among the transport employees in the study area.
3. To offer suitable suggestions based on the findings of the study.

**METHODOLOGY**

Both primary and secondary data were used for the purpose of this study. Primary data were collected through interview schedule from the respondents. The secondary data were collected from various books, journals, newspapers, articles and some websites.

**SAMPLING DESIGN**

Villupuram Transport Division is divided into six regions namely, Villupuram Region, Cuddalore Region, Vellore Region, Kancheepuram Region, Thiruvallur Region and Tiruvannamalai Region. Out of six regions the study covers only Cuddalore region. There are 11 depots functioning in Cuddalore region. All are considered in

the present study. In Cuddalore region 1839 Conductors and 1918 drivers are working at present. Out of which 10 per cent Drivers 192 respondents and Conductors 184 respondents are selected as sample under the simple random sampling techniques.

**TOOLS FOR ANALYSIS**

The study used Statistical tools such as; simple percentage, standard deviation is used to indenting the characteristics of population. Factors analyses were used to analyze the data. ANOVA and Chi-square tests are applied to test the hypotheses which are framed for the analysis and interpretation of data.

**ANALYSIS**

**TABLE 1: EMPLOYEES OPINION ON NATURE OF WORK AND FACILITIES**

S. No	Employees opinion on nature of work and facilities	Respondents	Percentage	
1	Over Loaded of Work	Yes	263	69.90
		No	113	30.10
		<b>Total</b>	<b>376</b>	<b>100</b>
2	Training Programme	Yes	324	86.17
		No	52	13.83
		<b>Total</b>	<b>376</b>	<b>100</b>
3	Providing Privilege to Ladies	Yes	66	17.55
		No	310	82.45
		<b>Total</b>	<b>376</b>	<b>100</b>
4	Politics Prevail in the Corporation Cause for Stress	Yes	204	54.30
		No	172	45.70
		<b>Total</b>	<b>376</b>	<b>100</b>
5	Get Anxious about Job Security	Yes	283	75.30
		No	93	24.70
		<b>Total</b>	<b>376</b>	<b>100</b>
6	Job is Routine in Nature	Yes	145	38.60
		No	231	61.40
		<b>Total</b>	<b>376</b>	<b>100</b>
7	Co-operation from Peers	Yes	135	35.90
		No	241	64.10
		<b>Total</b>	<b>376</b>	<b>100</b>
8	Family Problems tend to interfere with official work	Yes	262	69.70
		No	114	30.30
		<b>Total</b>	<b>376</b>	<b>100</b>
9	Feelings on work is not appreciated	Yes	237	63.00
		No	139	37.00
		<b>Total</b>	<b>376</b>	<b>100</b>
10	Accident Met by Bus	Yes	227	60.40
		No	149	39.60
		<b>Total</b>	<b>376</b>	<b>100</b>
11	Number of Times accident happen	Only one time	116	30.90
		2 times	85	22.60
		3 times and more	26	6.90
		<b>Total</b>	<b>227</b>	<b>60.40</b>
12	Person Responsible for Accidents	Myself	70	18.60
		Others	157	41.80
		<b>Total</b>	<b>227</b>	<b>60.40</b>
13	Reason for Responsible to Accidents	Stress	66	17.60
		Non co operative peer workers	63	16.80
		Poor bus and road conditions	98	26.10
		<b>Total</b>	<b>227</b>	<b>60.40</b>
14	Satisfaction on Shift Timings	Yes	116	30.90
		No	260	69.10
		<b>Total</b>	<b>376</b>	<b>100</b>
15	Satisfaction on Allowances for the Night shift duty	Yes	121	32.20
		No	255	67.80
		<b>Total</b>	<b>376</b>	<b>100</b>
16	Incentives	Good	160	42.55
		Moderate	94	25.00
		Poor	122	32.45
		<b>Total</b>	<b>376</b>	<b>100</b>
17	Keen on Saving Fuel	Yes	262	69.70
		No	114	30.30
		<b>Total</b>	<b>376</b>	<b>100</b>
18	Reason for Keen on Saving Fuel	Appreciation / Awards	44	11.70
		Interest of organization	108	28.70
		Both of the above	68	18.10
		Leader's attitude	42	11.20
		<b>Total</b>	<b>262</b>	<b>69.70</b>
19	Average Number of over time working hours per week	Up to 24 hours	225	59.80
		More than 24 hours	151	40.20
		<b>Total</b>	<b>376</b>	<b>100</b>
20	Canteen Facilities	Good	130	34.60

		Moderate	191	50.80
		Poor	55	14.60
		<b>Total</b>	<b>376</b>	<b>100</b>
21	Drinking Water Facilities	Good	70	18.60
		Moderate	189	50.30
		Poor	117	31.10
		<b>Total</b>	<b>376</b>	<b>100</b>
22	Rest Room Facilities	Good	162	43.10
		Moderate	165	43.90
		Poor	49	13.00
		<b>Total</b>	<b>376</b>	<b>100</b>
23	Medical Facilities	Good	54	14.40
		Moderate	138	36.70
		Poor	184	48.90
		<b>Total</b>	<b>376</b>	<b>100</b>
24	Housing Facility	Good	56	14.90
		Moderate	80	21.30
		Poor	240	63.80
		<b>Total</b>	<b>376</b>	<b>100</b>
25	Safely Measures	Good	196	52.13
		Moderate	102	27.13
		Poor	78	20.74
		<b>Total</b>	<b>376</b>	<b>100</b>

Source: Primary Data

- Over loaded of work:** Over load work is a one of the important reasons for job stress. All the transport employees are over loaded working. Out of 376 employees, 263 (69.90 %) agreed that their work load is high, whereas 113 (30.10 %) respondents disagreed on their over loaded work.
- Training Programme:** In TNSTC Cuddalore region has organized various training programme for all the employees particularly drivers and conductors. Among the 376 employees, 324(86.17%) have satisfied the training programme organized by TNSTC and 52(13.83) employees were not satisfied with the present training method particularly driving by safe training programme in addition to computers training for conductors. It is concluded that the majority of the employees were satisfied the training programme organized by TNSTC.
- Providing privilege to ladies:** In Transport Corporation the drivers and conductors have given some privilege to ladies. 310(82.45%) have not providing privilege to ladies and around 66(17.55%) of the respondents have given some privilege to ladies. In is concluded that the majority of the respondents have not give a privilege to ladies.
- politics prevail in the corporation cause for stress:** TNSTC, the political parties are involved in all the levels. It is one of the important causes for stress. 204 (54.30 %) employees consent to the statement on politics prevail in the corporation cause for job stress. 175 (45.70%) employees disagree to the statement.
- Gets anxious about job security:** Table discloses about anxiousness about their job security. 283 (75.30 %) employees opine that they are worried about their job security. Whereas 93 (24.70%) respondents do not have any anxiousness about their job security. It is clear that the majority of employees have anxiousness about their job security.
- Job is routine in nature:** TNSTC employees have to work in routine. Some of the employees have satisfied with the nature of work. 231(61.40%) of the respondent's job is not routine in nature, followed by 145(38.60%) of the respondents the routine in nature. So, the opinion of the majority of the respondents is that their work is not routine in nature.
- Set Proper Co-operation from peers at work:** Transport corporation cooperation is the major aspect of job level. Table shows that whether the employees get peer cooperation or not. 135 (35.90%) respondents feel that they are getting cooperation from their peer group. Whereas majority of the respondents have the numbering 241 (64.10%) are not receiving cooperation from their peers for their work.
- Family problems tend to interfere with official work:** Family problems have more affect on official work. It is also created the job stress. It could be seen that 262(69.70%) respondents say that the family problems tend to interfere with official work and 114(30.30%) respondent's family problems not interfere with official work. It is concluded that the family problems affect the official work of the majority of the respondents.
- Feelings on work is not appreciated:** If the work is appreciated by higher officers, then employees have interested to do hard work. All the employees expect appreciation. The corporation may motivate the employees in different ways. This is one of the ways to motivation. Among the 376 samples of this study, more than half of the 237 (63.00%) employees feeling on work is not appreciated and 139 (37.00%) employee's opinion on work is appreciated. From this data the researcher concludes that, the more number of employee's work are not appreciated by the higher officers.
- Accident met by bus:** In transport service, accidents are fairly common. The questions were asked to the respondents whether they have been met an accident during the service. It is witnessed that more than half, that is 227 (60.40%) of the respondents have been met accident by bus and 149 (39.60%) respondents have not been met any accident by bus. It is interesting to note majority of 227 (60.40%) respondents have been met an accident by bus.
- Number of times accident happen:** The respondents who had met accidents during various occasions were satisfied. Out of 227 employees, the majority of 116 (30.90%) employees only met with accident. Whereas only 85 (22.60%) of the employees met two times with accident. A number of 26 (6.90%) employees met three times and more accidents. Overall most of the employees met with an accident only one time.
- Person responsible for accidents:** The respondents were asked to identify the responsibility for accident. Out of 227 respondents, around two third 157 (41.80%) of the respondents are responsible for accidents, to others followed by 70 (18.60%) of the respondents are responsible for myself. Overall, the study indicates that majority of 157 (41.80%) respondents say that others are responsible for accidents.
- Reason for responsible to accidents:** The employees were asked to reason for responsible to accident. Out of 227 respondents, 98 (26.10%) of the respondents say that the main reasons for accidents due to poor conditions of bus road, followed by 66 (17.60%) of the respondents are responsible for accidents due to stress. Around 63 (16.80%) of the respondents say that the main reasons for accident is non co-operative of peer workers. Overall, the study indicates that the poor bus and road conditions are the main reasons for accidents.
- Satisfaction on shift timings:** The employees working time particularly for drivers and conductors are more important. An attempt was made to identify the satisfaction of the respondents on shift timing. It is understood from the table that more than half 260 (69.10%) of the respondents have not satisfied on shift timings and 116 (30.90%) of the respondents have satisfied on shift timings. This indicates that majority of the respondents have not satisfied on shift timings.
- Satisfaction on allowances for the night shift duty:** The night shift duty was always tedious and general metabolism got affected. If the employees regularly worked across in night shift, they face some problems. The TNSTC to take special care against the employees working in night shift. The corporation offers a special allowance for the employees who were working in night shift. Table witnessed the satisfaction on allowances for the night shift duty. 255 (67.80%) of the employees were not satisfied on allowances for the night shift duty, and 121 (32.20%) of the employee were satisfied on allowances for the night shift duty. In the present study, most of the employees were not satisfied on allowance for the night shift duty.

16. **Incentives:** Motivation is one of the important factors to employees to show the actual in their work. The TNSTC have offered different types of incentives to encourage the employees to their involvement. The incentives offered in the form of financial and non-financial modes. The sample survey highlighted that 160 (42.55%) of the employees opinion on present incentive scheme is good, whereas 122(32.45%) employees viewed is poor and 94(25.00%) of the employees opinion is moderate. It is concluded that most of the employees have satisfied with the incentive scheme.
17. **Keen on saving fuel:** The transport corporation officers expect from their employees to save fuel. The questions were asked the employees whether they show interest to save the fuel. Table says that the 262 (69.70%) of the respondents are saving the fuel and 114 (30.30%) of the respondents are not saving the fuel. It is interesting to note the majority of the 262 (69.70%) respondents are saving the fuel.
18. **Reason for keen on saving fuel:** The respondents were asked what the major reasons for saving the fuel consumption are. The reason was deliberated and four heading in general like appreciation/awards, interest of organization, both the reasons and leaders attitude was found out. Out of 262 employees 108 (28.70%) respondents main reason for saving a fuel is interest on organization, followed by 68 (18.10%) respondents the reasons are both appreciation/awards and interest on organization respectively. Around 44 (11.70%) respondents the reason is appreciation/award and 42 (11.20%) is the leader's attitude. It is observed that the most of the transport employees main reason for saving fuel is interest on organization.
19. **Average number of over time working hours per week:** The Majority of the employees have interest to work over time. Because the wages of over time is high, compare to normal working hours. It is found the Table indicates that out of 376 respondents 225 (59.80%) employees average number of over time working hours per week is up to 24 hours and the remaining 151 (40.20%) employees have more than 24 hours in the average number of over time working hours per week. It is inferred that the majority of the respondents average number of over time working hours per week is up to 24 hours.
20. **Canteen facilities:** TNSTC has given various canteen facilities to their employees. It is one of the motivations to employees. A seen from the Table shows that 191 (50.80%) employees opinion about the canteen facilities is moderate, followed by 130 (34.60%) employees opinion is good. But 55 (14.60%) employees' opinion of canteen facilities is poor. It is concluded that the most of the respondents' opinion on canteen facilities is moderate.
21. **Drinking water facilities:** TNSTC have provided water facilities to their employees. Out of 376 respondents 189 (50.30%) employees were the opinion on drinking water facilities is moderate, 117 (31.10%) employees opinion is poor and 70 (18.60%) employees opinion on drinking water facilities is good. It is clear that majority of the respondents opinion on drinking water facilities is moderate.
22. **Rest room facilities:** Each and every employee wants to take rest in rest time. So the transport corporation has well maintained the rest room facilities. It could be seen from Table that the opinion on rest room facilities by 165(43.90%) employees are moderate followed by 162(43.10%) employees opinion on rest room facilities is good. But the rest of the 49(13.00%) employees' opinion is poor. Thus it is inferred that the majority of the employees 165(43.90%) opinion on rest room facilities is moderate.
23. **Medical facilities:** The Corporation has provided medical facilities to their employees. This is one of the most important components in any corporation. Table discloses about opinion on medical facilities by the Transport Corporation employees. 184(48.90 %) employees opinion on medical facilities are poor. Whereas 138 (36.70%) employees opinion are moderate 54(14.40%) employees' have opinion on medical facilities are good. It is clear that majority of employees opinion on medical facilities are poor.
24. **Opinions on housing facility:** TNSTC have provided housing facilities to his employees. All the employees are not interested to get house from corporation. out of 376 employees 240 (63.80%) employees opinion on housing facilities are poor, followed by 80 (21.30%) employees opinion is moderate and 56 (14.90%)employees opinion on housing facilities is good. It reveals that majority of the employees 240(63.80%) opinion on housing facilities is poor.
25. **Safely measures:** Safety measure is one the most important actions in the transport corporation. The TNSTC provides a variety of safety measures to the employees. Table shows that 186(52.13%) respondents opinion on safety measure is good, followed by 102(27.13%) respondents opinion on safety measures is moderate and 78(20.74%) respondents opinion is poor. From the analysis it is learned that the majority of the respondents are satisfied on safety measure offered by the NSTC.

## SUGGESTIONS

1. Insight on political and official pressure is high which should be eradicated at any cost since this factor will have an adverse impact on the functioning of TNSTC.
2. Body fitness is necessary to all the employees particularly to drivers and conductors. Therefore, the Transport Corporation should follow the latest technology and organize regular eye and health checkups to the drivers and conductors. Medical facility is highly required to the employees in the depots.
3. The corporation should train the current training methods to drivers and conductors so that the trainees have to understand their importance in the corporation.
4. Incentives are the main motivation to the employees. The incentives have to be paid according to the performance of transport employees.
5. Drivers and conductors of the corporation are the only production point workers and they should be provided with all the training facilities they require from the corporation more than others. After that the corporation will reach the goal.
6. The corporation has to get better performance appraisal basic of both financially and physically, so as to proof new development in this aspect.
7. Require based transfers can be implemented to serve up the real requirements of the corporation.
8. The corporation should develop the urgent measures to improve the safety and security elements among the drivers and conductors. Supplementary security equipment's and training should also be given to everyone often.
9. The corporation should conduct stress management programmes at regular intervals, as drivers and conductors are in touch with the universal public daily. Yoga and health camps can be organized to decrease their stress level.
10. Drivers are to be healthy experienced necessarily and be alert of driving skills prior to embarking on any driving job.
11. The driver has to produce an eye fitness certificate from an eye specialist nominated by the corporation before his confirmation in the service.
12. Smoking is a bad habit to the employees. So, the drivers and conductors must be positive to stop smoking. They should have usual medical check-ups, particularly checking blood pressure regularly.

## CONCLUSION

Transport plays a vital role in the development of any place. The drivers and conductors job is a difficult one as it is stressful to the body and it deserves a certain amount of physical and mental fitness and desirable minimum alertness for maximum performance and safety on road. Therefore, the stress can be identified as the major problem for transport employees. The driver and conductor are the key factors in the system of very easily responsible to stress in the way of carrying out their regular responsibility. Many factors can initiate the stress like Organizational factors, Working conditions, Passenger attitudes, public and government attitudes and personal factors. It was found out that working condition and personal factors are significantly influencing physiologically and organizational factors and personal factors significantly impacting psychologically the employees of Transport Corporation in Tamil Nadu.

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**A STUDY OF MARKETING PROBLEMS OF TOMATO WITH REFERENCE TO NASIK DISTRICT**

**KIRAN KRISHNA AHER**  
**LECTURER**  
**B.Y.K. COLLAGE OF COMMERCE**  
**NASHIK**

**ABSTRACT**

*Maharashtra is a leading state in production of tomato in the whole country; nearly 35 % is exported from Maharashtra. This research papers focus on Problems in Marketing of Tomato producers in Nasik district. This paper provides suggestions for proper marketing of tomato in Nasik district on the basis of study.*

**KEYWORDS**

marketing, tomatoes, export.

**JEL CODES**

M31, Q19.

**INTRODUCTION**

India tomato are consider as a cash crop. Maharashtra state produce is 1183.2 thousand tons of tomato in the year 2001-2002. Total export of Tomato from India is 266986.38 thousand tons during 2011-12 valuing of Rs. 47030.50 crores, out of which, nearly 35% is exported from Maharashtra<sup>1</sup>. Maharashtra is a leading state in production of tomato in the whole country. With regard to agricultural land under Tomato cultivation and Tomatoes production, Nasik and Sangli districts are at far front in the state. Apart from these, Tomatoes are also grown in the district of Ahmednagar, Pune, Satara, Solapur and Osmanabad. Nowadays, Tomatoes are produced in Latur district of Marathwada also. However, Nasik and Sangli districts are ahead in the production of Tomatoes in a scientific manner. Area under Tomatoes in Maharashtra is 44.27 thousand ha. and production is around 976.58 thousand tons of Tomatoes in the year 2015-16. Total export of Tomato from India is 47030.50 thousand tons during 2011-12 valuing of Rs. 47030.50 crores, out of which, nearly 35% are exported from Maharashtra. Even though Productivity and production of Horticulture products are high in India, but economic condition are not much favorable to the Tomatoes farmers. It is because of growers weak margin power and poor economic condition, which the marketing intermediaries are harassing and cheating in different ways. The previous study shows that the previous study show that earning potential of Tomatoes cultivation is high.

**REVIEW OF LITERATURE**

The review of earlier studies and experience of previous research works were of provide great help in evaluating the importance of concepts and methodology followed. This section briefly reviews the concepts adopted in previous study and research works.

1. Prof. S. D. Nikam (2018) studied problems in marketing channels of tomato in Nasik Districts during his study period he pointed out various problems tomato producers in Nasik districts.
2. Pramod Patil (2013) in his book studied scientific methods of tomato production, problems of tomato of producers. His books also indicate medical uses of tomato.
3. Arora V.P and R. Saxena (1998) studied role of farmers organization in marketing at vegetable in hill religion of utter Pradesh hill India.

All previous studies concluded the importance of tomato, problems in tomato production and marketing of tomato.

**OBJECTIVES OF THE STUDY**

1. To study problems in marketing of tomato in Nasik district.
2. To give suitable suggestion for efficient marketing Channels of Tomato in study area.

**CHOICE OF THE STUDY AREA**

Among Tomato producing states of India, Maharashtra is a leading state in production of tomato in the whole country. With regard to agricultural land under Tomato cultivation and tomato production, Nasik and Sangli districts are at forefront in the state. Apart from these, Toamto are also produced in the district of Ahmednagar, Pune, Satara, Solapur and Osmanabad. However, Nasik and Sangli districts are ahead in the production of tomato in a scientific manner. These districts have suitable climate for tomato production and a very good irrigation system so Nasik districts show the highest productivity of tomato as compared to others districts. That is why researcher selected Nasik as study area.

**COLLECTION OF DATA**

A sample study was conducted to study problems of marketing Channel of tomato producers in study area. Study is based on information collected through interviewed schedule and field survey in study area. For collecting data, an interview schedule was administered 80 farmers who were from selected study areas. Required information and data also collected through secondary sources like published reports, Periodicals, Newspapers and Journals.

**TOMATO PRODUCTION**

Tomato originated in tropical America, probably in Mexico or Peru where a variety of wild cherry tomato was brought into cultivation Morning Stare (undated). Europeans came to know tomato in the mid-16th century. The Italians, however, soon embraced tomato varieties of pomid and ora (golden apple) and introduced them into their cuisine. Problem of Tomato cultivation often is characterized by seasonality and perishability in nature.

TABLE 1: TOMATO PRODUCING COUNTRY IN WORLD (2012-2013)

Sr. No	Country	Ares (000 hector)	production	Production (metric ton)
1	China	1000 (20.78)	50000 (30.77)	50
2	India	879 (18.26)	18226 (11.21)	20.7
3	U.S.A	150 (3.12)	13207 (8.13)	88
4	Turkey	300 (6.23)	11350 (6.98)	37.8
5	Egypt	216 (4.48)	8625 (5.31)	39.9
6	Iran	160 (3.32)	6000 (3.69)	37.5
7	Italy	92 (1.91)	5132 (3.16)	55.9
8	Spain	49 (1.02)	4007 (2.47)	82.1
9	Brazil	64 (1.33)	3874 (2.38)	60.7
10	Mexico	97 (2.02)	3434 (2.11)	35.5

(Sources: www.google.com)

During the year 2012-13 China held first position in tomato production whereas stood second rank in tomato production. It followed by U.S.A., Turkey, Egypt and other country. china produced 30 % tomato in world where India produced 11.21%, U.S.A. 13%, Turkey produced 6.98% followed by Egypt 5.31.

TABLE 2: TOMATO PRODUCING DISTRICT IN NORTH MAHARASHTRA (2014-15)

Sr No	District	Area (Hector)	Production	Production (per hector)
1	Nasik	14650 (94.68)	575053 (95.94)	39.25
2	Dule	485 (3.14)	16975 (2.84)	35
3	Jalgaon	260 (1.66)	5720 (.93)	22
4	Nandurbar	79 (.52)	1698 (.29)	38.73
	Total	15474 (100)	599446 (100)	38.73

(Sources: Agricultural officer, Nasik)

In north Maharashtra, Nasik was leading tomato producing districts. It followed Dule, Jalgaon and Nandurbar. Out of total tomato production in north Maharashtra only Nasik district produced 39.25% which was highest in year 2014-15. Where Nandurbar stood 2<sup>nd</sup> in highest tomato producing districts in North Maharashtra.

## PROBLEMS IN TOMATO MARKETING

- MALPRACTICES OF MIDDLEMAN:** Study found that, malpractices of middleman are major problem in agricultural products in Nasik districts. Middleman follow unfair trade practices like collection of levy from farmers, higher rate of commission, variation in prices, Defective Weights and Scales etc. It leads to exploitation of farmers in Nasik districts.
- INADEQUATE FINANCIAL RESOURCES:** In the rural areas in Nasik district especially sinner, Dindori, Igatpuri, Goti found that farmer face problem of lack of adequate financial resources, due to which even their emergency requirements are not fulfilled. In such conditions the farmers sell their produce before its ripening. Similarly, tomato producer some financial facilities, like, installments on loans for pumping-set, tractor, thrasher etc. have to be paid on monthly or quarterly basis due to which they have to sell the product as soon as possible. Thus, as the lack of financial assistance, is a problem for the farmers; so does the receipt of loan also puts them in problem.
- LACK OF INFRASTRUCTURE FACILITIES:** Inadequate infrastructure facilities are one of major problem for tomato producers in Nasik district. Farmers face problem of transports facilities, poor electricity supply, and lack of cold storage facilities. Even The roads from Villages to cities are usually unmade which are not capable of transport during the rainy season. The bullock carts can take the product only up to a limited area. During lack of transport facilities, the farmer is unable to take his produce to the appropriate market and is unable to receive a fair price for his product.
- LACK OF COLD STORE FACILITIES:** Farmers of Nasik districts face problem of lack of cold storage facilities. Due to deficiency of cold storage farmers face lots of problem for storage of products especially perishable nature products like tomato. Due to lack of this facility the farmer is unable to keep his product safely until it can fetch a fair price, and he is forced to sell his product at a low price. The insufficient and unscientific facilities of shortage which are available waste large quantities of Tomato. Approximately 20% to 30% tomato are lost due to rats, insects etc. and the farmers have to bear crores of loss due to lack of these facilities.
- LACK OF AWARENESS OF THE MARKET:** The farmer of has little knowledge about marketing. Majority of farmers believes on information acquired from the Middlemen and money lenders of the village. Mostly, farmers in Nasik districts are still illiterate so they cannot read the newspaper. Thus, they do not have sufficient knowledge about the market. Now, government transmits the rates of the market on the radio, which has definitely benefited them.
- LACK OF UNITY AMONG FARMERS:** The farmers in Nasik districts are illiterate who are easier be fooled by the money lenders, traders, middlemen, due to their simple nature. Similarly, lack of unity among farmers also causes their exploitation because farmers are spread in distant areas in rural places. They are unable to meet with each other and resolve their problems; as a result, they do not get a fair price for their produce.
- CORRUPT POLICIES OF THE 'MANDIS':** Most of Mandis in Nasik districts are suffered by corrupt policies. It proves harmful for farmers to negotiate for fair prices for their products.

## ANALYSIS AND INTERPRETATION OF DATA

### 1. PROBLEMS IN MARKETING OF TOMATO IN NASIK DISTRICTS

TABLE 3

Taluka	Yes	Government policy	Transport	Financial problems	Unskilled Labour	No	Total Farmers
Dindori	18	4	8	5	1	5	23
Niphad	14	2	6	4	2	4	18
Igatpuri	9	1	5	2	1	2	11
Sinner	10	6	1	2	1	4	14
Chandwad	9	2	5	1	1	5	14
Total	65					15	80
%	81.25	11.25	31.25	17.5	7.5	18.75	100

(Sources: field Survey)

Above table indicate problems of Tomato producers in Nasik districts and places from where information collected. Total sample size of 80 farmers. Out of 80 farmers 65 producers found problems in marketing of tomato. On basis of interview and survey problems are classified in to category of government policies, transportation facilities, financial problems and unskilled labour. Out of total sample size 11.25 % farmers face problem of government policies in Nasik. Whereas 31.25 % tomato producers found problems in transportation facilities so far this is main problem in marketing of tomato in Nasik districts. Survey also indicates 7.5% farmers face problem of unskilled labour in Nasik districts.

TABLE 4

Taluka	Yes	Storage	Middleman	lack of selling space	No	Total
Dindori	23	12	5	6	0	23
Niphad	16	12	3	1	2	18
Igatpuri	10	7	1	2	1	11
Sinner	13	9	2	2	1	14
Chandwad	11	7	2	2	3	14
Total	73	47	13	13	7	80
%	91.25	58.75	16.25	16.25	8.75	100

Sources: field Survey

This table also indicate problem in marketing of tomato in Nasik districts. Out of total sample size of 80 farmers 73 tomato producers face problems in tomato marketing. These problems are divided in to storage facilities, problem of middleman and lack proper space for selling and distribution of tomato. Out of 80 producer 58.75 % tomato producers found problems of storage, 16.25 % found problems of middle man chain and 16.25 % found difficulties in selling and distribution of tomato.

### FINDINGS

1. The tomato production showed an increasing trend in study area.
2. India is second largest tomato producing country in world. County produced 11.21% tomato in world.
3. In north Maharashtra Nasik is lending tomato producing district. Nasik districts produced 94.68% tomato in north Maharashtra.
4. 81.25% tomato produced in Nasik districts found problems in marketing of their products.
5. 58.75% tomato produced suffers from problem of storage faculties in Nasik districts.
6. 16.25% tomato produced in Nasik districts found problems of malpractices of Middle man.
7. 16.25% tomato produced in Nasik districts found problems of lack selling palace for their product.

### SUGGESTIONS

1. Government should encourage manufacturer of tomato processing industries in Nasik district
2. Tomato producers should start co-operative marketing channels to reduced marketing cost.
3. Tomato producers should try to find new marketing channel for reducing marketing cost.
4. Tomato producers should try to use more Social media like what's up, Face book for marketing.
5. State Governments should have introduced special insurance scheme for tomato producers.
6. Government Should makes rules regulations for controlling malpractices of Middleman.
7. Government should start warehouse for storage of tomato in Nasik Districts.
8. Governments should frame scheme for tomato exporters like exports Subsidies, tax concession, production assistance etc.
9. Provide information on demand, supply and prices of tomato in different markets to farmers (preparation of leaflets and pamphlets) through Governments sources.

### CONCLUSION

The Tomato being the major crop in Nasik districts, governments of Maharashtra should provide various facilities to producers of tomato. This study was conducted to investigate the constraints facing tomato production and marketing in Nasik districts. The governments should establish cold storage facilities at Nasik districts. Even governments should invite private player to invest in cold storage business. The governments should provide various incentive schemes to tomato producers. The study also found that still there is lots of problems in marketing of tomato in Nasik district. The marketing Channels required lots of improvement for effective marketing of tomato. Government should encourage tomato processing industries in Nasik districts. It also suggested to Government should make rules and regulation for controlling harmful impacts of middleman.

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**ASSIGNING TEACHING STAFFS FOR TEACHING VARIOUS SUBJECTS IN COLLEGE**

**Dr. RAJIV GANDHI**  
**ASSOCIATE PROFESSOR**  
**NEW LOOK GIRLS' PG COLLEGE**  
**BANSWARA**

**ABSTRACT**

*An assignment model is one of the most important techniques of operations research. It consists of assigning a number of resources to an equal number of activities assuming that there are the numbers of resources equal to the number of tasks available. The objective of assignment is to minimize the total cost or to maximize the total profit. This paper presents a review pertaining to assignment problem within the education area for assigning teaching staff to different subjects so that the percentage of result is maximized.*

**KEYWORDS**

Hungarian method, assignment problem, optimal solution.

**JEL CODE**

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**INTRODUCTION**

Assignment problem is most important technique of operation research to find optimal solution of given problem in the area of business, economics, and education and even in day to day life activities. The area of application of assignment problem is very vast and used for the purpose of decision making such as:

- i) Assign of different workers to different machines
- ii) Assign of different jobs to different workers.
- iii) Assign sales people to sales territories
- iv) Assign different products to different machines
- v) Assign different subjects to different faculties
- vi) Assign batting position to batsman

One of the most widely used methods for solving assignment problems is called, the Hungarian method. This method of assignment was developed by the Hungarian Mathematician D. Konig in 1955, and is therefore known as Hungarian method of assignment problem.

There are many types of assignment problems, such as:

1. Minimization problems: Related to objective of minimization of cost, time, loss, expenses, distance etc.
2. Maximization problems: Related to objective of maximization of profit, sales, income, runs, exam result etc.
3. Unbalanced problem: when available resources are not equal to available activities/tasks i.e. numbers of rows are not equals to number of columns.
4. Impossible assignment: when a particular job cannot be completed by machine or worker. The reasons are numerous such as lack of required skills, deficiency in technical knowhow, improper training, and physical inability are few reasons.

Hungarian method of assignment is applicable only when problem is related to minimization and balanced problem (Rows = Columns)

**REVIEW OF LITERATURE**

Importance of allocation of different jobs to various machines by assignment method was explain by the A. Seethalakshmy and N. Srinivasan in 2013 which provide the new approach to solve unbalanced assignment problem. ElsiddigIdriss Mohamed Idriss & Elfarazdag Mahjoub Mohamed Hussein (2013) has given the application of linear programming problem specially assignment model to solve complex business problem. They have given customization model to reduce the cost of resource allocation. A. Ahmed and Afaq Ahmad in 2014 have given a new method is for finding an optimal solution of a wide range of assignment problems, directly.

**OBJECTIVES**

1. To assigning various subjects to various lecturers so that result can be maximised.
2. To use operation research technique to find required solution.

**HYPOTHESIS**

1. All the available lecturers can teach given subjects.
2. The efficiency of teacher can be measured in terms of result

**RESEARCH METHODOLOGY**

This study is based on exploratory research which provides practical solution of real life given problem. Last 5 years results of students in various subjects were used to develop payoff matrix. Operation research technique that is assignment method is used to solve the problem. The problem is related to maximization of results on the basis of that subjects will be assigned to different lecturers. In the given problem one restriction is that in future Rajiv will not teach economics subject.

**RESULTS AND DISCUSSION****Mathematical Formulation of Assignment Problem**

Each assignment problem has a matrix associated with it. Generally, the row contains the resources or people we wish to assign and the column comprise the jobs, tasks or activities we want them assigned to. In this study available lectures were shown in rows and different subjects were shown in columns. Payoff matrix was developed on the basis of last 5 years result of lectures in teaching various subjects in percentage. (See Table: 1).

TABLE 1: PAYOFF TABLE (Result in %)

Lecturers/Subjects	Economics	Statistics	Accountancy	Management
Ashish	75	85	90	65
Manish	85	78	92	76
Rajiv	69	91	88	77
Khushboo	80	100	90	80

The steps for solving this assignment problem using the Hungarian method are given below:

Step 1: The above problem is related to maximization of result, so first convert maximization in minimization problem by subtracting all the entries of the original payoff table from the maximum entry of that table.

TABLE 2: RELATIVE LOSS TABLE (Result in %)

Lecturers	Economics	Statistics	Accountancy	Management
Ashish	25	15	10	35
Manish	15	22	8	22
Rajiv	31	9	12	24
Khushboo	20	0	10	20

Step 2: Problem is balanced that is number of rows (4) = number of columns (4). So there is no need to add dummy row or column.

TABLE 3

15	5	0	25
7	14	0	14
22	0	3	15
20	0	10	20

Step 3 Row Deduction- Subtract least entry of each row from all the entries of that row to obtain row reduced matrix.

TABLE 4

8	5	0	11
0	14	0	0
15	0	3	1
13	0	10	6

Step 4 Column Deduction- In the reduced matrix subtract least entry of each column from all the entries of that column to obtain column reduced matrix.

TABLE 5

8	5	0	11
0	14	0	0
15	0	3	1
13	0	10	6

Step 5 Draw minimum number of lines (horizontally and/or vertically) to cover all the zeros.

TABLE 6

7	5	0	10
0	15	1	0
14	0	3	0
12	0	10	5

Step 6 Optimality Test-Number of drawn lines (3) ≠ number of rows or columns (4), so solution is not optimal.

TABLE 7

7	5	0	10
0	15	1	0
14	0	3	0
12	0	10	5

Step 7 For Optimal Solution- Select smallest value from all the uncovered values (here it is 1) subtract this from all the uncovered values, add it to all the values which are at the intersection of two lines and other covered values will remain unchanged. The revised matrix is-

Step 8 Repeat step number 5 and draw minimum number of lines to cover all the zeros.

Step 9 Now number of lines (4) = number of rows or columns (4), so solution is optimal.

Step 10 Final Assignment- Starting from the top row examine rows successively until a row with exactly one zero is obtained. Make an assignment to this single zero by making a square around it and cross all other zeros in the same row and/or column of that zero. If zero is not found in row search in column also. Continue these processes until all zeros in rows/ columns are either enclosed or cross. If all the rows/columns have at least one square box than assignment process is completed.

TABLE 8

Lecturers/Subjects	Economics	Statistics	Accountancy	Management
Ashish	7	5	0	10
Manish	0	15	1	0
Rajiv	14	3	3	0
Khushboo	12	0	10	5

Step: 11 We will write values from original payoff matrix Table: 1

TABLE 9

Lecturers	Subjects	Result %
Ashish	Accountancy	90
Manish	Economics	85
Rajiv	Management	77
Khushboo	Statistics	100
<b>Total:</b>		<b>352</b>

### FINDINGS

Since problem was related to assigning different subjects to lecturers which will give maximum result. Out of 400 (100 percent \* 4), 352 is maximum.

### CONCLUSION

This paper seeks to solve a real-life problem of an assigning staffs to different subjects using the Hungarian assignment technique and provide true and real solution.

### RECOMMENDATION

The use of a scientific approach gives a systematic and transparent solution as compared with a haphazard method. Using the more scientific assignment problem model for the placement and selection of the school's staff to various subjects gives a better result.

Management may benefit from the proposed approach for placement and selection of staff to guarantee optimal results from staff. I therefore recommend that the assignment problem model should be adopted by the college for assigning subjects to staffs.

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