Importance of motivational factors among Engineers and Medical doctors in Rawalpindi/Islamabad, Pakistan 2014

Author

Muhammad Durab
NUST201261327MCEME35612F

Thesis Supervisor
Asst. Professor. Dr. Mohsin Islam Tiwana

DEPARTMENT OF ENGINEERING MANAGEMENT

COLLEGE OF ELECTRICAL & MECHANICAL ENGINEERING

NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY

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Author

Muhammad Durab
NUST201261327MCEME35612F

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Thesis Supervisor:

Asst. Professor. Dr. Mohsin Islam Tiwana

Thesis Supervisor's

Signature: _____

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ISLAMABAD

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Declaration

I hereby declare and affirm that I have developed this thesis study entirely on the basis of my individual efforts under the sincere supervision of my supervisor (Asst.Prof.Dr.Mohsin Islam Tiwana). All the sources and references used in this thesis have been cited and the contents of this thesis have not been plagiarized. No portion of the work presented in this thesis has been submitted in support of any application for any other degree of qualification to this or any other university or institute of learning.

I. Copyright Statement

II. Acknowledgement

All praise for the Almighty ALLAH , Who is the entire source of all knowledge and wisdom, to thank ALLAH Almighty for all his countless blessings and bestowing us with intellect, wisdom, courage, physical and mental abilities to undergo all what we have done so far in our life. There is no might, no power but from ALLAH.

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May ALLAH ALMIGHTY always keeps us under the umberella of such valued Mentors

Dedication

To my parents and teachers

Abstract

Motivation is an important part of Human resource management. This paper summarizes motivational factor importance of engineers and doctors in Rawalpindi/Islamabad. Demographical analysis and comparison has been performed to check out the motivational factor differences between doctors and engineers. Motivational factors are selected from the theoretical and practical work done by the different researchers. Questionnaire was circulated online as well as physically to the engineers and doctors working in the different regions of Rawalpindi/Islamabad. After the survey analysis was done in SPSS. Based on the motivational scores, overall doctors have given prime importance to serving people/nation as top motivating factor followed by the same importance to job security and good salary package. Similarly, engineers have given respect and recognition from society and superiors as top motivator followed by job security and good salary package. Demographical states show that most of the time these three are at top in their respective categories but financial benefits, work place condition, skill improvement trainings, higher qualifications opportunities, relationship with coworkers, equal and fair treatment of employees, promotion have shuffled their place. Job autonomy, job empowerment and financial tours are at the bottom position in motivational factors list.

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CHAPTER1: INTRODUCTION

1.1 Background:

During industrial era of the last century companies progress and growth was measured from the amount of money, capital in the form of machinery, buildings equipment etc. they have. However humans were not considered as a big capital. Companies attract the employee only by good salary packages. Employees were just treated as the people who worked for money. Managers often thought that monetary incentive is important for human/employee not only for working but to hire in their company. With the passage of time technology begin to change its shape. Human advancement from bicycle to motorcars, from ships to airplanes, letter to telephone and from carbon pages to computers etc. began to take place. This is the time where human switch from manual to technological world and importance of human as an asset gained importance in industries. Now a day's organization having high intellectual capital is a sign of competitive edge over other companies/organizations. So management of human resource becomes primary importance for the companies.

One of the important aspects of managing human resource is "motivation". Motivation is a complex phenomenon but is stronger force for workers to give their best to the companies. Researchers have worked seriously in this topic during past half century and described motivation in their own terms. They proposed two theories of motivation. 1. Content theories 2.Process theories. Content theories described what motivates people to work. Herzberg, Maslow's theories, theory X and Y are famous theories in this type of theories. Process theories describe how motivation occurs in people. Expectancy theory, equity theory and goal setting theory are important theory in this domain. These theories gained considerable importance in elaborating and getting practical results of motivation phenomenon in employees. During past decades different researchers tried to find out the motivating factor among employee in the companies as well as in any business in the light of these theories. Similarly efforts also conducted by different authors and researchers to find out the motivating factors of employees in different organization and different fields in Pakistan. These employees include from lower management to upper management. Lower management usually less qualified and upper management are usually more qualified having professional qualification degree. There are called knowledge workers and big asset of the companies in this technical world. Since knowledge workers include literate person or intellectual person of the society that are working as employees in different organizations. They may be lawyer, bureaucrats, engineers, doctors, chartered accountants etc. besides other knowledge workers, engineers and doctors and doctors are of prime importance. These two are backbone of any countries in the improvement and advancement of country progress.

1.2 Research question:

So our research question *is to Find out the motivation factors of Engineers & Doctors along with their demographic profiles and analyze motivational factor differences between them*

1.3 Objectives:

Objective of this research are as follows:

- Finding the motivational factors of Doctors
- Finding the motivational factors of Engineers
- Comparison of motivational factors among engineers and doctors

1.4 Advantages:

- This study helps government and industrialists to know the importance of different motivating factors of doctors and engineers
- It also helps the top level officials in motivating engineers and doctor whether they are working separately in their respective fields or where they are working together
- Now a days Pakistan is facing serious economic issues due to industrial collapse because of lack of energy sources, insecurity, terrorism, corruption and poor governance. This results in demotivation of doctors and engineer and they are migrating to other countries. This study will help in retaining them in the country
- According to demographic statistics, it will be helpful for the officials to hire new engineers and doctors

1.5 Areas of application:

- This study is applicable to engineering industry where engineers are working together and their motivational needs must be known before hand to get maximum output
- This study is helpful in medical industry where doctors are working in hospitals/clinics
- It also helps in certain situations/companies where both working together in certain huge risky projects like tunneling, bridge and disasters areas etc.

1.6 Research methodology:

Research methodology includes both qualitative and quantitative analysis. Motivational factors will be selected from the theoretical and practical work done by the different researchers. Questionnaire will be formed and circulated online as well as physically to the engineers and doctors working in the different region in Rawalpindi/Islamabad. They will give relative

importance of the selected motivational factor on questionnaire. After the survey SPSS and excel will be used to obtain correlation table and excel will be used to find out the motivational scores. In this method extremely important is given weightage “5”, very important “4”, moderately important “3”, slightly important “2”, not important as “1”. Number of Professionals who marked importance of motivational factors according to the likert scale on questionnaire was multiplied to the weightage given of the likert scale as mention above. At the end these multiplied weightages are summed up in the separate column as a cumulative motivational score of each motivational factor. Based on highest score of individual motivational factors it will be given higher position and vice versa. In this way position of each motivational factor of engineers and doctors are placed in a comparison table for illustration of motivational factors priority.

1.7 Thesis organization:

First chapter consist of introduction of the research work. Second chapter consist of literature survey. Here the motivation is defined, what is motivation at work place means and what are the theories involve in motivation. This chapter also includes the research carried out on motivation factors of engineers and doctors internationally and in Pakistan. Third chapter is research methodology which describes method of research, selection of motivational factor and about questionnaire. Fourth Chapter consists of results of the research work. Fifth Chapter is about discussion of the results.

Final part of the paper is conclusion and future research, recommendations and in the end references of papers/ materials are written which was used in carried out this research work.

CHAPTER 2: LITERATURE REVIEW

2. 1 Motivation:

Motivation is the cause, theme or will for doing something. It assembles the skills, intellectual and knowledge and lightning up the abilities to perform and work well. It makes people to find new ways to solve problems and take up the new challenges. In other words it makes people to work better and improve its quality.

There are many definitions as well as theories presented by the authors. Kanfer (1990) and Clark (1998) has given 30 and 40 respectively research based theories. Similarly (vroom) designs its own simple motivation theory. This theory illustrates that motivation is related to the choices of person's interest. Kleinginna and Kleinginna (1981) had defined 98 motivation theories. However definition changes according to employ and different operational work**.** Many operating definitions would give different interpretations of interest (Kazdin, 1998).

Motivation and behavior are interlinked. Behavior is always a goal oriented. One of the aspects of behavior is activity. This activity is related to motives. Motives are social motives (social respect, social wellbeing etc.), homeostatic motives (food, thirst etc.), non-homeostatic motives (shelter, environment know how etc.). So to predict behavior, motives need to be understood. Another definition is described on the internet is "Willingness of action especially in behavior is called motivation" (wikitionay).

Luthan (1998) describe motivation as, "a process that starts with a physiological deficiency or need that activates a behavior or a drive that is aimed at a goal incentive".

Besides money, there are number of motivational factor used in the industries to motivate people to increase the productivity of employee. According to (Stoke, 1999) many researcher believe organizational success requires a great source of commitment from the employers and commitment comes from the motivation which is a part of human psychology. Many researchers write other terms for describing motivation. Including Clark (1998), Ford (1992), Locke and Latham (1990), Madsen (1961) asserts that "motivation is the process that arouses, energizes, directs, and sustains behavior and performance". Similarly Minner, Ebrahimi, and Watchel, (1995) "state that in a system sense, motivation consists of these three interacting and interdependent elements, i.e., needs, drives, and incentives"**.** Interacting and interdependent elements are the needs that are social, homeostatic and non-homeostatic motives, drives are the effort which is applied to fulfill the needs and incentives are final outcome or goal (1976; Kanfer). Motivation boosts our knowledge and skills thereby improve the work. So the motivation doesn't have direct relation to perform work. Motivation is a hidden and psychological phenomenon Kanfer (1990, as cited in Bjorklund, 2001).

2.2 Motivation at workplace:

Motivation at work place suddenly makes our mind to link with motivation of employee in the work place. There are many ways to describe employee motivation, these motivation are in terms of rewards, incentives, recognition etc. These are basic work place motivation for employee often describe at internet. But work motivation is "A psychological process resulting from the reciprocal interaction between the individual and the environment that affects a person's choices, effort, and persistence" (Latham & Ernst, 2006). It is also called motivation at work place. (Campbell & Pritchard, 1990) describe "Work motivation is described as the psychological processes that direct, energize, and maintain action toward a job, task, role, or project". However (pinder 1998) elaborated and define work place motivation in simple terms

"Work motivation is a set of energetic forces that originate both within as beyond an individual's being, to initiate work-related behavior, and to determine its form, direction, intensity, and duration."

This definition is better than other because it defines human behavior. Human behavior is such as to start job, company joining, esteem, encouragements, resigning company etc. Energizing forces means full and planned effort that is deploying into the work. That force determines its direction or way to achieve the require output. Intensity means its power to perform that work which is arise at that particular time and duration is the amount of time required to achieve the goals at the job/work. So in short words, work motivation is set of forces related to human behavior deployed for certain time, power and for specific objectives. Two things which pinder have mentioned in his definition and absent in other researcher work are

- Force
- Hypothetical model

Force is the basic driving force or unknown power that made to perform the work. This definition represents a brief construction model, hypothetical or formulation of motivation, its process and its contents.

2.3 Motivation Theories:

21st century is providing challenging environment for the industries/organization growth. Now a day's managers are finding ways to get better output from workers. One of the challenging issues to handle by the manager is "employee motivation". Motivation concept was introduced in the early 20th century. During Past industrial revolution era where a workers were forced to do work, threatened and punished, at that time motivational concept was introduced and applied. In post revolution period, it was being observed that forcing, threatening and punishment policies are strongly affecting the worker performances (N. P. Filho, J. P. Medeiros, and A- Motivação). So

motivation topic becomes important in the literature. Many researchers (Hertzberg, Maslow, Mcland and Vroom) proposed several theories and framework of motivation. Every researcher presented his theories according to organizational settings. Each theory has different objections. However it is difficult to explain all theories of motivation. Some of the important theories, which are often illustrate and taught, will be explained.

There are two types of motivation theories:

1. Content theories

2. Process theories

2.3.1 Content theories:

Content theories are also called "need theory". Content theories explain what motivates people. Needs may be of different type but it is assumed that need is common for survival of all human beings (Michal Kirstein, august 2010). Mostly early theories presented in 1950 explained that needs are the important aspect that drives people to work (Dunford 1992). In early stages, Motivation was illustrated in terms of need (Greenberg/Baron, 2003, p.192). Kanfer (1991) emphasis that need is a tension behind changing in behaviors.

Four major content theories are:

I. Maslow's theory
II. Herzberg theory
III. McGregor proposed theory X and theory Y
IV. Acquired Need Theory

I. Maslow's theory:

One of the key theories on motivation was Maslow's need theory. Maslow defined hierarchy of needs in an ascending order. These needs are

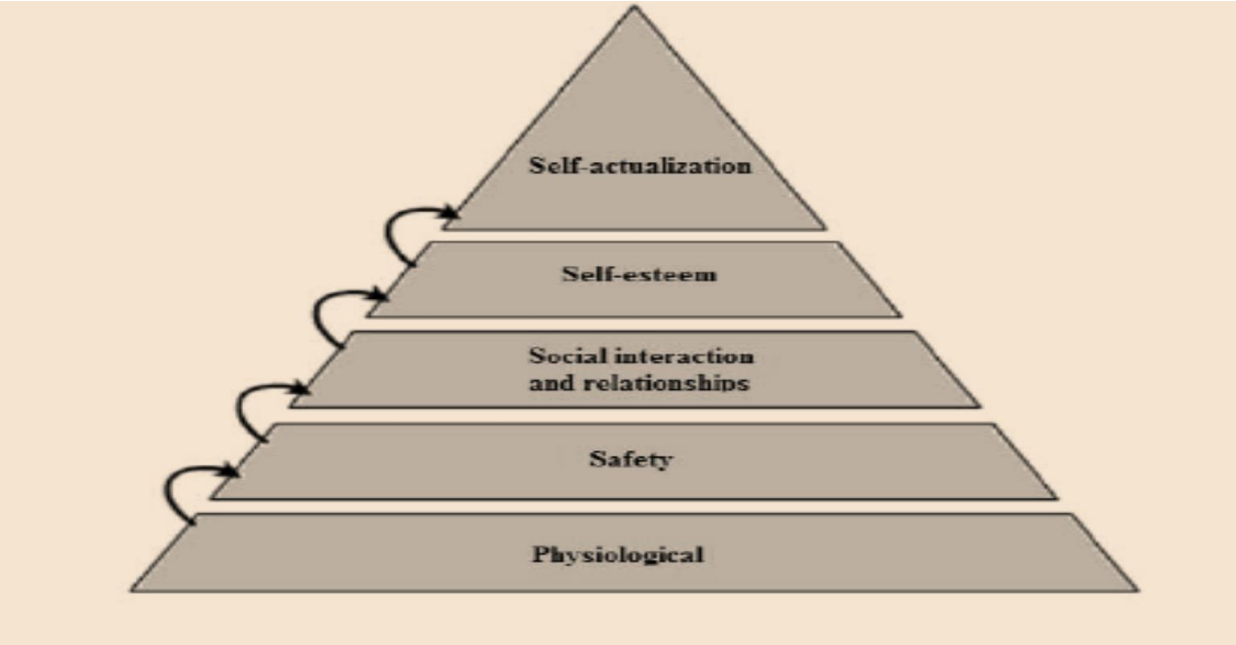
- Physiological needs*:* It is the bottom part of the pyramid. It involves need of sex, sleep, hunger, thirst, money etc.
- Safety and security needs: it is the second part of the pyramid. It includes safe working condition, job security, benefits, protection from physical threats etc.
- Social needs: it is a 3rd part of pyramid, it is the belongings, love, affection to people, home, siblings, society, working condition etc.
- Esteem or egoistic needs: it is a 4th part of the pyramid which involves respect, recognition, achievement, reputation etc.

- Self-fulfillment or self-actualization: This need is at the top of pyramid. It is the ability of one becoming what he is capable of (ibid. pp.372-382). Self-fulfillment or self-actualization involves two parts: (motivation&behavior.pdf page 7)
    - Competence
    - Achievement

Competency is the ability of person to do everything professionally. It links to professional growth. Achievement refers to achieve everything what he wishes (it is the maximum output of individual potential or it). At this stage people are called satisfied people. However people are not fully satisfied (Fincham & Rhodes, 2005).

According to Maslow there are five steps of needs, once the lower needs are satisfied then next need then move on to the next need. If first need do not satisfied then oneself cannot move onto the next need e.g. if somebody don't have money how will be able to think for the esteem needs. This is a practical theory. It is also applying still in the industries. Ronen (2001), collected data from 15 countries and discover that needs are same as depicted or introduced by the Maslow.

Figure: 1- Maslow's hierarchy of needs (Hermano P.de Moura page 1)



Maslow theory is easily applied to industry. it infers a lot of motivational factor (Greenberg/Baron,) Behn (1995, p.319) proposes "meaningful work" motivating factor, Mitchell (1982) proposed to use "autonomy" and "recognition" for satisfying high level need of employers. Kumar and Sharma (2001) proposed that "important work" is a good source for achieving high needs. This factor "important work" is common in Maslow and ERG theory Kumar and Sharma (2001).

Since Maslow theory is defined in a very simple way (Pinder, 1998).It transforms complex matter into an easy and simpler way ((Dunford, 1992, p.76). Yet it has objection proposed by different researchers.

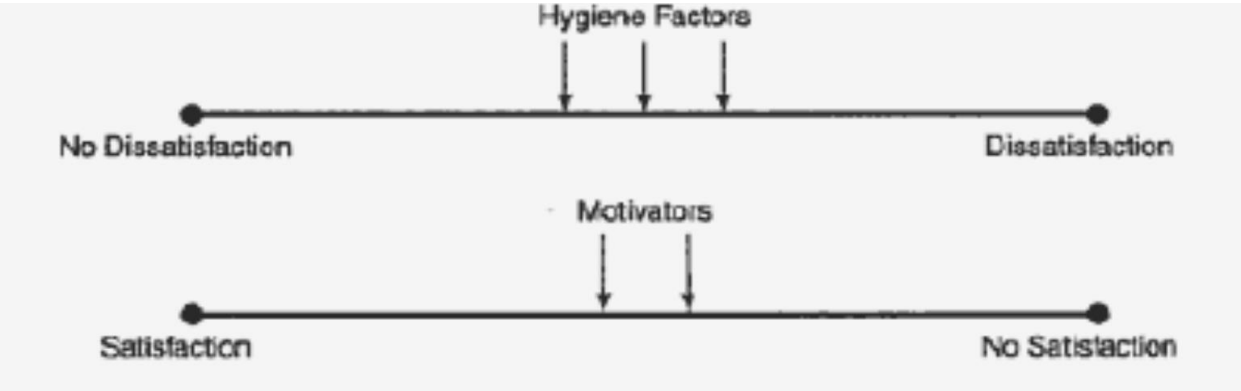
1. Experiment shows Poor strength of Maslow theory in organization.
2. Every person have different motives, it's not the only need that motivates people so this theory is a general theory not a specific (Fincham & Rhodes, 2005).

Watson (1986) tells this theory as "next to useless". It is source of distraction for the manager from the employee.

II. Herzberg theory:

In 1959, Fredrick Herzberg's presented two factor concepts. He elaborated two concept i-e satisfier/factors which increases satisfaction and termed as job motivator/intrinsic factors opposite to this is called no satisfaction. Other is dissatisfaction factor/extrinsic factors which increase job dissatisfaction are termed as hygiene factor. Opposite to it is called no dissatisfaction. He believed that job satisfaction factor or motivating factor is reward, recognition, reputation and growth and hygiene factor are working environment, fairness of company policy and administration, and interpersonal relationships. Motivation cannot be achieved if hygiene factors are not removed and motivating factors are not implemented.

Figure: 2- Herzberg's illustration of hygiene and motivating factors (Darijia.Virbickaite page 21, 2012)



Like Maslow, Herzberg doesn't specify the order of needs but accommodate those needs into it. First three stages of Maslow's come into the hygiene factors i-e Physiological need, safety need, social need and other two factors esteem needs and self-actualization come into "job enrichment" or motivation factors domain. This is illustrated in following table

Motivation table combining Maslow and Herzberg's work (Steve Y.W.Lam and ConradH.W.Tang) (Table:1)

Motivational Factors	Priority of Human Needs	Examples of Needs and Motivational Factors
Job Enrichment /Long-term Factors	Level 5: Self-realization Needs	Achievement in work Challenging job
	Level 4: Esteem Needs	High position/ status Advancement recognition
Hygiene /Short-term Factors	Level 3: Belongingness Needs	Affection from team members Professional affiliations
	Level 2: Safety Needs	Job security Safe working environment
	Level 1: Physiological Needs	Salary Housing

*(*Angela Rodda December 1997) has given empirical result that removing dissatisfaction has increases the efficiency of employees without implementing job satisfaction or motivating factors in the organization.

Support for a Herzberg's theory:

Many researchers are found to be in line with the Herzberg theory. In 1973 French and associate conducted studies and found that company policies and administration was the source of dissatisfaction and responsibility, achievement and reputation was a source of motivation factor.
Similarly different researcher carried out study. Researchers include (Behling, O., Labovitz), (G., & Kosmo R. (1968), (Kendall, E.L. & Robinson, C.C.(1975)), Gardner, G. (1977), which provide their findings that motivation factor and hygiene factors were same as indicated and proposed by the Herzberg.
There are number of industries where the research work was carried out and it founds to be applicable.

Objections on a Herzberg's theory:

There are numerous studies found where Herzberg theory is not valid in many different environments **(**Dr. Muhammad Ehsan Malik1, Basharat Naeem).

- Maidani, E. A. (1991) conducted a survey to test validity of Herzberg's theory. It was found that public sectors employed engineers and accountants are more satisfied and they give hygiene motivation factors are source of motivator. This is against the Herzberg's theory because hygiene factors are the source of dissatisfaction.

- Another doubt which was imposed on the Herzberg's is that it is applicable to all gender, age, demographical, position, status, background and so on. But study conducted by Wiley, C. (1997) in different organization, different people, different ages of person and different demographical person. It was observed that persons from different back ground, age, demographical back ground have different motivation and hygiene factors.
- Another criticism was on dichotomous nature of Herzberg. Shipley, D. & Kiely, J. (1988) conducted a research work in 82 British firms. A study found different motivational factors. One of the factor i-e "work itself" found to be a hygiene factor which was according to Herzberg's is a source of motivator.

III. McGregor theory X and theory Y:

In 1960 McGregor proposed theory X and theory Y. Both theories deal with managerial behavior towards employees. Theory X assumes that average person believed to be irresponsible, they don't want to work and they need some extra pressure from the management or outside the organization to work. Theory Y believe that average person employed in the organization is self-directed, ability to do job, seek responsibility and accept responsibility. In other words they are intrinsically motivated. Both theories are important for the manger to understand. Many researchers interpreted different motivational factors from theory X and theory Y. Some of them are

- Involving employees to decision making
- Create competitive and creative environment
- Promote Professional environment in organization
- Providing and maintaining good relationship among employs (Robbins/Judge, 2008)
- Work life balance among worker (Behn, 1995)

Watson (1986) proposed in his work that this theory is helpful for the manger if he himself willing to be motivate employees.

IV. Acquired need theory:

Another big contribution in the need theory was David McClelland (1987) he proposed "AQUIRED NEED THEORY". It is a well-known theory (Porter et al, 2003) but unfortunately it is not practical in daily life as thought (Robbins/Judge, 2008). David McClelland (1987) describes this theory in industry/organizational context. This theory was based on different needs associated with the person during his course of life. These needs are part of life and continue to change with the preferences' of life, experience and age. So based on this theory it is termed as "AQUIRED NEED THEORY". (McClelland 1987) disintegrate acquired need into three parts:

- Need of achievements
- Need of power

- Need of affiliation

Need for achievement: This is a very important need.it is needed by the seekers who want achievement. High achievement brings satisfaction to the people and brings motivation to the people (Porter et al, 2003). Characteristic of high achievers are (motivation & behavior)

- They are risk taking
- They are confident in their tack
- They are competent
- They are more willing to take personal challenges
- Focus on the personal achievement

High achievers tend to focus on the feedback of their performance and their work. With the help of feedback they can relate performance to success and failure. This way they can improve their performance (Aswathappa, 2007).

Need of power: Power is "the capacity or ability to direct or influence the behavior of others or the course of events" (Dictionary). Need of power is the ability to have a control over environment and people. There are two types of powers: (Ahlstrom & Bruton, 2010).

- Personal
- Social

Personal power is related to the interest of own people and social is related to have control over the social environment. People who have powers are more willing to take risk, have influence in people, can work for the willingness of society etc. so it's a need for the people and manger must know it.

Need for affiliation: "Officially attach or connect (a subsidiary group or a person) to an organization" (Dictionary). As discussed in Maslow that this need is a common for person in every filed and in every status. It resembles with the Maslow's theory. Affiliation includes interaction of employee with each other and with their siblings and their family. Good affiliation in the organization means interaction, communication, discussion and have a great deal of understanding among employees. When this need is fulfilled people will prefer to take a job that includes high social interaction with each other (Porter et al, 2003). This is a good source of productivity for the organization (Darija Virbickaitė, 2013).

2.3.2 Process theories:

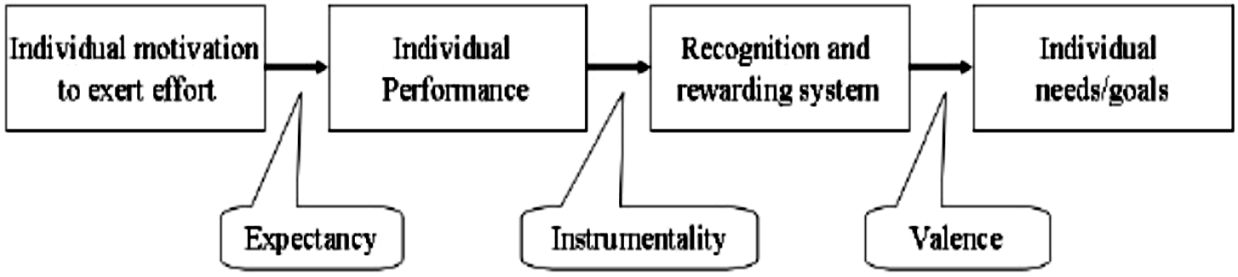
I. Expectancy theory

Process theories describe how motivation occurs in a person. It often describe the behavior that behind the certain choices (Michal Kirstein). There are number of theories which are presented by author. One of core theory which is presented is "Expectancy theory". This theory was proposed by Vroom in 1968.It is a best theory among all. It consists of three parts:

- Expectancy: it stands for the expectation that certain effort in certain domain of work will give good or positive outcome/performance.
- Instrumentality: Above performance will give certain reward. That may be for recognition etc.
- Valence: Valence stands for that certain reward will fulfilled or satisfied his needs. Valence can be broadly defined to three divisions. Positive valance is that reward will satisfied more than his need. Negative valence will satisfied less than his need. Zero would be equate the need with rewards (Michal Kirstein).

This is very important for the manger to understand it. These above parameter are translated into simple diagram.

Figure: 3- Expectancy theory (Yair Re'em page 30, July 2011)

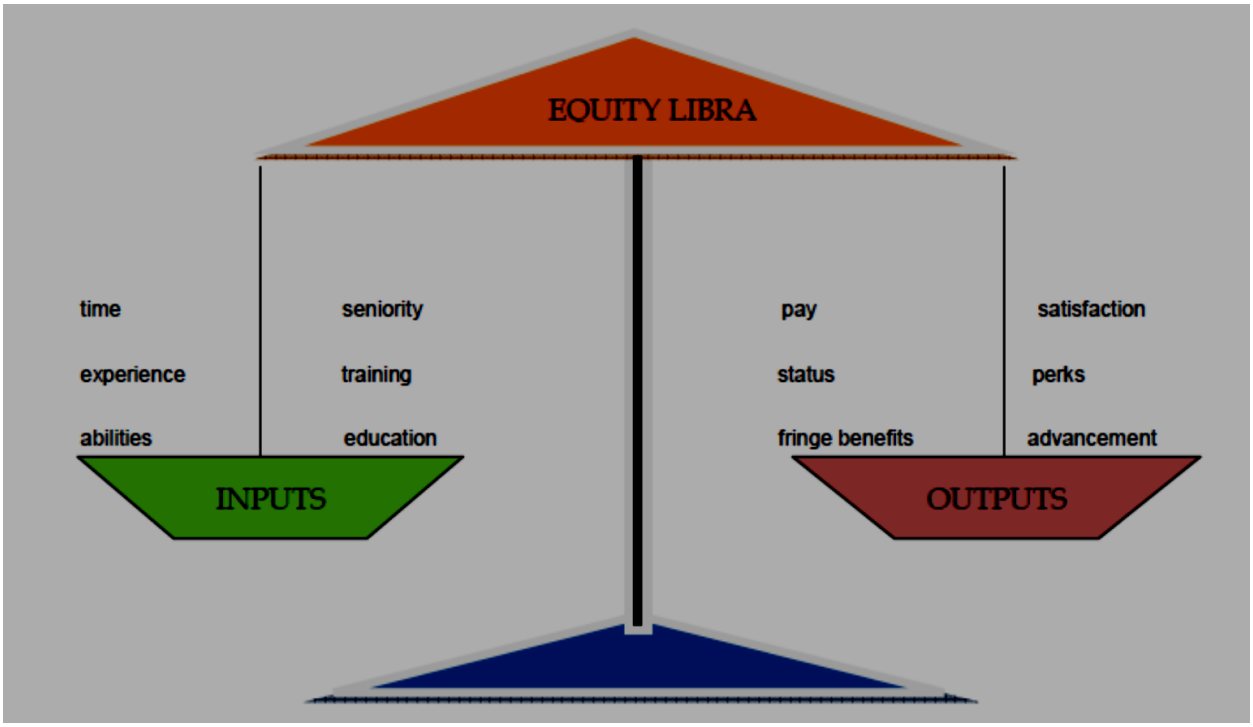


In organization terms the expectancy relate to training program, interaction, social relationships. Instrumentality means certain certificate, medals, money etc. Valence means growth, success, achievement etc. There could be many important other parameters than this which can be included but these are very important for the managers to have a close look on that and provide according to that. (Fincham & Rhodes, 2005) conclude that people will work hard. (Landy/Coote, 2010, p.364) concluded that certain emotions are the basic force that effect this theory. Emotion at site is important and social relationship can misbalanced the performance and outcome of individual. At the end it will demotivate employee.

II. Equity theory:

Equity theory is proposed J. Stacy Adam's in 1963. According to this theory employee always compare his input (effort, skills, time, experience, training etc.) with the output (rewards, prize, pride etc.). This is a very common fact of employee in any industry. If there is difference in equity then worker/employees will be demotivated and output will be lower productivity. If there is no difference then they are motivated and resulting higher productivity. This theory is very good for employee one who is giving his time would be able to analyze that what are the tensions or what he needs to do to reduce it (Landy/Coote, 2010). According to Adam Employee seldom perform social comparison with each other. If there is same output/input ratio of two employees then both employee will be motivated otherwise demotivated e.g. If one working is giving his best throughout 24/7 and getting low wages/reward and in comparison, another person who is working less than his time and getting relative high money/reward then first worker will be demotivated. It benefit's employee to ensure its own performance but also helpful for manger to keep workers motivated. Important things to be in mind that the process of equity should be clear and fair (Greenberg/Baron, 2003). If the process is not cleared then equity will be difficult to maintain.

Figure: 4-The Equity diagram (Michal kirstein,August 2010,page 20)



III. Goal setting theory*:*

Process theory is incomplete without mentioning of goal setting theory. This theory was introduced by Locke and Latham in 2002. (Latham & Yukl, 1975) defined goal as "what an

individual is trying to accomplish through effort and behavior". According to this theory goal should be defined by the top official to himself and for the workers. Difficult goal would bring all the skills and knowledge of the employees, more effort will be exerted to get the work done. This will result an increase in motivation. According to (Darija Virbickaitė) difficult goals are the cause of job satisfaction. Achieving goals, would give confidence in their performance and job satisfaction will be achieve. (Latham & Yukl, 1975; Locke & Latham, 2006) suggested that performance will be increased in goal setting environment rather than no goal setting environment. Feedback is important in the goal achievement. It is helpful in counter check for the employee whether their performance is up to mark or not, any quality or quantity of work left behind etc. According to feedback they can even perform better and will able to trace more difficult goals. Inability of the person/employee in achieving the goals is an important (Michal Kirstein). Latham and Locke (1979) argued that this theory can cause demotivation in many cases e.g. if the goals are difficult to achieve, inability of the person is not taken into account, difficult goals are set, account of goals, unrealistic goals, etc.

IV. Job characteristic model*:*

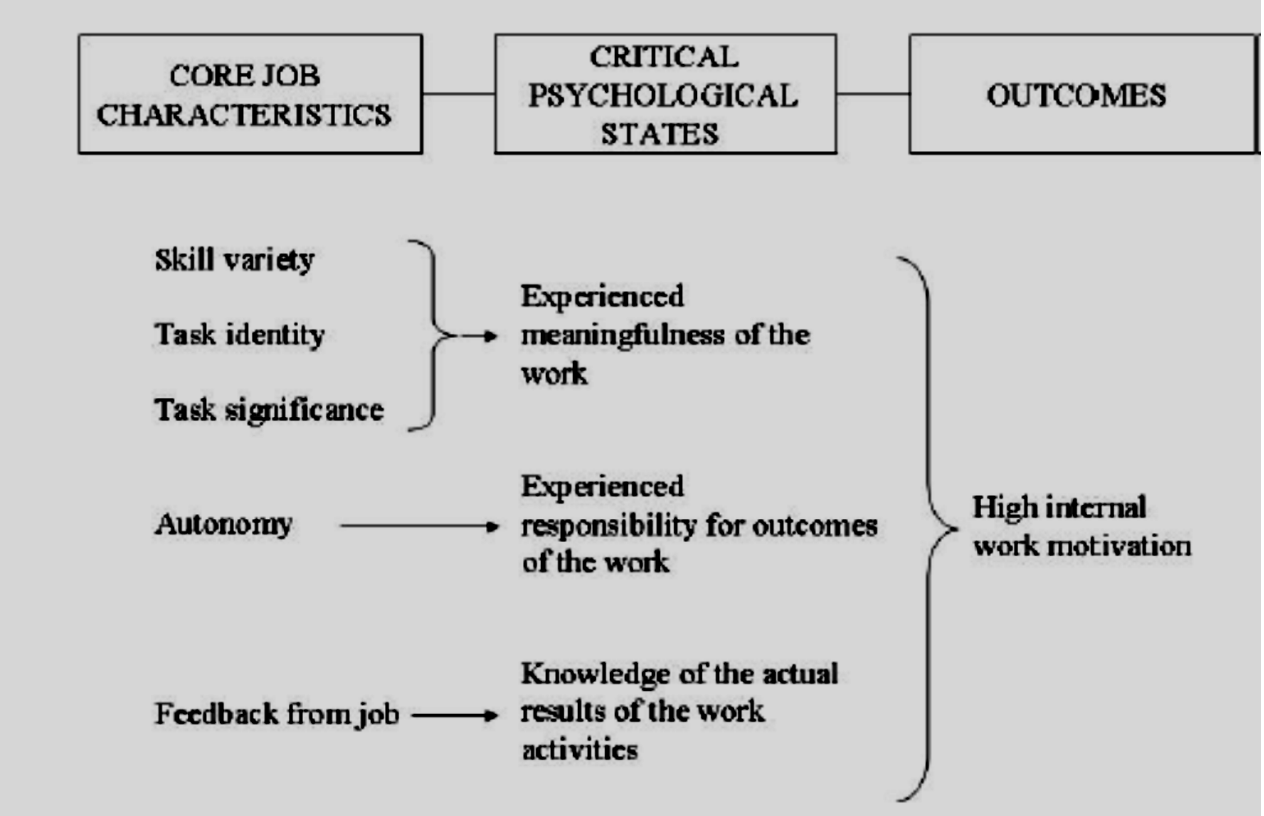
In 1980 Hackman and Oldham developed a model which is known as job characteristic model (Figure: 5). This model defines five job characteristics which fulfill high internal motivation. These five are explained as

- Skills variety: It is the characteristic of job which demands involvement of multi skills in certain work.
- Task significance: is the job characteristic which point out the importance of job task which is being carried out.
- Task identity: It involves the degree to which a person understands or involves the identity or recognition of its task.

First three characteristic deals i-e Skill variety, Task identity, Task significance with meaningfulness/importance of work because these three will psychological affect the employee that there task is worthwhile and they are important part of organization.

- Autonomy: It is the 4^{th} characteristic of Oldham model which deals with freedom, making or scheduling of program, deciding about goals, assignment of tasks and accountability of its own task. It makes or understands oneself that he is the responsible of his own effort.
- Feedback: is the 5^{th} characteristic of Oldham model and very important principle of TQM. It deals with knowledge/views taken from the work carried out. It is used to compare individual performance against the performance standard. This will help to improve quality of work. Output of all these five will give low absenteeism, high motivation and high productivity (Durant et al., 2006).

Figure: 5- Job Hackman and Oldham job characteristic model (Yair Re'em page 33 July 2011)



This theory has some defect that it is for the high need. This model is good for the people who want to achieve something big. It requires a lot of knowledge and skills to be able to qualify or perform the tasks (Hackman and Oldham, 1980). According to (Hackman, 1987) proper training, good education would be suitable to meet job characteristic model.

2.4 Motivational factors among knowledge workers:

Things are changed from pre-industrial time when workers just work for money and industries were small enough, less knowledge worker, lack of technologies etc. Now industries are changed to more specialized, bigger and employee based (Suave 2007). Competitive advantage of companies lies in the throughput of the knowledge workers (Cnagadeepa). In modern era, intellectual capital is considered to be valuable asset rather than physical capital (Karen Carleton). Intellectual capital in any organization corresponds to knowledge workers. Knowledge workers are literate person which includes people like teachers, lawyers, physicians, nurses, engineer, scientist (David e Frick). This term was not known before (Peter Drucker in 1959) was the first person who uses this term and gives recognition literate people working in any organization. There are lots of definitions proposed by different researchers but the simplest

definition is that knowledge workers are those who utilize their knowledge in the organization or more specifically at work place (Peter Drucker).

Knowledge is the input which gives better output (Drucker 1992). Globalization and technology makes the environment more tough compatible and importance of knowledge worker increased. Manager and organization needs to develop, maintain and retain knowledge workers (Karen Carleton). Motivation is the one of the aspect that helps them to do so. Motivation in the knowledge workers keeps on changing with the passage of time (Karen Carleton). It is a complex phenomenon what motivates knowledge worker whether environment or Creativity or Grooming or Knowledge? etc. (Alberto Petroni, Pierluigi Colacino) carried out studies on knowledge workers i-e engineers and scientist. He found the one of the important factor which is acting on satisfaction of knowledge workers i-e intrinsic motivation. Intrinsic motivation includes challenge, development skills, creativity and professional environment. High intrinsic motivation produces high job satisfaction in knowledge workers. Old days are gone when workers work for the money only. Although money is still one of the important motivational factor because we have to pay for our different needs related to body, living etc. but literature and research work explains that there are numerous motivational factors which are important than just money (Alberto Petroni, Pierluigi) (JON.D) (Magnus Dahlberg, Andreas de haan), (David e Frick) (Ik.Muo), (CCLFI). (Magnus Dahlberg, Andreas de haan) analyze the importance of motivation factors in the knowledge workers and found, meaningful work, Inspiring work, Professional development of skills and Autonomy are the top motivating factors for knowledge workers in the organization. Important thing in his study that monetary rewards was at the bottom, which is in accordance with many researchers work that rewards and incentive are not the only and top motivating factor for knowledge workers. (Karen Carleton) work on motivating knowledge worker is to provide meaningful work, career and development work, give them adequate resources, recognize contribution and provide supportive environment, contribution in the environment. (David e Frick) research work on motivational factor of knowledge workers in US and found that meaningful work, belief in mission, public service and opportunity to advance is important factor of all and insufficient resources, bad managers and lack of management support were the top demotivating factor among them. Similarly (JON.D) presented three motivation factors for knowledge workers i-e "Autonomy, Mastery, Purpose"

- Autonomy: it means responsibility of his own work, power to plane his work, organize people etc.
- Mastery: to do better and better in his assigned or given work.
- Purpose: what is the purpose of his work? Is it beneficial for him, organization, and people?

Likewise (Ik. Muo) identified top motivating factors of Nigerian knowledge worker: training, financial rewards, empowerment, flexibility in the workplace. However there are two most important motivational factors in his study i-e equity and empowerment. Equity is at lower place among the knowledge worker. This motivating factor corresponds to equity theory (J. Stacy

Adam's in 1963) that fairness in the input should match the fairness in output. It is a main source of motivating for many employees. Unfairness will lead to demotivation. "Empowerment" is an important motivating factor that can boost the motivation among the knowledge worker. Empowerment enable a person to take more risk make innovations, get challenging work, fear of failure etc. According to (TR, MS, 2007) empowerment include power in to give decision making to employee, autonomy, to do things Creativity, confidence and encouragement to employee. Giving empowerment will boost performance of employees (TR, MS, 2007).

Above researches points out common motivating factor among knowledge worker is "knowledge management" which appears in different motivational factor shape like learning organization, training and continuing education. Knowledge management means sharing and developing of knowledge. (CCLFI) has pointed knowledge sharing will not increase by incentives and reward but by senior management commitment and by convergence of personal and organizational goals. A case example of SIRIRAJ hospital where chief officer was selected through his knowledge sharing abilities and in health department of Philippines, knowledge management teams worked on how they maximize the convergence of organization and personal goals.

Motivation affects the productivity of organization (Magnus dehlburg, Andreas de haan) and as well its own. (Magnus Dahlberg, Andreas de haan), (Charles Albano), (Peterson and bears (2004) believe that there is a direct proportional relationship between motivation and productivity. (Charles Albano) pointed that motivation increases the productivity of the knowledge workers and if motivation increases then productivity would increases and vice versa. There are many motivating factors that affect the overall productivity of workers. According to Peterson and bears (2004) research; "Rewards, Actual job work, Personal growth and Development, team support and work environment" are the top motivating factors among IT and financial services knowledge worker and these factors have a strong effect on good performance and increases productivity in those employee however demotivating factor were "work environment and consistent pressure/load" leads to bad performance and poor productivity of the knowledge workers. However it is important that there should be understanding of motivations among officials and employees working in organization. (Babcock, 2005) stated that there is a huge gap of understanding motivation among human resource professionals and employee in any organizations. According to (Ik.Muo), four motivation variables were benefit, salary, safe environment and job security is top motivating factors for the employee but according to human resource professionals supervisor relationship, management recognition of employee performance, employee and senior management communication are the top motivating factor for employee. Manager is the channel of communication between human resource professionals and its employees. It is important for the manger to know the motivating factors of employees. According to (Amabile & Kramer) manger should know the following motivating factors of knowledge workers employees

- "Sense" which relates to feeling of something done, sense of achievement etc.

- "Making progress" is the other factor that relates to progress of worker it includes promotion etc.
- "Meaningful work" means work that meant to be important to him and organization

Similarly manger must know the motivating factors of future knowledge workers. Future knowledge workers are students. (Varpumaria Jeskanen, Oscar Jaime Guzman Madariaga) students in two technical universities of Sweden and Finland give importance to personal life, career opportunities. Self-development in the end reward system. According to (Michal Kirstein) job security, interesting work, personal loyalty to organization is the important factor for future business students. Similarly High pay, job security, rewards and recognition is the important motivating factors for medical students.

Reduction in this gap is very important because motivated Knowledge workers working in any profession whether medical or engineering is beneficial to the productivity and performance of any organization. Companies/organization or any sector that irrelevant of any profession medical or doctor will earn more than the company who have less motivated knowledge workers e.g. Google, Microsoft and Genentech (biotechnology corporation) have high motivated knowledge workers with Microsoft one of the profitable and earning organization on the world (Drucker 1992) and genetic is one of the world leading revenue medical corporation (Wikipedia).

2.5 Motivational factors of employees in diverse Engineering industries:

2.5.1 Motivational factors in Construction industry:

Construction industry is a labor intensive. Lot of equipment and work force are deployed in it. Many Researchers studied relationship of motivation in construction industry for 40 years (Schrader, 1972; Hazeltine, 1976; Borcherding 1977; Laufer and Jenkins, 1983; Maloney and McFillen, 1983, 1986, 1987; Olomolaiye and Cox, *et al.*; Uwakweh, 2006; Doloi 2007; Kazaz *et al.*, 2008) because motivation is significant in construction industry. Every organization/industry is keen to increase its productivity. So manger uses one of tools that increase productivity of industry/organization i-e employee's motivation. Similarly same is the case in the construction industry. (Raza Ali et al) believed that Productivity and motivation are interlinked in the construction industry. There is a direct relationship between motivation in employees and productivity in construction industry. More motivation in employee will lead to more productivity (Kazaz et al (2008). This will increase overall productivity (Hashim 1995).Hence increasing overall productivity of each employee at the construction work would have significant impact on project outcome (Zakari *et al.*, 1997, Bajaj, 2006, Kazaz, *et al.*, 2008). Money is assumed to be important motivation factor of employees in construction industry. Monetary is the main motivating factors for the people. Monetary motivational factors are common in many countries but in underdeveloped countries it is a vital need. (Raza Ali Khan, Muhammad Umer, Saqib Mansoor Khan) carried studied among unskilled labor in Pakistan construction industry.

This study reveals that economic motivational organizational factor has an edge over organizational motivational factors and Eid bonus was the top motivating factors.

- Bonus on eid (E.M.F)
- Professional education and training (O.M.F and E.M.F)
- On-time payment, pick and drop facility (E.M.F)
- Incentive payments and financial rewards (EMF)

(Anna B Parkin, Apollo Tutesigensi and Ahmet I Büyükalp) surveyed employee like manager, engineer, supervisor etc. in construction companies and found

- Motivating factors are "Money, Enjoyment, Food, Relationships, Home life, Responsibility, Expectancy, Recognition, Equality, Achievement"
- Demotivating factors are "Money, Enjoyment, Food, Relationships, Home life, Responsibility and safety"

First 5 factors are common in motivating and demotivating factors and money is crucial factor among other. It is easily understood that one of the factor when increase then other will decrease. So one will become motivating if money increasing but if money is not earning enough then it would be demotivating factor.

(E.O. Aiyewalehinmi) in his study, identifies 15 major motivational factors involved in the construction industry and found employee including manger, employee association, workers, officials including engineers are more involved in development of skill rather than money. The main factors which he identified are

"Worker's expectancy, Social and extrinsic reward, Job recognition, Filling of personal growth, Fringe Benefit, A work team, Social relations, Recognition, Challenging work ,A sense of achievement, Salary, Incentive Schemes, Work group, Interest". Similarly Ruthankoon, R (2003) targeted Engineers and Foremen in his research. He identifies "Achievement, growth, responsibility and advancement."

Engineers are the backbone of technical industries progress. Engineers are knowledge worker (David E. Frick) and they are very much sensitive for the motivational factors in the industries. It is important for the manger to understand motivational factors of engineer. (Prakash Rao B, Jaya Prakash S) investigate motivational factors for 59 engineers in the construction industry. He found

- Observed organizational support is the top most motivational factor for engineer because it gives strengthen and confident to workers
- Job Satisfaction
- Decision Making

Similarly (**R. Venkatesan, Koshy Varghese and K. Ananthanarayanan)** had surveyed large number of engineers, junior engineers and senior engineer in the construction work department and found top motivating factor were found

- Achievement
- Proper recognition and awards
- Interesting work
- Participation in decision making

Demotivating factor found were

- Poor work conditions
- Poor administrative policy
- Poor work relationship

Shoura M.M (1998) in his study targeted Engineers and Project Managers. He found out the main motivating factors in the civil industry are "Meaningfulness of tasks, self-sufficiency in doing job through continuous training" and further emphasized that interest in work also increase loyalty to organization.

2.5.2 Motivational factors in IT industry:

Pakistan IT is one of the leading industrial sector in Pakistan and its growing up (Steven M. Christy December 1992). However Pakistan IT sector need to be exploited and it should be in line with the south Asian performer, especially India. According to Ahsan (2008) Pakistan IT industry is $1/27^{th}$ of Indian IT sector. There are very less motivational studies carried out of employee working in IT sectors of Pakistan. Ahsan (2008) pointed out that motivation is very important factor other than soft issues encountered in the IT industry. It needs to be understood.
(Muhammad Wasim bhatti, Ali ahsan, Ali sajid, 2008) work on motivational factors of IT industry in Pakistan. They have developed IMFF framework for the IT industry. According to the survey among different employs, they have selected the motivational factors and ranked thirteen motivational factors i-e "Availability of perks (i.e. car, laptop, medical allowance etc.), Foreign trainings ,Availability of policies like health/life insurance, Pick and drop policy offered by office, Foreign official tours, Good Salary Package, Availability of external trainings, Good increment policy, overall good appraisal system, Good career path, Availability of in-door games facility, Empowerment, Availability of internal trainings".

This study is important for IT managers. This study filters all the motivational factors in the literature and presented the significant motivational factors. However lot of studies needs to be carried out in this regard.

2.5.3 Motivational factors in Software industry:

Software is an important industry all over the world. According to (McConnell, 1998) motivation is a soft factor need to be considered. Motivation is thought to be an important factor in software engineering and its absence or negligence is thought a key factor contributing for the failure of software projects (De Marco and Lister 1999). Recent research shows that in the software field, motivation in software engineer is strongly linked to success of projects (Procaccino et al, 2005; Hall et al, 2008).

There are lots of motivation models available in the literature. Authors uses different motivators as the basis of their models e.g. identification of task, performance etc. (Helen Sharp, Nathan Baddoo, Sarah Beecham, Tracy Hall and Hugh Robinson) have used the motivator literature of the software engineer and enlist it. The most important motivators which he has identified and have higher scores in the literature are

- Task identifications
- Employee participation
- Good management
- Good career Path
- Variety of Work
- supportive relationship
- Rewards and incentives

Similarly research study carried out in Sri Lankan software industries by (Fernando A, Ranasinghe G) and result proves that Job design, motivation and productivity are interlinked. Many motivational factors whether intrinsic (passion for job etc.), extrinsic factors (award, recognition etc.) or contextual factors (job environment, job security etc.) would increase software engineers' productivity.

Software industry is one of the key industries in Pakistan. (Dr. Ali Sajid, Hamid Nasir, hamidnasirAamir Shehzad, Zeeshan Mehtab) has pointed out many software issues in Pakistan software industry that are influencing and affecting quality as well as productivity of soft wares. Issues include "Motivation, Job Security, Salaries and Incentives, Employee's Sense of Ownership, Team Building, values, Individual Self Respect and Dignity, Open Communication, Skills Enhancements and Leadership Style". Motivation is the driving force which links all soft issues. It is the motivation that increases productivity and quality of a project or working condition (Ali Haider).

Same work is carried out by these authors (Muhammad Wasim bhatti, Ali ahsan, Ali sajid, 2008) in the software engineering industry. They have calculated motivational variance, this means that motivational factors which are not been recognized by the organization and it is becoming responsible for the low motivation of employee. Three factors which are at the top of the list are

- Availability of bonuses
- External official tours
- Excursion trips and External trainings

2.6 Motivational factors of employees in health industries:

Until now, human resource is overlooked in the health industry regulations/adjustments (Beaglehole R, Dal Poz M). Work force is an important aspect for the performance and the management of the health industry. (Rigoli F, Dussault G). WHO with (Chen L, Evans T et.al) has conducted survey to determine the shortages of labors, doctors, nurses, health facility, high migration, job satisfactions etc. Their studies found that there are shortages of healthcare workers in the underdeveloped country. It is estimated that nearly 4.5 million worker shortages in the in the worldwide and this quantity is huge in Asian and Africa (WHO) and have many vitals diseases as well like including HIV/AIDS (Raman VV, WHO).

There are still many problems are encountering in the health industries these problems are (Alshallah S: Radiol Manage 2004) technology requirements, skills shortages, technical people, condensed population and quality improvements. This problem is common in many countries but problems become enormous when serving worker are not satisfied and motivated with their jobs. This problem will affect overall quality of the performance of the health system (Mathauer I, Imhoff I 2006). Health sector is labor intensive system where they work according to their willingness, attitude and their motivation. According to (Garcia-Prado A), a part from the fact that good resource utilization will improve the health sector services but many authors believed that health worker motivation is the main component that affects the performance of health sector. The term "motivation" plays a crucial part. Low motivation will force worker to underutilize their knowledge, skills, expertise and consequently affecting health care performance (De Allegri M, Kouyate). High motivation will definitely boost their knowledge and force them to utilize their knowledge and skills for their betterment of patient and quality of health care (Leonard KL, Masatu MC). (Ahmad Azam Malik, Shelby Suzanne Yamamoto, Aurélia Souares, Zeeshan Malik, Rainer Sauer born) pointed that motivation not only helps them to perform well but helps in retaining the staff as well. Low motivation employee in health industry tends to move into the other cities where they find a good job. Many researchers work on migration of the health workers staff to other countries. They inferred that that low motivation, low job satisfaction was the main cause of migration followed by the brain drain of the young health workers. This migration is specifically to knowledge staff of the health workers. Many of the young students travelled to other countries for good job, good career development and well fulfillment of their needs. Migration of these heath worker to other countries/ may be from urban to rural cities (WHO) effects quality of health and the achievement of organization target (Dieleman M, Toonen J, Toure H, Martineau).

Illustrating all the importance there is need to study the importance of motivation in health industry however there is lot of research is carried out in a motivation topic (Franco LM, Bennett S, Kanfer R) but study is not implemented in the health sector especially in the underdeveloped countries (Mathauer I, Imhoff I). Very few researches have been conducted for the determination of motivational factors in the poor and underdeveloped countries (Dieleman M, Cuong PV, Kanfer R). Different researchers work on different motivational factors. Common motivation factors for many workers working hospital are pay and incentives. (Jeff Gow, Gavin George, Sylvia Mwamba, Lutangu Ingombe & Given Mutinta) on his work on incentives, proposed that incentives and allowance are important motivating factor among hospital employees. There is a large difference in pay and allowances between public sector health employee and private sectors hospital in Zambia. This has resulted migration of health workers to other countries as well as from public to private sector hospital. Supporting this motivating factor (Tanvir Alam, Shahi Md.) conducted a survey among the 40 MPO. Medical promotion officers are doctors. They have pointed that certain incentives may be in the form of retirement and other benefits, causing job dissatisfaction and demotivate doctors. Removing this factor would increase motivation and increase productivity. In accordance with the incentives, Dr. Benedict Yan conducted research work among the physicians in the Singapore. Among different factors; "financial remuneration" was found to be the important one for the physicians. Increasing financial remuneration (benefits/ pay etc. would help in motivation to work better in heath sector's services.
However "pay" is not the only motivation factor that increases employee motivation (A. Tsounis, P. Sarafis and P. Bamidis). (Mischa Willis-Shattuck**,** Posy Bidwel**,** Steve Thomas**,** Laura Wyness**,** Duane Blaauw and Prudence Ditlopo) in their research work, identified seven critical factors for the motivation and retention of the workers factors in developing countries. These seven were given below in descending order:

- Financial incentive
- Career development
- Hospital management
- Availability of resources
- Continuation of education
- Recognition
- Hospital infrastructure

Rural health work in Vietnam has given importance to firm/stable job, pay, training and de-motivational factor are salaries and difficult working condition. (Sukmider Singh bajwa et.al) work in Indian hospital shows that "skills", "task identity" and "task significance" is important motivating factor among doctors and "environment", "job security" and "compensation" is significant for nurses. Most important motivational factor among all was "feedback" among young workers.

Most important resource of the health system is physician. Physicians are the medical doctors (Wikipedia). According to (D'AunnoTA, Fottler MD, O'Connor, LazaroP, Azcona B) Physicians act as channel between the patient and health system. Physician role is significant for better production and services of health sectors. Health administration responsible for producing health services and doctor is part of administration which makes them to run smoothly (A.Tsounis, P. Sarafis and P. Bamidis). Analyzing/studying different motivational factors associated with physician, is complex (A. Tsounis, P. Sarafis and P. Bamidis). It is like counting sand particles of the beach. According to Hertzberg there are two factors which are affecting job satisfaction. One is extrinsic factor and other is intrinsic factor. The extrinsic factors which are affecting the doctor job is the pay , recognition, flexible working hours, and the internal factors are intellectual challenge, professional growth, grooming , strong in the skills etc. (A. Tsounis, P. Sarafis and P. Bamidis). (Kontodimopoulos et al.), (Niavis), (Kosmidis), (Gkavardinas) has study different motivational factors of doctors in Greek hospitals. All of the four different studies conducted by the above authors revealed following four common motivation factors of doctors and physician:

- Achievement: it means regards, pride, promotion etc.
- Job attributes: it is the involvement in decision making process, organizational process etc.
- Relationship with co-workers: it means coordination among supervisor, colleagues, seniors etc.
- Continuing education: this factor means with the passage of time there must be continuity of education for professional growth etc.

However the importance among these varies from hospital to hospital in Greeks. Some have given priority to achievement and some give recognition and co-worker as top factor. According to findings of (Lambrou P, Kontodimopoulos N, Niakas D) doctors of Georgia have given high motivational priority to "self-efficacy" and "pride". While in South African doctors has stressed upon "non-financial" parameters rather than financial parameters. Similarly German doctors have given importance to intrinsic motivation.

Pakistan health industry is not in good condition according to WHO it has been ranked 122 among the world. Ayesha Yaseen (March 05, 2011) has conducted a survey on doctors, in the civil hospitals of Lahore, Multan, Faisalabad, Rawalpindi and Bahawalpur. The important motivational factors which are causing job satisfaction in doctors were found promotion, recognition, meaning full work and pay. Factors which are causing dissatisfaction and lead to demotivation were poor/lack of service structure and important/meaningful work. (Aijaz Ahmed Sohag, Samina Memon, Mahmood-ur-Rahman, Masood Hussain Rao) has conducted comparative study on dissatisfaction factor among doctors in Hyderabad public and private sectors hospital, important de motivating factor were defined are work load , pay and perks an working environment. Similarly (Ahmad Azam Malik, Shelby Suzanne Yamamoto, Aurélia

Souares, Zeeshan Malik, Rainer Sauerborn 2010) had conducted survey among the different male/female physicians working in private, public and tertiary hospitals in Lahore. Different motivational factor were defined but the top motivating factors for primary and secondary hospitals are found to be

- Serving people
- Respect
- Good pay

While the same ascending order of motivational factors were common in public and tertiary hospital but opportunity for higher education ranked third in the position.

CHAPTER 3: METHODOLOGY

3.1 Research method:

Objective of this study is to find and compare the importance of motivational factor of engineers and medical doctors in Rawalpindi/Islamabad. Motivational factors are studied from literature survey and previous work on both the motivational factors of engineers and doctors. Motivational factors were narrowed down according to the importance and frequency in the motivational studies of engineers and doctors. To test these motivational factors questionnaire was designed. Those questionnaire includes five rating scale extremely important, very important, moderately important, slightly important, not important. The respondents were asked to mark relative importance of each motivational factor according to this scale. This qualitative assessment of questionnaire is then converted into quantitative assessment using a quantitative technique to make good understanding of views or opinion of the respondents and for better interpretation of results. After the survey difference in motivational factors of engineers and doctors were analyzed according to their demographical features.

3.1.1 Data collection:

In order to achieve the objectives main source of information getting is questionnaire. There are two ways used to collect data i-e online survey form and hard form. Online survey form is created in adobe form central. This online form was same as questionnaire designed and opens to all the respondents in Rawalpindi/Islamabad. Respondents were asked to fill online forms through Facebook and personal contacts. This method is easy for collecting or getting opinion from respondents that are far away from at a low cost and effort. However same form is email to engineers but email didn't become large source of data collection in this research than online survey. However internet based methodology of data collection was found to be suitable for engineers but not for Doctors because they don't have time to see this online form due to their professional demands. So questionnaire was also produced in hard form for doctors as well as for engineers. This method is very reliable than online because here people are given face to face instruction to fill the form up to the best required. Since it is a time consuming and requires more time and effort. In filling both forms of data collection it is kept in mind to reduce or stop bias research. People who were contacted through email were making sure that they will not again fill the same in hard form. Questionnaire with all its content provided to respondents in soft form as well as in hard form.

3.1.2 Questionnaire:

Questionnaire consists of three parts:

- Demographical part
- Instructions

- Rating table of motivating factor

Demographical portion consist of respondent information of name, age, gender, graduate/post graduate qualification, experience, government/private employee, and job experience.

Instruction part provides brief illustration of filling the questionnaire. In this part people are directed to mark relative importance of each motivational factor according to this scale and tick only one box for each factor. Similarly people are thanked by giving their time.

Last part of questionnaire contains list of motivating factors and in front of them 5 rating scale are given. These rating scale are extremely important, very important, moderately important, slightly important, and not important. This questionnaire is forwarded to engineers and doctors in hard and soft forms to mark relative importance to each motivation factor according to this scale.

3.2 Selection of investigation factors:

Large number of research is carried by different researchers on motivational factors of engineers and doctors. It is very difficult to choose motivational factors that are equally concern to both engineer and doctors. Motivational factors are derived from the research work of "Motivational determinants among physicians in Lahore, Pakistan" by (Ahmad Azam Malik, Shelby Suzanne Yamamoto et all), "In depth analysis of motivational factors at work in the health industry" by (sukhminder singh bajwa, sandeep singh vardi et all), "Effect Of Basic Motivational Factors On Construction Workforce Productivity In Pakistan" by (Raza Ali Khan et all), "Study on Motivational Factors of Civil Construction Site Employees" by (Prakash Rao, Jaya Prakash), Framework to Identify the 'Motivational Factors' of Employees; A Case Study of Pakistan IT Industry by (Muhammad Wasim Bhatti Ali Ahsan Ali Sajid), "motivating the knowledge worker" by David E. Frick, "Motivating & Managing Knowledge Workers: Evidences from Diverse Industries & Cultures" by Ik.Muo and Kovach's strong research on motivation factor of employers. As described above motivational studies on Knowledge worker is also chosen because knowledge workers mean literate person of the society. They include lawyers, engineers and doctors, accountants etc. so it was important to include motivational studies on these knowledge workers as well. In the end Kovach's research is included. It is important to mention his research. He had work on employee motivation in many organizations over 20 years. He pointed 10 motivational factors and studied in 25 organizations. So his motivational factors, his time and result were very important. Keeping in mind his motivational factors are used in various studies by the researchers (Michal Kirstein, Darija Virbickaitė), which points out its importance in the motivational studies of many researchers.

So combining all the studies total 89 factors was collected. By investigating all the motivational factors it was observed that most of the motivational factors were different in name but theme was common. Motivational factors were narrowed down from the motivational studies according to the importance, frequency, reoccurrences, repetition of names and themes. 16 factors were narrowed down for engineers and doctors and are listed below

- Job security
- Good salary package
- Promotions
- Financial benefits (rewards and incentives)
- Official tours (foreign/ local)
- Skills improvement trainings
- Higher qualifications opportunities
- Respect and recognition (from superiors and society)
- Relationship with coworkers (affiliation ,attachment, open communication)
- Equal & Fair treatment of employees (from superiors)
- Personal safety (insurance, pensions, target killing)
- Workplace conditions (Physical, temperature, atmosphere etc.)
- Job Autonomy
- Job empowerment
- Good Job timings (For balance between office and family life)
- Serving people/nation

Significance of selecting motivational factors in research study cannot be completed unless it does not support theoretical study. These motivational factors fit into these theories. Starting from Maslow's need theory, basic element of Maslow need theory is Physiological need and "good salary package" and "Financial benefits" corresponds to this need. "Job security" and "Personal safety" corresponds to Safety and security needs. "Relationship with coworkers", "Workplace conditions", and "Good Job timings" matches with Social needs. Similarly "Respect and recognition" will corresponds to Esteem needs of the model and the last "serving people/nation" fits into self-actualization. In 1980 Hackman and Oldham developed a model which is known as job characteristic model. Motivational factor "Job Autonomy" fits into this model. Another theory i-e equity theory was proposed which emphasis on equal treatment of employee. "Equal & Fair treatment of employees" corresponds to this theory. Expectancy theory which defines "expectancy" as expectation that certain effort in certain domain of work will give good or positive outcome/performance. Motivational factor like "Skills improvement trainings" and "higher qualifications opportunities" in employee will produce good performance. So there is strong validation of choosing these factors of research as it matches and fulfilling the strong theoretical support.

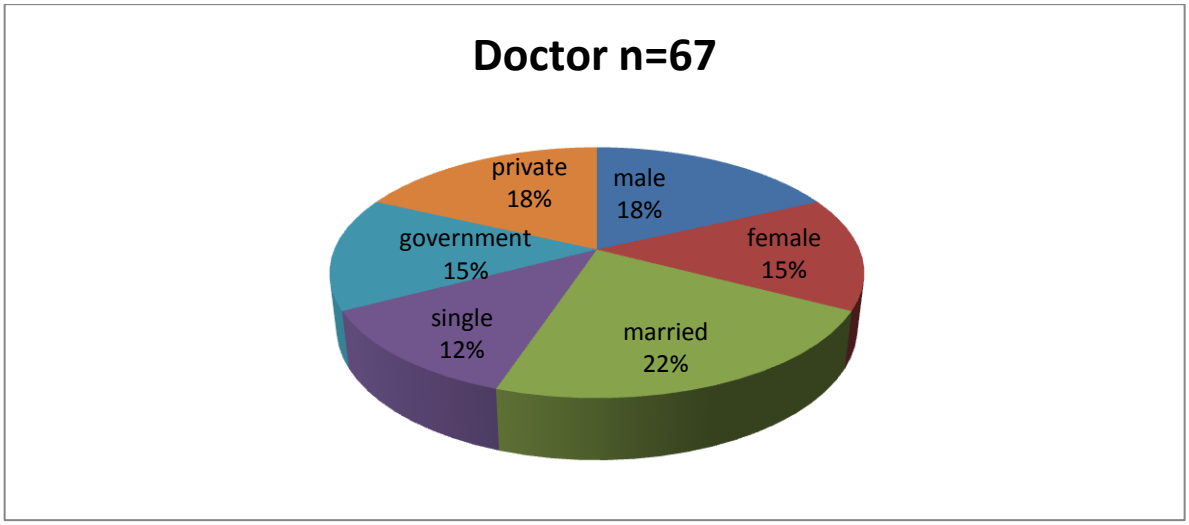
Demographical features are chosen because many researchers e.g. (Kovach's research) proposed a difference in motivation factors among male female in many researches. Similarly study proposed by (sukhminder singh bajwa, sandeep singh vardi, et all) shows a marked difference in motivational factors between gender, single, married, experience and according to qualification in doctors. (Darija Virbickaitė) work in the different students of Iceland's has showed a difference in motivational factors of engineering and medical students regarding age groups,

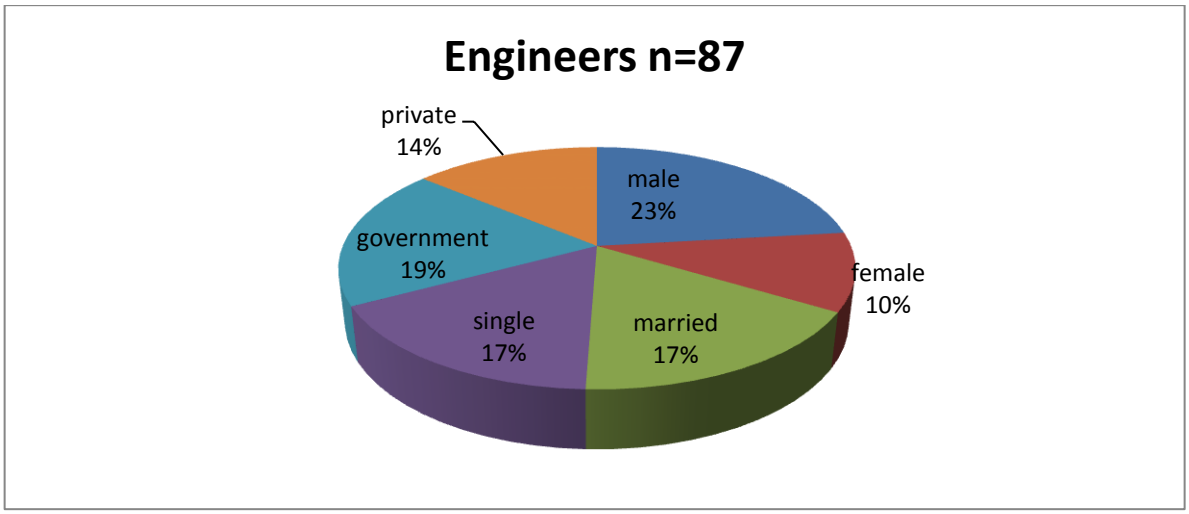
education and years of experience. Choosing these demographical features will elaborate and refined this study.

3.3 Sample:

In this research questionnaires were distributed among engineers and doctors living in Rawalpindi/Islamabad region.

Figure: 6-**Respondent characteristics:**





Questionnaire distributed among the doctors in the region. Out of 100, sixty seven (67) doctors filled the questionnaires. Male respondents were (37), female respondents were (30), married (46), single (21), government employee (30), private employees (37).

Similarly questionnaires distributed among engineers. Out of 100, seven (87) doctors filled the questionnaires. Male respondents were (60), female respondents were (27), married (44), single (43), government employee (55), private employees (36).

3.4 Data Analysis:

Data is analyzed through excel and SPSS software. Importance of motivational factor in each demographical group is finding through cumulative motivational score. In this method extremely important is given weightage "5", very important "4", moderately important "3", slightly important "2", not important as "1". Number of Professionals who marked importance of motivational factors according to the likert scale on questionnaire was multiplied to the weightage given of the likert scale as mention above. At the end these multiplied weightages are summed up in the separate column as a cumulative motivational score of each motivational factor. This is written as "Score" in the table. This score is then used for comparison of motivational factors between engineers and doctors. The higher the score, higher is the importance of that motivational factor. Same work is done for the comparison of demographical features between engineers and doctors. SPSS is used for correlation and regression analysis. Correlation table is drawn separately for engineers and doctors. Correlation is to test the relationship strengths between motivating factors in doctors and similar work is done for the engineers as well. Regression analysis s is done for the validation of the research work.

Results:

Here results are discussed in this format. First overall comparison between engineer and doctors is made. Then the comparison/difference of importance of motivational factors is plotted between male doctors and male engineers, female doctors and female engineers, single doctors and single engineers and for married, government and private doctors and engineers.

CHAPTER 4: RESULTS

4.1 Overall Importance of Motivational Factor between Doctors and Engineers

Motivational Scores of Doctors (Table: 2)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	40	200	26	104	1	3	0		0		307
Good salary package	41	205	24	96	2	6	0		0		307
Promotion	33	165	32	128	2	6	0		0		299
Financial benefits	23	115	31	124	9	27	1	2	2	2	270
Official tours	10	50	22	88	25	75	8	16	2	2	231
Skill improvement trainings	38	190	17	68	9	27	3	6			291
Higher qualifications	36	180	23	92	4	12	3	6	1	1	291
Respect and recognition	42	210	23	92	0	0	1	2	1	1	305
Relationship with coworkers	21	105	28	112	15	45	3	6	0		268
Equal and fair treatment of employees	28	140	27	108	10	30	0		0		278
Personal safety	37	185	27	108	4	12	0		0		305
Work place condition	30	150	26	104	11	33	0		0		287
Job autonomy	15	75	32	128	15	45	5	10	0		258
Job empowerment	14	70	30	140	15	45	3	6	0		261
Good job timing	37	185	24	96	4	12	1	2	0		295
Serving people	46	230	17	68	3	9	0		0		307

Motivational Scores of Engineers (Table: 3)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	45	225	29	116	11	33	1	2	1	1	377
Good salary package	35	175	46	184	5	15	0	0	1	1	375
Promotion	32	160	43	172	12	36	1	2	0	0	370
Financial benefits	26	130	42	168	16	48	3	6	0	0	352
Official tours	11	55	14	56	38	114	18	36	6	6	267
Skill improvement trainings	36	180	38	152	9	27	3	6	1	1	366
Higher qualifications	32	160	29	116	19	57	4	8	2	2	343
Respect and recognition	46	230	34	136	6	18	0	0	0	0	384
Relationship with coworkers	25	125	34	136	18	54	7	14	2	2	331
Equal and fair treatment of employees	39	195	36	144	8	24	4	8	0	0	371
Personal safety	35	175	28	112	17	51	6	12	1	1	351
Work place condition	25	125	30	120	25	75	8	16	0	0	336
Job autonomy	12	60	38	152	29	87	7	14	1	1	314
Job empowerment	16	80	36	144	27	81	8	16	0	0	321
Good job timing	31	155	39	156	12	39	3	6	1	1	357
Serving people	28	140	36	144	20	60	2	4	1	1	349

Comparison table of doctors & engineers: (Table: 4)

	Doctors		Engineers	
	Scores	Position	Position	scores
Job security	307	2	2	377
Good salary package	307	2	3	375
Promotion	299	5	5	367
Financial benefits	270	9	8	352
Official tours	231	13	15	267
Skill improvement trainings	291	6	6	366
Higher qualifications opportunities	291	6	11	347
Respect and Recognition	305	3	1	389
Relationship with coworkers	268	10	12	334
Equal and Fair treatment of employees	280	8	4	371
Personal safety	302	4	9	351
Work place condition	287	7	12	334
Job Autonomy	258	12	14	314
Job Empowerment	261	11	13	321
Good job timings	299	5	7	357
Serving people/Nation	312	1	10	349

(a) Graph:

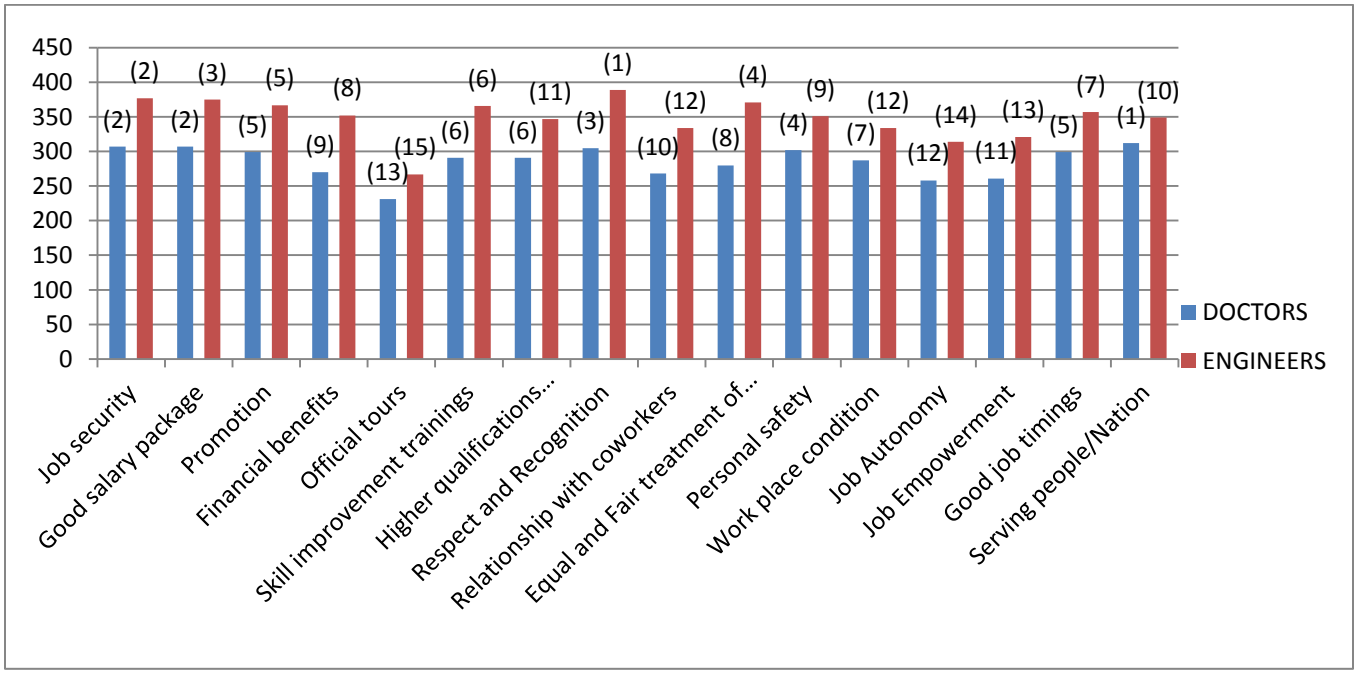


Table: 2 illustrate the calculation of motivational scores of each motivational factor of doctors. Serving people have highest scores of 312. Similarly job security and good salary package have equal 307 scores. Respect and recognition from society and superiors have scored 305 scores. Least scores are taken by official tours i-e 231.

Table: 3 illustrate the calculation of motivational scores of each motivational factor of engineers. This depicts that Respect and recognition from society and superiors has scored the most i-e 389. Job security scored 377 points. Good salary package have 375 points. Equal and fair treatment of employees has 371 points. Less scored achieved by official tours which is 267.

Table: 4 help us to compare the motivational factors of engineers and doctors. Left columns indicates the position of serving people which have high motivational scores 312 so it is at number 1 position similarly job security and good salary package which are the next factors having equal motivational scores of 307 shares the number 2 position. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of doctors and engineers.

(a) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of engineers and other peak shows the motivational factors scores of doctors and so on. At the top of each peak position of each factor is written e.g. serving people/nation has taken 1^{st} place in the list so 1 is written above it. Similarly this factor has 10^{th} place in engineers so 10 is written above it and so on.

Doctor's correlation table: (Table: 5)

Correlation table tells us the relationship between two values. Below is the correlation table of doctors.

Correlations

		serving people	job security	good salary package	Respect and recogition	Personel safety	Promotion	good job timing	skill improvement tratinings	Higher qualafications	Work place condition
serving people	Pearson Correlation	1	.783**	.840**	.840**	.807**	.614**	.812**	.880**	.833**	.749**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
job security	Pearson Correlation	.783**	1	.949**	.853**	.893**	.715**	.885**	.870**	.822**	.781**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
good salary package	Pearson Correlation	.840**	.949**	1	.924**	.894**	.724**	.880**	.888**	.841**	.779**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
Respect and recogition	Pearson Correlation	.840**	.853**	.924**	1	.828**	.687**	.856**	.840**	.847**	.699**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
Personel safety	Pearson Correlation	.807**	.893**	.894**	.828**	1	.818**	.957**	.919**	.901**	.821**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
Promotion	Pearson Correlation	.614**	.715**	.724**	.687**	.818**	1	.788**	.709**	.778**	.806**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
good job timing	Pearson Correlation	.812**	.885**	.880**	.856**	.957**	.788**	1	.919**	.951**	.823**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	67	67	67	67	67	67	67	67	67	67
skill improvement tratinings	Pearson Correlation	.880**	.870**	.888**	.840**	.919**	.709**	.919**	1	.923**	.879**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	67	67	67	67	67	67	67	67	67	67
Higher qualafications	Pearson Correlation	.833**	.822**	.841**	.847**	.901**	.778**	.951**	.923**	1	.839**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	67	67	67	67	67	67	67	67	67	67
Work place condition	Pearson Correlation	.749**	.781**	.779**	.699**	.821**	.806**	.823**	.879**	.839**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	67	67	67	67	67	67	67	67	67	67

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

It is seen that correlation is significant at 0.001 levels. Our correlation value is less than 0.001 levels so our correlation value is statistically significant. Correlation table is formed by picking top ten motivating factors of doctors. Above table shows that there is positive and high correlation is between personal safety and good job timings. Its value is 0.957. Similarly next important and high value correlation is between job security and good salary package. Its value is 0.949. Likewise all the correlation values can be seen from the above table.

Engineers' correlation table: (Table: 6)

This table tells the correlation values between top motivating factors of engineers.

Correlations

		Respect and recogition	job security	good salary package	Equal and fair tratment of employees	Promotion	skill improvement tratinings	good job timing	finanatial benefits	Personel safety	serving people
Respect and recogition	Pearson Correlation	1	.911**	.828**	.879**	.792**	.846**	.827**	.780**	.878**	.803**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
job security	Pearson Correlation	.911**	1	.835**	.918**	.834**	.921**	.876**	.826**	.892**	.848**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
good salary package	Pearson Correlation	.828**	.835**	1	.871**	.845**	.923**	.890**	.808**	.894**	.850**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
Equal and fair tratment of employees	Pearson Correlation	.879**	.918**	.871**	1	.902**	.961**	.903**	.848**	.915**	.851**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
Promotion	Pearson Correlation	.792**	.834**	.845**	.902**	1	.906**	.916**	.870**	.878**	.865**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
skill improvement tratinings	Pearson Correlation	.846**	.921**	.923**	.961**	.906**	1	.932**	.867**	.933**	.877**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
good job timing	Pearson Correlation	.827**	.876**	.890**	.903**	.916**	.932**	1	.925**	.917**	.921**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	87	87	87	87	87	87	87	87	87	87
finanatial benefits	Pearson Correlation	.780**	.826**	.808**	.848**	.870**	.867**	.925**	1	.880**	.946**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	87	87	87	87	87	87	87	87	87	87
Personel safety	Pearson Correlation	.878**	.892**	.894**	.915**	.878**	.933**	.917**	.880**	1	.923**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	87	87	87	87	87	87	87	87	87	87
serving people	Pearson Correlation	.803**	.848**	.850**	.851**	.865**	.877**	.921**	.946**	.923**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	87	87	87	87	87	87	87	87	87	87

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

Results show that there is a positive correlation between equal and fair treatment of employers from superiors and skill improvement trainings. Its value is 0.961. Similarly next important correlation is between skill improvement trainings and good salary package. Its value is 0.923. These two relations show a very important relationship with each other. Since all the correlation values are statistically significant at 0.000 levels

Regression analysis of engineers and doctors against motivating factors:

Linear regression shows the relationship between independent and dependent variable**.**

(Table: 7)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728[a]	.530	.475	.361

a. Predictors: (Constant), serving people, Equal and fair tratment of employees, Respect and recogition, Promotion, Job enpowrment, finanatial benefits, good salary package, job security, Work place condition, Official tours, Personel safety, good job timing, Job atonomy, Relationship with coworkers, skill improvement tratinings, Higher qualafications

b. Dependent Variable: profession

Model summary indicates that value of R is 0.728 and R square is 0.530 but taken into account of sample size adjusted R square is 0.475.

(Table: 8)

ANOVA[a]

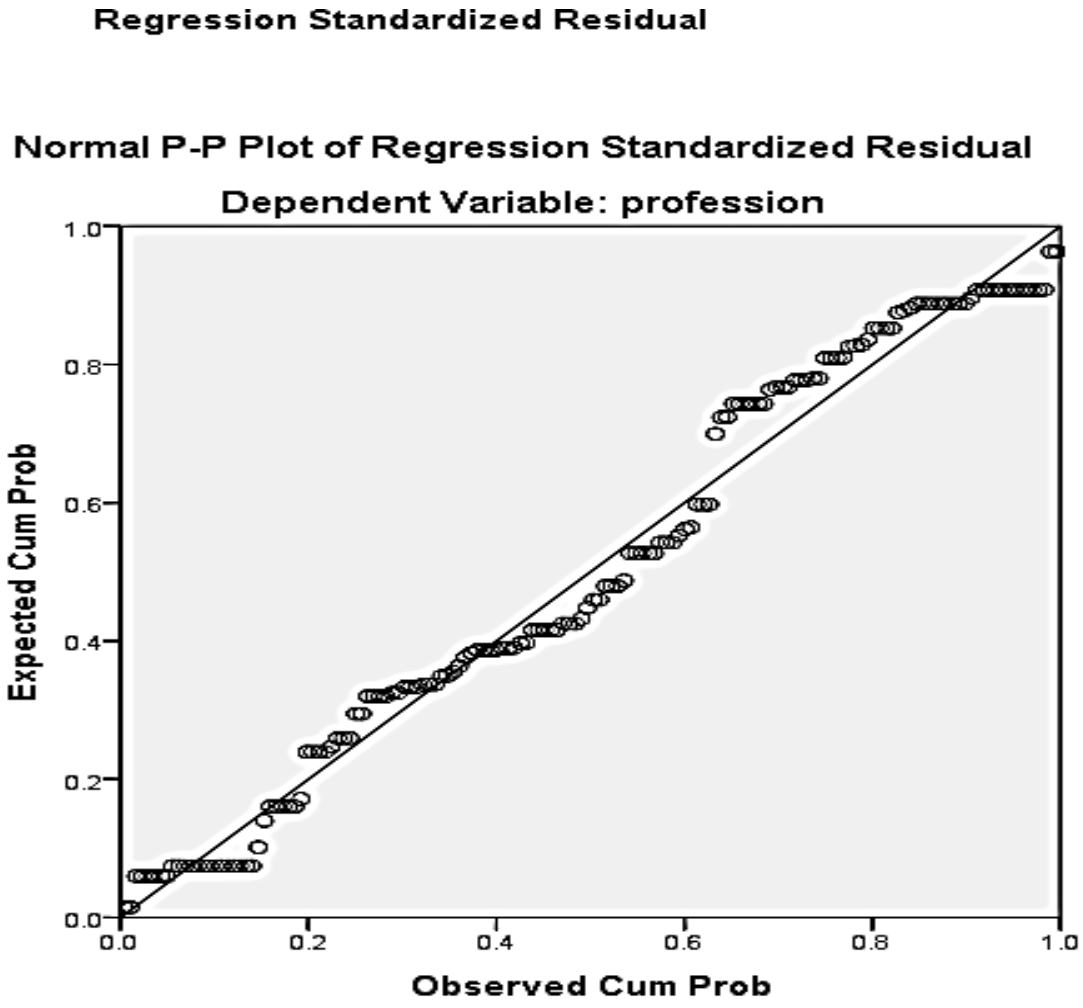
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.042	16	1.253	9.636	.000[b]
	Residual	17.809	137	.130		
	Total	37.851	153			

a. Dependent Variable: profession

b. Predictors: (Constant), serving people, Equal and fair tratment of employees, Respect and recogition, Promotion, Job enpowrment, finanatial benefits, good salary package, job security, Work place condition, Official tours, Personel safety, good job timing, Job atonomy, Relationship with coworkers, skill improvement tratinings, Higher qualafications

ANOVA is the called analysis of variance. Our concerned value is F which is 9.636 and similarly significance value is 0.000 which is less than 0.001.so it is statistically significant.

Figure: 7-Normal P-P plot of regression standardize



Above graph is drawn between expected cum prob and obederved cum prob. It is clearly seen motivational factors following a sinusoidal path on the straight line.

4.2 Importance of Motivational Factor between Male Doctors and Engineers

Motivational Scores of Doctors (Table: 9)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	21	105	15	60	1	3	0	0	0		168
Good salary package	19	95	17	68	1	3	0	0	0		166
Promotion	16	80	19	76	2	6	0	0	0		162
Financial benefits	12	60	18	72	6	18	0	0	1	1	151
Official tours	7	35	13	52	14	42	3	6	0		135
Skill improvement trainings	21	105	9	36	5	15	2	4	0		160
Higher qualifications	17	85	14	56	3	9	2	4	1	1	155
Respect and recognition	22	110	13	52	11	0	1	2	1	1	165
Relationship with coworkers	9	45	15	60	8	33	2	4	0		142
Equal and fair treatment of employees	14	70	15	60	1	24	0	0	0		154
Personal safety	23	115	13	52	6	3	0	0	0		170
Work place condition	18	90	13	52	9	18	0	0	0		160
Job autonomy	7	35	17	68	10	27	4	8	0		138
Job empowerment	6	30	19	76	4	30	1	4	0		140
Good job timing	15	75	17	68	1	12	1	2	0		157
Serving People/ Nation	28	140	8	32	1	3	0	0	0		175

Motivational Scores of Engineers (Table: 10)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	32	160	20	80	7	21	0	0	1	1	262
Good salary package	22	110	34	136	3	9	0	0	1	1	256
Promotion	19	95	35	140	5	15	1	2	0	0	252
Financial benefits	17	85	30	120	11	33	2	4	0	0	242
Official tours	6	30	7	28	30	90	13	26	4	4	178
Skill improvement trainings	25	125	26	104	7	21	2	4	0	0	254
Higher qualifications	20	100	22	88	14	42	4	8	0	0	238
Respect and recognition	31	155	26	104	3	9	0	0	0	0	268
Relationship with coworkers	17	85	26	104	12	36	5	10	0	0	235
Equal and fair treatment of employees	24	120	29	116	4	12	3	6	0	0	254
Personal safety	23	115	20	80	12	36	4	8	1	1	240
Work place condition	10	50	25	100	18	54	7	14	0	0	218
Job autonomy	4	20	32	128	20	60	3	6	1	1	215
Job empowerment	7	35	30	120	19	57	4	8	0	0	220
Good job timing	18	90	31	124	8	24	2	4	1	1	243
Serving people	17	85	28	112	13	39	1	2	1	1	239

Comparison table of male doctors & male engineers: (Table: 11)

	Doctors		Engineers	
	Score	Position	Position	scores
Job security	168	3	2	262
Good salary package	166	4	3	256
Promotion	162	6	5	252
Financial benefits	151	11	7	242
Official tours	135	15	15	178
Skill improvement trainings	160	7	4	254
Higher qualifications opportunities	155	9	10	238
Respect and Recognition	165	5	1	268
Relationship with coworkers	142	12	11	235
Equal and Fair treatment of employees	154	10	4	254
Personal safety	170	2	8	240
Work place condition	160	7	13	218
Job Autonomy	138	14	14	215
Job Empowerment	140	13	12	220
Good job timings	157	8	6	243
Serving people/Nation	175	1	9	239

(b) Graph

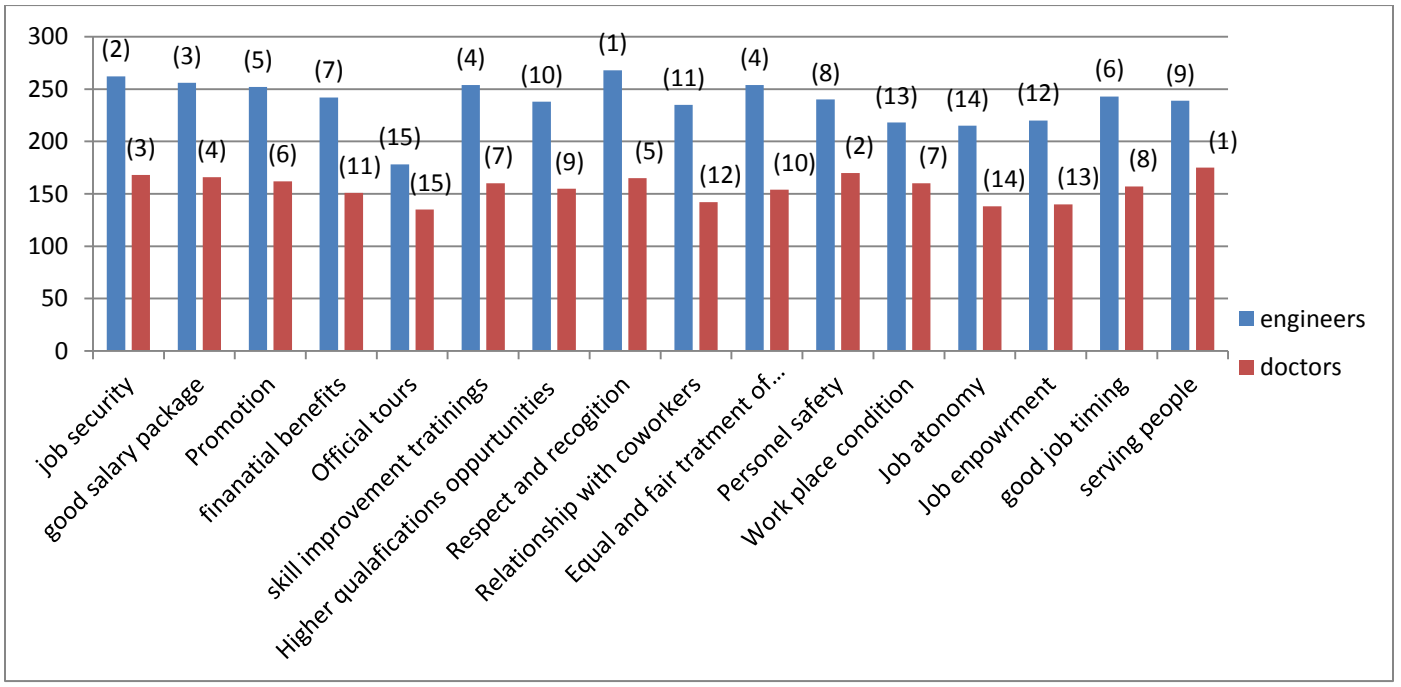


Table: 9 illustrate the calculation of motivational scores of each motivational factor of male doctors. Serving people have highest scores of 175. Personal safety has 170 points. Similarly job security has168 points and good salary package have 166 scores. Respect and recognition from society and superiors have scored 165 scores. Least scores are taken by official tours i-e 135.

Table: 10 illustrate the calculation of motivational scores of each motivational factor of male engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 268. Job security scored 262 points. Good salary package have 256 points. Skill improvement trainings have 254 points. Less scored achieved by official tours which is 178.

Table: 11 help us to compare the motivational factors of male engineers and male doctors. Left columns indicate the position of serving people which have high motivational scores 175 so it is at number 1 position. Personal safety has 170 points and it place at second spot. Job security has168 points so it is at third place. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of male doctors and engineers.

(b) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of male engineers and other peak shows the motivational factors scores of male doctors and so on. At the top of each peak position of each factor is written e.g. Respect and Recognition has taken 1^{st} place in the engineers list so 1 is written above it. Similarly this factor has 5^{th} place in doctors so 5 is written above it and so on.

4.3 Importance of Motivational Factor between Female Doctors and Engineers

Motivational Scores of Doctors (Table: 12)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	19	95	11	44	0	0	0	0	0		139
Good salary package	22	110	7	28	1	3	0	0	0		141
Promotion	17	85	13	52	0	0	0	0	0		137
Financial benefits	11	55	13	52	4	12	1	2	1	1	122
Official tours	3	15	9	36	11	33	5	10	2	2	96
Skill improvement trainings	17	85	8	32	4	12	1	2	0		131
Higher qualifications	19	95	9	36	1	3	1	2	0		136
Respect and recognition	20	100	10	40	0	0	0	0	0		140
Relationship with coworkers	12	60	13	52	4	12	1	2	0		126
Equal and fair treatment of employees	14	70	13	52	2	6	1	2	0		130
Personal safety	14	70	14	56	2	6	0	0	0		132
Work place condition	12	60	13	52	5	15	0	0	0		127
Job autonomy	8	40	15	60	6	18	1	2	0		120
Job empowerment	8	40	16	64	5	15	1	2	0		121
Good job timing	22	110	8	32	0	0	0	0	0		142
Serving People/ Nation	19	95	9	36	2	6	0	0	0		137

Motivational scores of engineers: (Table: 13)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	13	65	9	36	4	12	1	2	0	0	115
Good salary package	13	65	12	48	2	6	0	0	0	0	119
Promotion	13	65	8	32	6	18	0	0	0	0	115
Financial benefits	9	45	12	48	5	15	1	2	0	0	110
Official tours	5	25	7	28	8	24	5	10	2	2	89
Skill improvement trainings	11	55	12	48	2	6	1	2	1	1	112
Higher qualifications	12	60	8	32	5	15	0	0	2	2	109
Respect and recognition	16	80	8	32	3	9	0	0	0	0	121
Relationship with coworkers	8	40	8	32	7	21	2	4	2	2	99
Equal and fair treatment of employees	15	75	7	28	4	12	1	2	0	0	117
Personal safety	12	60	8	32	5	15	2	4	0	0	111
Work place condition	15	75	5	20	6	18	1	2	0	0	115
Job autonomy	8	40	6	24	9	27	4	8	0	0	99
Job empowerment	9	45	6	24	8	24	4	8	0	0	101
Good job timing	13	65	8	32	5	15	1	2	0	0	114
Serving people	11	55	8	32	7	21	1	2	0	0	110

Comparison table of female doctors & female engineers (Table: 14)

	Doctors		Engineers	
	Scores	Position	Position	Scores
Job security	139	4	4	115
Good salary package	141	2	2	119
Promotion	137	5	4	115
Financial benefits	122	12	8	110
Official tours	96	15	12	89
Skill improvement trainings	131	8	6	112
Higher qualifications opportunities	136	6	9	109
Respect and Recognition	140	3	1	121
Relationship with coworkers	126	11	11	99
Equal and Fair treatment of employees	130	9	3	117
Personal safety	132	7	7	111
Work place condition	127	10	4	115
Job Autonomy	120	14	11	99
Job Empowerment	121	13	10	101
Good job timings	142	1	5	114
Serving people/Nation	137	5	8	110

(c) Graph:

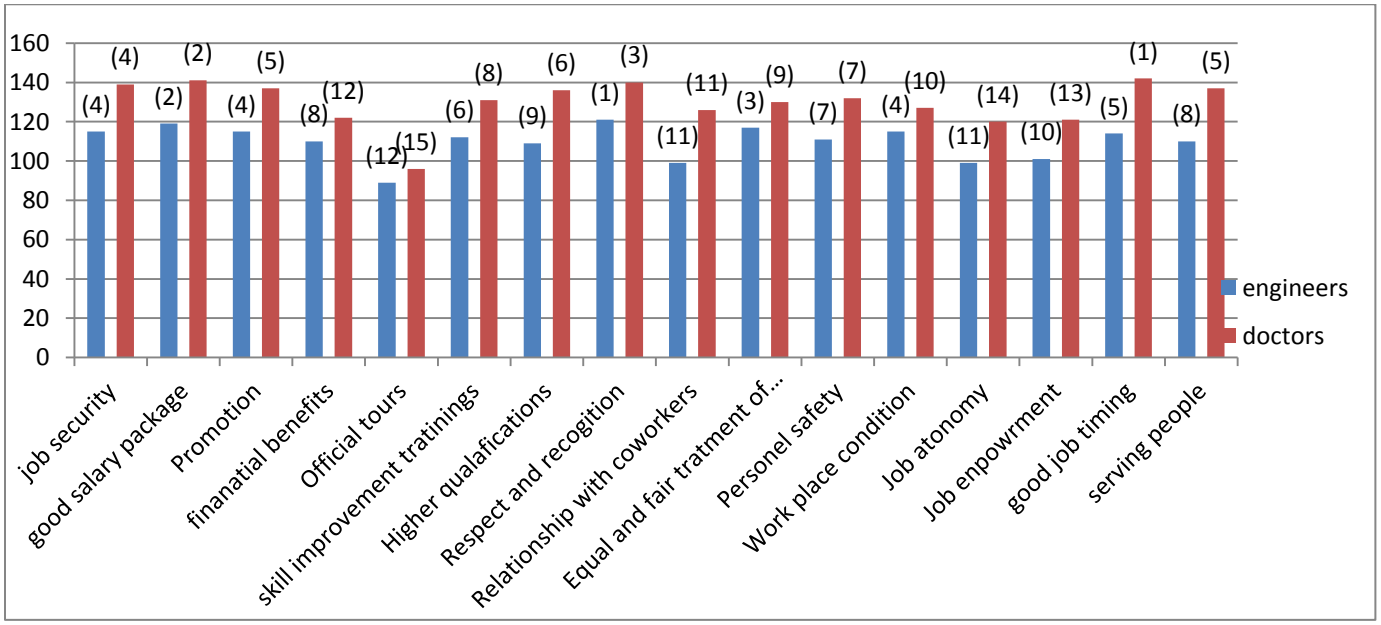


Table: 12 illustrate the calculation of motivational scores of each motivational factor of female doctors. Good job timings have highest scores of 142. Similarly good salary package have 141 scores and Respect and recognition from society and superiors have scored 140 scores. Least scores are taken by official tours i-e 96.

Table: 13 illustrate the calculation of motivational scores of each motivational factor of female engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 121. Good salary package have and Equal and Fair treatment of employees have scored 119 and 117 points respectively. Job security has 115 points. Less scored achieved by official tours which is 89.

Table: 14 help us to compare the motivational factors of female engineers and female doctors. Left columns indicate the position of Good job timings which have high motivational scores 142 so it is at number 1 position. Good salary package has 141 points and it place at second spot. Respect and recognition from society and superiors has 140 points so it is at third place. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of female doctors and engineers.

(c) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of female engineers and other peak shows the motivational factors scores of female doctors and so on. At the top of each peak position of each factor is written e.g. Respect and Recognition has taken 1^{st} place in the engineers list so 1 is written above it. Similarly this factor has 5^{th} place in engineers so 3 is written above it and so on.

4.4 Importance of Motivational Factor between single's Doctors and Engineers

Motivational Scores of Doctors (Table: 15)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	12	60	9	36		0		0	0		117
Good salary package	16	80	5	20		0		0	0		121
Promotion	13	65	8	32		0		0	0		118
Financial benefits	7	35	12	48	1	3	1	2	0		109
Official tours	4	20	8	32	6	18	3	6	0		97
Skill improvement trainings	15	75	6	24	0	0	0	0	0		120
Higher qualifications	15	75	5	20	1	3	0	0	0		119
Respect and recognition	13	65	7	28	0	0	1	2	0		116
Relationship with coworkers	12	60	3	12	6	18	0	0	0		111
Equal and fair treatment of employees	13	65	6	24	2	6		0	0		116
Personal safety	12	60	8	32	1	3		0	0		116
Work place condition	8	40	11	44	2	6		0	0		111
Job autonomy	7	35	13	52	1	3		0	0		111
Job empowerment	5	25	14	56	2	6		0	0		108
Good job timing	13	65	7	28	1	3		0	0		117
Serving People/ Nation	14	70	6	24	1	3		0	0		118

Motivational Scores of Engineers (Table: 16)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	23	115	14	56	4	12	1	2	1	1	186
Good salary package	20	100	19	76	4	12	0	0			188
Promotion	22	110	13	52	7	21	1	2			185
Financial benefits	13	65	21	84	8	24	1	2			175
Official tours	9	45	10	40	13	39	9	18	2	2	144
Skill improvement trainings	20	100	16	64	3	9	3	6	1	1	180
Higher qualifications	16	80	15	60	8	24	2	4	2	2	170
Respect and recognition	24	120	16	64	3	9	0	0			193
Relationship with coworkers	15	75	12	48	11	33	3	6	2	2	164
Equal and fair treatment of employees	23	115	15	60	3	9	2	4			188
Personal safety	19	95	14	56	8	24	2	4			179
Work place condition	19	95	13	52	8	24	3	6			177
Job autonomy	6	30	21	84	12	36	3	6	1	1	157
Job empowerment	10	50	17	68	13	39	3	6			163
Good job timing	17	85	16	64	8	24	2	4			177
Serving people	18	90	18	72	6	18	0	0	1	1	181

Comparison table of single doctors & single engineers: (Table: 17)

	Doctors		Engineers	
	Scores	Position	Position.	Scores
Job security	117	5	3	186
Good salary package	121	1	2	188
Promotion	118	4	4	185
Financial benefits	109	8	9	175
Official tours	97	10	14	144
Skill improvement trainings	120	2	6	180
Higher qualifications opportunities	119	3	10	170
Respect and Recognition	116	6	1	193
Relationship with coworkers	111	7	11	164
Equal and Fair treatment of employees	116	6	2	188
Personal safety	116	6	7	179
Work place condition	111	7	8	177
Job Autonomy	111	7	13	157
Job Empowerment	108	9	12	163
Good job timings	117	5	8	177
Serving people/Nation	118	4	5	181

(d) Graph:

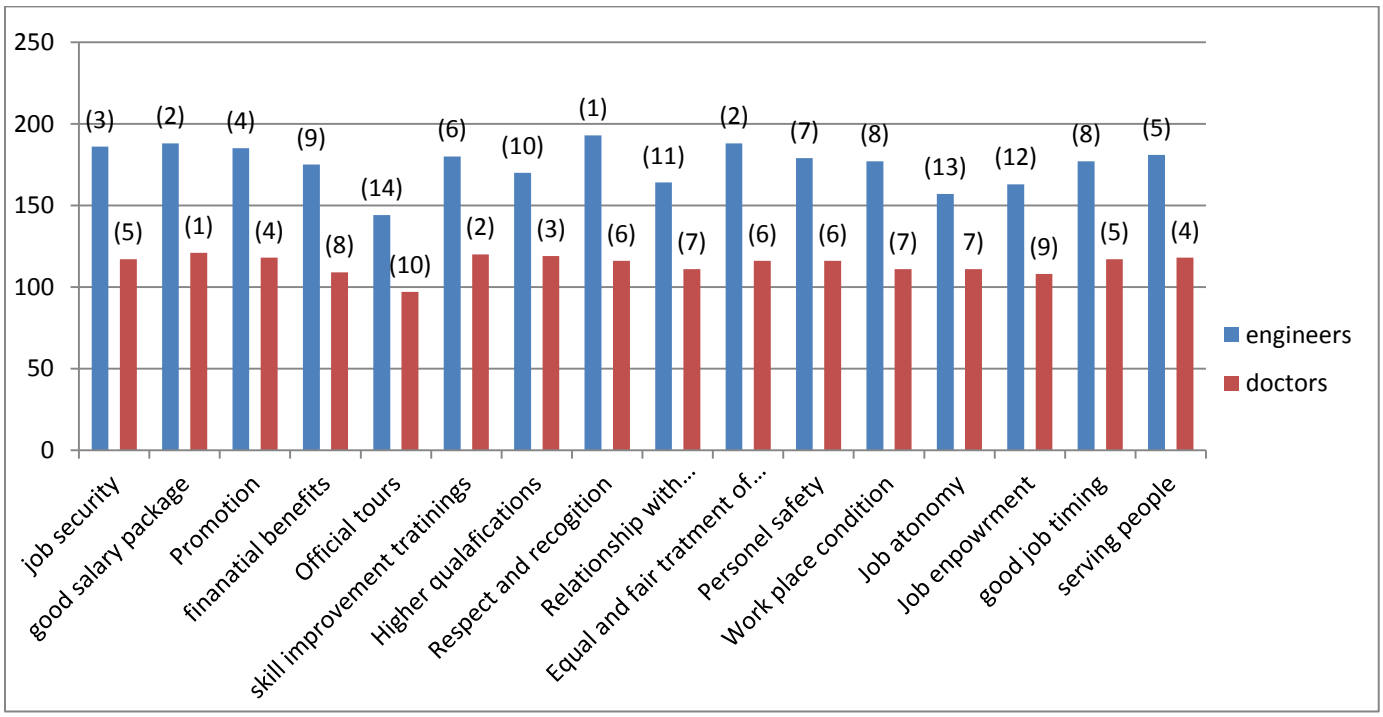


Table: 15 illustrate the calculation of motivational scores of each motivational factor of single doctors. Good salary package have highest scores of 121. Similarly Skill improvement trainings have 120 scores and Higher qualifications opportunities have scored 119 points. Least scores are again taken by official tours i-e 97.

Table: 16 illustrate the calculation of motivational scores of each motivational factor of single's engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 193. Good salary package have and job security have scored 188 and 186 points respectively. Promotion has 185 points. Less scored achieved by official tours which is 144.

Table: 17 help us to compare the motivational factors of single's engineers and single's doctors. Left columns indicate the position of Good salary package, which have high motivational scores 142 so it is at number 1 position. Skill improvement trainings have 120 points and it place at second spot. Higher qualifications opportunities have 119 points so it is at third place. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of unmarried doctors and engineers.

(d) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of single's engineers and other peak shows the motivational factors scores of single's doctors and so on. At the top of each peak position of each factor is written e.g. Good salary package has taken 1^{st} place in the doctor's list so 1 is written above it. Similarly this factor has 2^{nd} place in engineers so 2 is written above it and so on.

4.5 Importance of Motivational Factor between Married Doctors and Engineers

Motivational Scores of Doctors (Table: 18)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	28	140	17	68	1	3	0	0			211
Good salary package	26	130	19	76	1	3	0	0			209
Promotion	20	100	24	96	2	6	0	0			202
Financial benefits	16	80	19	76	10	30	0	0	1	1	187
Official tours	6	30	11	44	22	66	6	12	1	1	153
Skill improvement trainings	22	110	13	52	8	24	3	6			192
Higher qualifications	22	110	17	68	3	9	3	6	1	1	194
Respect and recognition	29	145	16	64	0	0	0	0	1	1	210
Relationship with coworkers	9	45	25	100	9	27	3	6			178
Equal and fair treatment of employees	16	80	21	84	8	24	1	2			190
Personal safety	30	150	14	56	2	6	0	0			212
Work place condition	20	100	19	76	7	21	0	0			197
Job autonomy	8	40	19	76	14	42	5	10			168
Job empowerment	9	45	21	84	13	39	3	6			174
Good job timing	24	120	18	72	3	9	1	2			203
Serving People/ Nation	33	165	11	44	2	6	0	0			215

Motivational Scores of Engineers (Table: 19)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	21	105	15	60	8	24	0	0	0	0	189
Good salary package	15	85	28	84	3	15	0	0	1	1	185
Promotion	10	50	29	116	4	15	0	0	0	0	181
Financial benefits	17	85	18	72	8	24	1	2	0	0	183
Official tours	2	10	5	20	23	78	8	16	3	3	127
Skill improvement trainings	16	80	23	92	5	15	1	0	0	0	187
Higher qualifications	13	65	19	76	11	30	2	4	0	0	175
Respect and recognition	22	110	18	72	4	12	0	0	0	0	194
Relationship with coworkers	10	50	23	92	7	21	4	8	0	0	171
Equal and fair treatment of employees	16	85	15	80	5	15	2	4	0	0	184
Personal safety	9	80	15	60	8	24	4	8	1	1	173
Work place condition	6	35	18	68	14	45	5	10	0	0	158
Job autonomy	5	25	19	76	17	51	3	6			158
Job empowerment	6	30	20	80	13	42	4	8	0	0	160
Good job timing	14	70	21	88	5	15	2	4	1	1	178
Serving people	11	50	18	72	14	42	2	4	0	0	168

Comparison table of married doctors & married engineers: (Table: 20)

	Doctors		Engineers	
	Score	Position	Position	Scores
Job security	211	3	2	189
Good salary package	209	5	4	185
Promotion	202	7	7	181
Financial benefits	187	12	6	183
Official tours	153	16	16	127
Skill improvement trainings	192	10	3	187
Higher qualifications opportunities	194	9	9	175
Respect and Recognition	210	4	1	194
Relationship with coworkers	178	13	11	171
Equal and Fair treatment of employees	190	11	5	184
Personal safety	212	2	10	173
Work place condition	197	8	14	158
Job Autonomy	168	15	15	158
Job Empowerment	174	14	13	160
Good job timings	203	6	8	178
Serving people/Nation	215	1	12	168

(e) Graph:

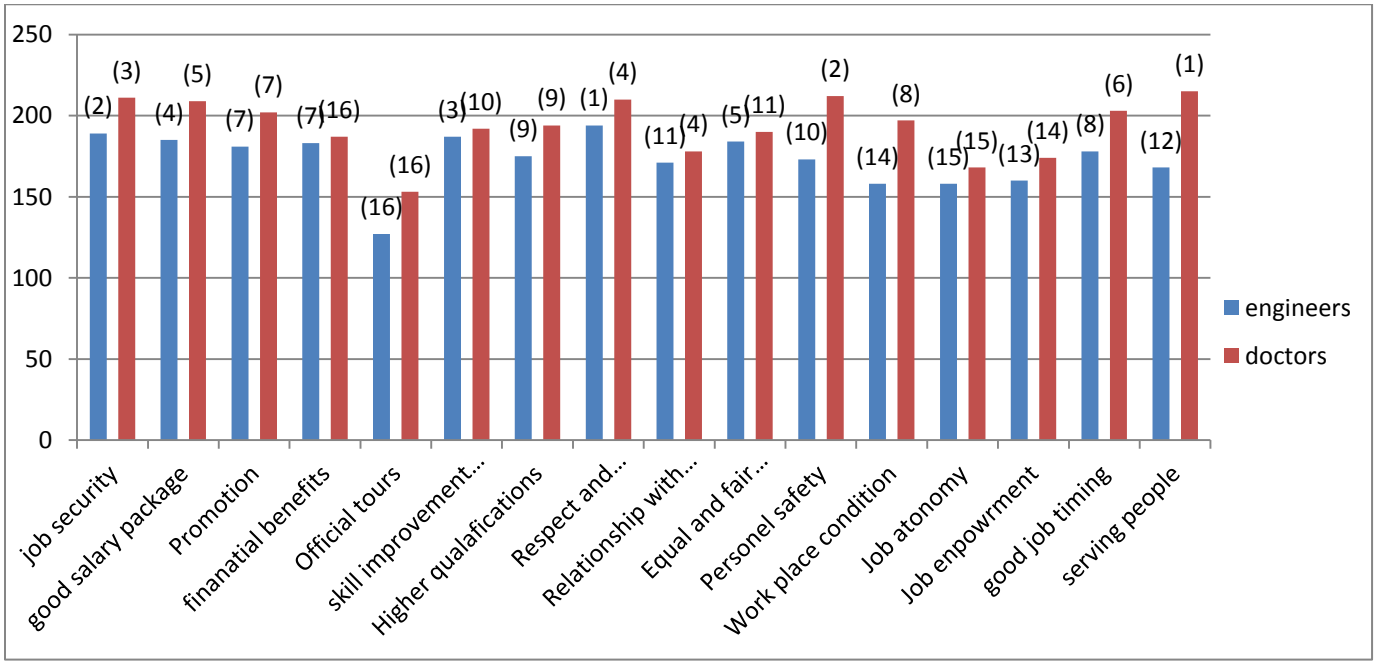


Table: 18 illustrate the calculation of motivational scores of each motivational factor of married doctors. Serving people/Nation has highest scores of 215. Similarly Personal safety has 212 scores and Job security have scored 211 points. Least scores are again taken by official tours i-e 153.

Table: 19 illustrate the calculation of motivational scores of each motivational factor of married engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 194. Job security and Skill improvement trainings have scored 189 and 187 points respectively. Good salary package has 185 points. Less scored achieved by official tours which is 127.

Table: 20 help us to compare the motivational factors of married engineers and married doctors. Left columns indicate the position of Serving people/Nation, which have high motivational scores of 215 so it is at number 1 position. Personal safety has 212 points and it place at second spot. Job security has 119 points so it is at third place. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of married doctors and engineers.

(e) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of married engineers and other peak shows the motivational factors scores of married doctors and so on. At the top of each peak position of each factor is written e.g. Financial benefits has taken 12^{th} place in the doctor's list so 12 is written above it. Similarly this factor has 6^{th} place in engineers so 6 is written above it and so on.

4.6 Importance of Motivational Factor Government Doctors and Engineers

Motivational Scores of Doctors (Table: 21)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	20	100	10	40		0		0	0		140
Good salary package	21	105	9	36	0	0		0	0		141
Promotion	20	100	8	32	2	6		0	0		138
Financial benefits	16	80	10	40	4	12	0	0	0		132
Official tours	7	35	11	44	9	27	3	6	0		112
Skill improvement trainings	18	90	9	36	3	9	0	0	0		135
Higher qualifications	16	80	13	52	1	3	0	0	0		135
Respect and recognition	20	100	9	36	0	0	1	2	0		138
Relationship with coworkers	10	50	15	60	4	12	1	2	0		124
Equal and fair treatment of employees	13	65	14	56	3	9	0	0	0		130
Personal safety	21	105	9	36	0	0	0	0	0		141
Work place condition	14	70	12	48	4	12	0	0	0		130
Job autonomy	8	40	16	64	4	12	2	4	0		120
Job empowerment	8	40	17	68	4	12	1	2	0		122
Good job timing	20	100	9	36	0	0	1	2	0		138
Serving People/ Nation	21	105	8	32	1	3	0	0	0		140

Motivational Scores of Engineers (Table: 22)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	28	140	15	60	10	30	1	2	1	1	233
Good salary package	19	95	30	120	5	15	0	0	1	1	231
Promotion	19	95	26	104	9	27	1	2	0	0	228
Financial benefits	14	70	26	104	12	36	3	6			216
Official tours	6	30	10	40	24	72	12	24	3	3	169
Skill improvement trainings	20	100	26	104	5	15	3	6	1	1	226
Higher qualifications	15	75	22	88	13	39	4	8	1	1	211
Respect and recognition	25	125	25	100	5	15		0			240
Relationship with coworkers	14	70	23	92	9	27	7	14	2	2	205
Equal and fair treatment of employees	23	115	21	84	7	21	4	8			228
Personal safety	20	100	19	76	9	27	6	12	1	1	216
Work place condition	14	70	17	68	19	57	5	10			205
Job autonomy	6	30	24	96	18	54	6	12	1	1	193
Job empowerment	9	45	22	88	17	51	7	14			198
Good job timing	17	85	25	100	8	24	4	8	1	1	218
Serving people	17	85	23	92	12	36	2	4	1	1	218

Comparison table of government doctors & government engineers: (Table: 23)

	Doctors		Engineers	
	Scores	Position	Position	Scores
job security	140	2	2	233
Good salary package	141	1	3	231
Promotion	138	3	4	228
Financial benefits	132	5	7	216
Official tours	112	10	12	169
Skill improvement trainings	135	4	5	226
Higher qualifications opportunities	135	4	8	211
Respect and Recognition	138	3	1	240
Relationship with coworkers	124	7	9	205
Equal and Fair treatment of employees	130	6	4	228
Personal safety	141	1	7	216
Work place condition	130	6	9	205
Job Autonomy	120	9	11	193
Job Empowerment	122	8	10	198
Good job timings	138	3	6	218
Serving people/Nation	140	2	6	218

(f) Graph:

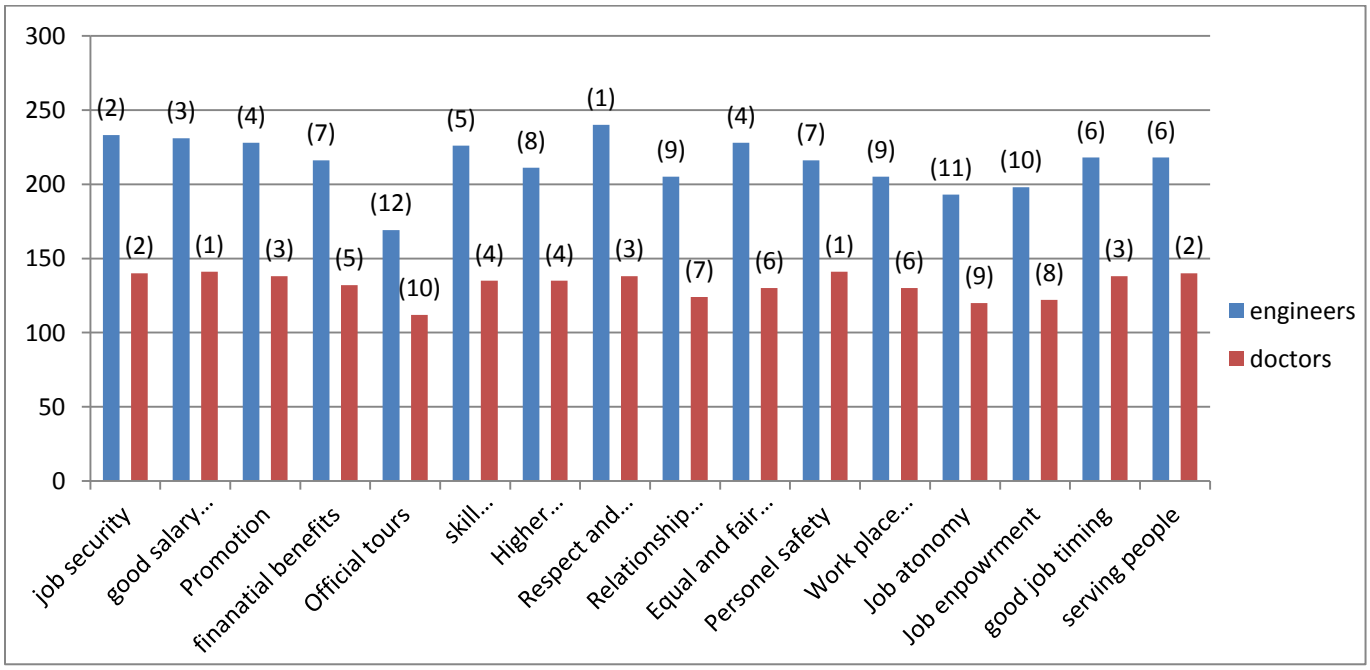


Table: 21 illustrate the calculation of motivational scores of each motivational factor of government doctors. Good salary package has highest scores of 141. Similarly Serving people/Nation and job security has equal scores of 140. Promotion, Respect and Recognition and Good job timings have scored identical 138 scores. Least scores are again taken by official tours i-e 112.

Table: 21 illustrate the calculation of motivational scores of each motivational factor of government engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 240. Job security has scored 233 points. Good salary package has 231 points. Less scored achieved by official tours which is 169.

Table: 23 help us to compare the motivational factors of government engineers and government doctors. Left columns indicate the position of Good salary package, which have high motivational scores of 215 so it is at number 1 position. Serving people/Nation and job security has equal scores of 140 and it place at second spot. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of government doctors and engineers.

(f) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of government engineers and other peak shows the motivational factors scores of government doctors and so on. At the top of each peak position of each factor is written e.g. Relationship with coworkers has taken 7^{th} place in the doctor's list so 7 is written above it. Similarly this factor has 9^{th} place in engineers so 9 is written above it and so on.

4.7 Importance of Motivational Factor between Private Doctors and Engineers

Motivational Scores of Doctors (Table: 24)

		Extremely important=5		very important=4		moderately important=3		slightly important=2		not important=1	Score
Job security	20	100	16	64	1	3		0	0		167
Good salary package	21	105	15	60	1	3		0	0		168
Promotion	13	65	24	96		0		0	0		161
Financial benefits	7	35	21	84	7	21	1	2	1	1	143
Official tours	5	25	10	40	14	42	6	12	2	2	121
Skill improvement trainings	19	95	9	36	6	18	3	6			155
Higher qualifications	20	100	10	40	3	9	3	6	1	1	156
Respect and recognition	22	110	14	56		0		0	1	1	167
Relationship with coworkers	11	55	14	56	11	33	1	2	0		146
Equal and fair treatment of employees	15	75	14	56	7	21	1	2	0		154
Personal safety	20	100	14	56	3	9		0	0		165
Work place condition	15	75	15	60	7	21		0	0		156
Job autonomy	7	35	16	64	11	33	3	6	0		138
Job empowerment	7	35	18	72	10	30	2	4	0		141
Good job timing	16	80	16	64	4	12	1	2	0		158
Serving People/ Nation	26	130	9	36	2	6		0	0		172

Motivational Scores of Engineers (Table: 25)

		Extremely important=5		very important=4		moderately important=3		slightly Important=2		not important=1	Score
Job security	18	90	15	60	3	9		0			159
Good salary package	18	90	18	72		0		0			162
Promotion	15	75	18	72	3	9		0			156
Financial benefits	13	65	19	76	4	12		0			153
Official tours	7	35	6	24	12	36	11	22			117
Skill improvement trainings	17	85	15	60	3	9	1	2			156
Higher qualifications	14	70	10	40	9	27	2	4	1	1	142
Respect and recognition	23	115	12	48	1	3		0			166
Relationship with coworkers	13	65	12	48	9	27	2	4			144
Equal and fair treatment of employees	17	85	16	64	2	6	1	2			157
Personal safety	17	85	14	56	5	15		0			156
Work place condition	13	65	14	56	7	21	2	4			146
Job autonomy	5	25	17	68	12	36	2	4			133
Job empowerment	7	35	17	68	12	36		0			139
Good job timing	14	70	16	64	5	15		0	1	1	150
Serving people	12	60	15	60	9	27		0			147

Comparison table of private doctors & engineers: (Table: 26)

	Doctors		Engineers	
	Scores	Position	Position	Scores
Job security	167	3	3	159
Good salary package	168	2	2	162
Promotion	161	5	5	156
Financial benefits	143	11	6	153
Official tours	121	14	14	117
Skill improvement trainings	155	8	5	156
Higher qualifications opportunities	156	7	11	142
Respect and Recognition	167	3	1	166
Relationship with coworkers	146	10	10	144
Equal and Fair treatment of employees	154	9	4	157
Personal safety	165	4	5	156
Work place condition	156	7	9	146
Job Autonomy	138	13	13	133
Job Empowerment	141	12	12	139
Good job timings	158	6	7	150
Serving people/nation	172	1	147	8

(g) Graph:

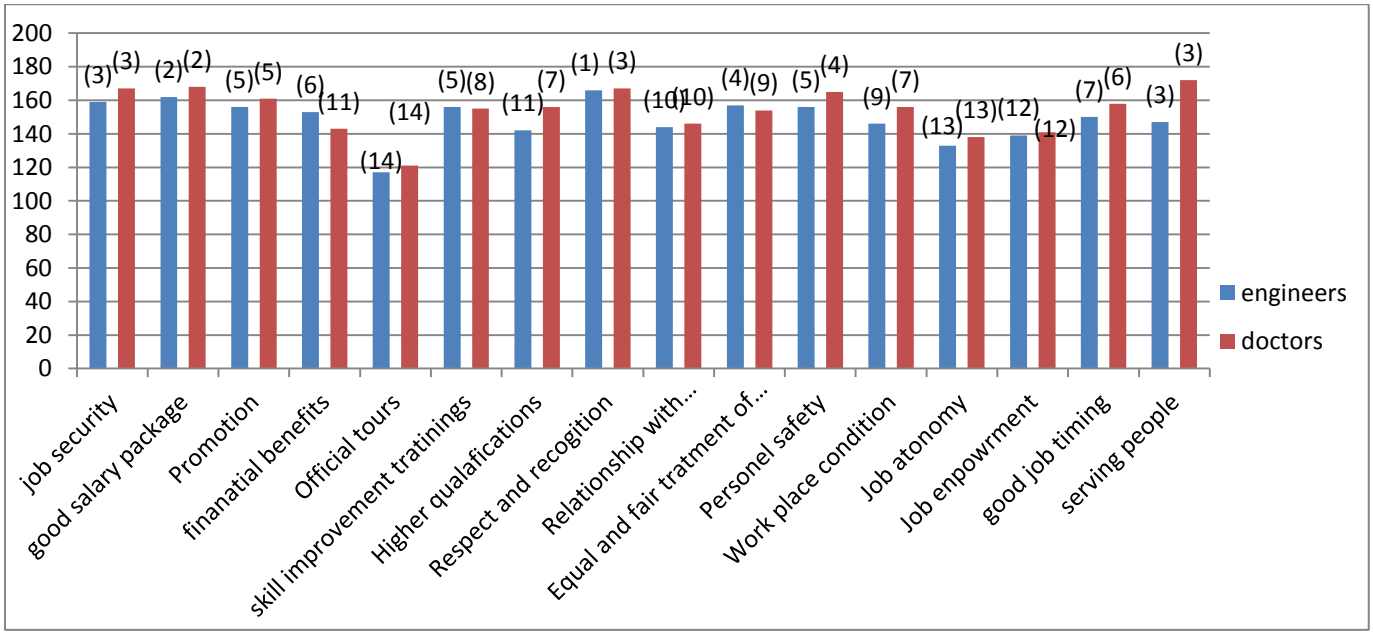


Table: 24 illustrate the calculation of motivational scores of each motivational factor of private doctors. Serving people/nation has highest scores of 172. Similarly Good salary package has scores of 168. Job security and Personal safety have 167 and 165 scores respectively. Least scores are again taken by official tours i-e 121.

Table: 25 illustrate the calculation of motivational scores of each motivational factor of private engineers. It is shown that Respect and recognition from society and superiors has scored the most i-e 166. Good salary package has 162 points. Job security has scored159 points. Less scored achieved by official tours which is 117.

Table: 26 help us to compare the motivational factors of private engineers and private doctors. Left columns indicate the position of Serving people/Nation, which have high motivational scores of 172 so it is at number 1 position. Good salary package has 168 points and it place at second spot. Job security and Personal safety is at 3rd and 4th place respectively. Likewise the next motivational factors of doctors are ranked in the same fashion. The same methodology is done at the right hand column of this table for engineers' e.g. Respect and recognition from society and superiors have high motivational scores so it is at first position and so on. This whole table will help us to give the clear picture of each motivational factors ranking in the opinion of private doctors and engineers.

(g) Graph shows the graphical presentation of the table: 4. at the x-axis there are motivational factors and at y- axis there are motivational scores. One peak shows the value of motivational scores of private engineers and other peak shows the motivational factors scores of private doctors and so on. At the top of each peak position of each factor is written e.g. Job Autonomy has taken 13th place in the engineers list so 13 is written above it. Similarly this factor has same place in doctors so 13 is written above it and so on.

CHAPTER 5: DISCUSSIONS

5.1 Engineers vs. Doctors:

As seen in (Table: 4), top motivating factor chosen by the engineers are respect and recognition from society and superiors let's divide it into two parts. First part is respect and recognition from superiors this is important because normally there is a routine work in many private or government organizations in Pakistan. Their work is treated as their duties so respect is not given to their work. Often due to leg pulling environment in many organizations where good hard working workers does not come up with his work, affects it working ability. This makes importance to recognition of work from the superiors to its employees. Similarly respect and recognition from society is important but it often lacks with many of reasons e.g. may be due to routine work or less confronted to society in form of competition and exhibition, which effects engineers respect and recognition from society. Next important factor is job security this may be because now a days engineers in Pakistan having less jobs, poor jobs or contract basis jobs (which are restricted for certain period of time available for engineers to work) once the job completed employee's normally fired. This arise feeling of insecurity of job. So job security is important. Good salary package is third important factor. This factor is important for many reasons because of large expenses, taxes to pay, combined family system in most of the homes in Pakistan and most important increasing prices of daily food items in few past years. Equal and fair treatment of employees is fourth motivating factor. Equal and fair treatment of employee makes equal opportunity of workers to move forward in organization and fair treatment give respect and confident to take risks in achieving challenges. Promotion is next important factor after fulfilling the entire above factor. Promotion gives the opportunity to take new responsibilities and new tasks to perform. So it becomes important for engineers to boost their career.

Table: 6 show a stronger correlation between equal and fair treatment of employee with skill improvement trainings. Value of this correlation is 0.961. It is statistically significant. Increase in equal and fair treatment of employee more will be the skill improvement trainings. Next strong relationship is skill improvement trainings with personal safety. Its value is 0.933

In comparison of engineers, doctors have listed top motivation factor as serving people/nation (Table: 4). Doctors have direct dealing with the patients for the improvement of health so providing better and best services to them is their top priority which in turn leads to work for humanity and serving people. Recent protest by the young doctors in Pakistan was in accordance with the two parallel second important motivation factors i-e job security and good salary package. As a result of this protest doctors were not available in hospitals, OPD and emergency was not operational. This protest was due to the fact that normally doctors have lengthy working hour in hospitals, may be from 24 hours to 48 hours consecutively, they have to be present for the emergencies whether they are in home or hospitals and above all recent terrorism activities has made them to be alert for every time. This makes them to expect good salary package and

job security in return but it was not provided. So government in response increased their pays. Third important factor is respect and recognition from society and superiors. Comparative to engineer, this factor is at third place because normally young doctors are working under senior training and senior doctor working with each other and superiors so they have respect and regard from each other as compared to engineers. Similarly doctors working in private clinics they normally get recognition from the society in terms of their services. Next important factor is personal safety. Besides local citizen there is a big ratio of target killings of doctors in Pakistan, so providing personal safety is of much concerned for the doctors. Poor promotion structure is big worries in government hospitals that is why doctors have rated promotion as fifth important factor.

(Table: 5) show a positive stronger relationship between personal safety and good job timings its value is 0.957. It means good job timings will give more personal safety. As significant level is 000 which is less than 0.001 so we can say that it is statistically significant. Another relation is stronger between higher qualification is and good job timing. Its value is 0.951. Increase in good job timings would increase higher qualification opportunities.

Regression output of engineers and doctors against motivating factors:

1 Model summary:

Model summary is shown in (Table: 7). this table is important because it determines R value. It is called Pearson correlation coefficient. It tells relationship between two variables. However our concern is more to R^2 which is squared values of R. This R square is called co-efficient of determination. It indicates how fit is our data to the regression line or how far the actual and observed point on regression line or how intense is the relationship between two variables. Actual points are the real values plotted between two axis e.g. co-ordinates are drawn between two axis. Similarly observed points are points taken on regression line. It varies from o to 1 and takes account of difference of observed value from mean to difference of actual value from the mean. If R^2 is 1 it means these two points are lying on the same spot and intense relationship and if R^2 =0 it means it means these two points are far from each other and no relationship. Looking above table R^2=0.530 our value contributes to moderate to good fit between actual and observed points on regression line. Adjusted R^2 is obtained by taking account of total number of sample of population. Standard error estimate has the same purpose as R but difference is that it takes sum of errors in form of distances between observed point on regression line and actual point. No mean reference is taken as taken by R.

2 ANOVA:

Without going to detail in the ANOVA calculation, the most important portion of the (Table: 8) is F value. It is calculated by dividing variance between groups with variance with in group.

High value of "F" indicates that there is a high difference between groups than with in groups. It is the targeted person which is giving different motivational factor than predictors and it is statistically significant as .000 less than .001.

3 P-P plot:

The normal p-p plot (Figure: 8) shows our data point is following the normal distributed line. So we can say that our data is approximately normally distributed.

5.2 Male engineers vs. Male doctors:

Male engineers have chosen respect and recognition from society and superiors as top motivating factor (Table: 11). In most of the organizations in Pakistan this respect and recognition is not given to the engineers, which results very low motivation in work. Job security is the second most important factor because in Pakistan most of the male members are responsible for the support of family so they need job security to continue to support their family. Similarly good salary package follows the job security for the same purpose. Skill improvement trainings are next important factor because it refines the theoretical knowledge and help to solve problem practically. Another reason of selecting this factor could be that many Pakistani engineering organizations do not provide training programs. This ranking shows that male engineers are concerned to need of skill improvement trainings in organization. Promotion is the next important motivating factor in a way it not only provides financial benefits but also helps to tackle problem at different posts in the organization. That's help in the improvement and building of different skills as well.

Doctors are closer to the people in the form of patients rather than engineer that is why serving people rated top factor than engineer which is at number nine position (Table: 11). Then personal safety as the second important top motivating factor this is because in last past years many male doctors were killed and kidnapped. So this increases fear of personal safety in these professional than male engineers. That's why they need more personal safety in form of life security, insurance and pensions than engineers. Job security is not a big matter for doctors than engineers as they can survive without job security but it is still rated at third position due to ease of work and other benefit getting from job security. Good salary package is the fourth important factor and at lower position than compared to male engineers because they know they can earn good once they get experienced however it is still an important factor. Respect and recognition from society is rated at fifth position which is lower than engineers because they are closed to societies/people in forms of patients and they normally get respect and recognition while working in the society. So they are less bothered about that than engineers. Promotion is at sixth position this is because of getting good salary and benefits in form of promotion. Skill improvement training's and Good working condition is next important factors at six position but

engineers rated as number eleven. In Pakistan, engineers are facing lack of jobs and less salary issues so they usually compromise work place conditions over financial benefits. Doctors work in hospitals, rural areas and hostile places; however male doctors are usually posted to hostile areas. These hostile environments pose health issues for themselves also so they demand good work place conditions. Similarly skills improvement training in doctors is at lower position than engineer because engineers needs more training to improve their knowledge besides their routine works however doctor learning/skills are continuously improved from their daily routine because of variety of patients cases they are confronted in hospital/clinics. So they do not require training as much as engineers. Doctors normally works in multi places however engineers mostly have single jobs so they want more money and compensation in the form of financial benefits that's why this rating is high in male engineers. Since equal and fair treatment of employee are not much concerns for doctors than engineers probably due to the fact that male doctors are more concerns with their own work and own experiences.

5.3 Female engineers vs. Female doctors:

Respect and recognition from society and superiors is still a top motivating factor for females (Table: 14) like males with the same reasoning as provided above. In Pakistan, normally a male member is responsible for financial support of the family but due to the increasing prices of goods and house rents etc. male member could not alone able to support the expenses, so woman has to work to combat the living standards/needs that's why the good salary package is the second important factor for female engineers. Similarly population has been grown up and the family members are also large this is also a big reason to make female engineers to work for money and becomes the helping hand of family. Promotion and work place condition is at third placed because with the passage of time promotion will increase the salary package. Female engineers have given high rating to work place condition as compared to female doctors. The probable reason could be that usually engineering jobs are tougher as compared to medical jobs i.e. different risky constructional projects, tunneling projects, remote sites etc. So in Pakistan, parents do not allow their daughters for these jobs due to traditional and Islamic boundaries. So female engineers need good work place conditions where they can enjoy all dimensions of professional career. However in contrast the nature of medical jobs is such that they have to work with patients and medicines etc. so they are provided with healthy working conditions and they usually enjoy same healthy environment as compared to female engineers even if they are posed to remote places. Equal and fair treatment of employee from superiors is at next place. Due to lack of knowledge in past, women in every field were underestimated and not treated as equal important employee like males especially in engineering field where they are tough work in sites however this trend is changing that's why female engineers working in organization have given this as the fourth important factor than doctors at 10. Job security is at the forth place in engineers list because many a cases have been seen where lot of female engineers quit jobs while serving because of many reasons e.g. like marriages, family matters or due to traditions in many

houses that women cannot work etc. that's why this important factor is in lower position of the list.

Good job timing is top motivating factor for female doctors (Table: 14). There are two reasons for this. First, normally female is responsible for the house hold work and secondly this field have normally odd working timings and it is not considered good for the female to work late night hours in Pakistani tradition. So for better management of family life and society with profession, female doctors need a good job timing that is why good job timing is important motivating factor than engineers. Good salary package is second important for better living. Respect and recognition from society and superior is third important factor because it increases self-confidence in male dominant working society. Improvement in this self-confidence will lead to better motivation for doctor to work for humanities/patients. Job security is less important for female doctor than female engineers because as the time pass they can earn better from private clinics. Serving people and promotion is next important factor. Relationship with co-worker is important in female doctor than engineer because there is large dealing of female with male doctor, nurses etc. regarding patients operation, caring. So this relationship is more important in doctor than female engineers with their staff. That is why female doctors rated it number 9 and engineers number 13.

5.4 Single engineers vs. Single doctors:

Single engineers are more enthusiastic, they have the power to work with all of their strengths and take risks for their professional growth because they have fewer responsibilities than married people. Respect and recognition from society and superiors is still the top motivating factor for engineers (Table: 17). Good salary package is the second important factor because at this stage of life they want money for many reasons e.g. to enjoy life, have good standard of living, and especially in the Pakistani culture they have to earn to get married and to invest in many other business as well to have good return in future. Equal and fair treatment of employees is the third factor because single people are enthusiastic; they work hard for their good future so they want equal and fair treatment of employees. If this factor is missing in organization and person with less effort move to new posts or awarded, then this demotivates employee specifically the literate people of society i-e engineers. For example part of private engineering sectors, mostly government organizations lacking this factors which demotivates their interest in work. That is why engineers ranked it at third position. Unmarried/Single engineers are not concerned with job security may be due to they want more experience in different organization as long as they are single. Job empowerment is the other factor which is at seventh position which means the power of chair. It means single engineer are more concerned to have the power of post to carry their tasks.

Good salary package and good job timing is equally top motivating factor (Table: 17). At the start of the career mostly graduates are single and they have to do house job. During house job they have to face enormous work load and long duty hours. So good job timing is important for

enjoying life in tuff environment than engineers who have relatively relaxed working hours. That's why doctors have ranked it at 5 and engineers at 8th place. Single doctor aims to get more experienced through skill improvement trainings as they rated 3 in the list. The single doctors have given more importance to higher qualification opportunities as compared to single engineers. One of the reasons is that now a day's completion is high among doctors so they want to improve their education to survive professionally. The other reason could be that in Pakistan organization usually require engineers with basic engineering education, however medical employers requires doctors with specialized degrees so these impulsions have forced them to seek higher qualification opportunities. Next factor is promotion and at the same time equal position by serving people. This is because during earlier phases of profession, young single doctors have high motivation to work for people/nation. That's why this rating is high in unmarried doctors than engineers.

5.5 Married engineers vs. Married doctors:

Top motivating factor for married engineers respect and recognition from society and superiors which is continuously been the top motivating factor in engineers list (Table: 20). Job security is second important factor because married engineers don't take risk of insecure job. An insecure job means employee will be fired any time when company doesn't need his service. So they are much more concerned to have job security for continuous family support. Third important factor is skill improvement trainings. The married engineers have given more importance to *skill improvement trainings* as compared to married doctors. The reason is that usually engineers have only one job at a time and after marriage their family expenses becomes huge so this pressurizing situation makes them to improve skills to get more financial benefits and promotion however in contrast married doctors normally in such a phase of life they have usually gained enough professional skills to earn from multiple sources i.e. hospitals, private clinics etc. that's why married doctors have given less importance to skill improvement as compared to married engineers. Fourth important factor is good salary package. This is because there is joint family living culture in Pakistan where there are large family members and normally a single source earning married engineer has to support living expenses of their family. That's why married engineer rated good salary package as slightly important motivating factor than doctors. Financial benefits are the next important factor because of having better life in poor country like Pakistan. Promotion and higher qualification opportunities is next equally important for good career growth in the organization. Similarly for having balance life between family and office good job timing is next important factor.

Married doctors are concerned to personal safety and serving people (Table: 20). Personal safety is more important in married doctors than engineers which rate them at 13. This is because of recent killings of doctor in Pakistan and all of them were married. However serving people is also the same position because of their passion to serve the nation. Good salary package is next important for good living standard and satisfying life of one's family members. Similarly promotion follows next to it for career improvement. However job security doesn't not concern

much to doctors because they can earn privately as well from clinics/hospitals. So they are less concerned than engineers as illustrated by the above table. Similarly respect and recognition is important for doctors but less than engineers because their concentration is towards building a good career ahead and to do much for the betterment in serving people rather than focusing on gaining respect and recognition from society and superiors.

5.6 Government engineers vs. Government doctors:

In many of the government organization Respect and recognition from superiors is not provided because of many factors e.g. jealousy, personal like or dislike from boss etc. So they rated as top motivating factor (Table: 23). Although government sector is renowned of their job security facility but now they have focused on contract job due to weak financial conditions of country so it has been rated as third important factor. Government engineers rated good salary package as their third motivating factor. Promotion process is normally delayed in government organization but it is still important motivating factor. Similarly most of the engineers in this sector are idle and they have same level of expertise during their career in government organization because of lack of trainings that's why it is rated as fifth most important motivating factor. In Pakistan government sectors mostly duty timings for engineers are 8-working hours. However there are no fixed job timings for doctors in government hospitals due to manifold reasons i.e. shortage of doctors, emergency cases, target killings, terrorist attacks and bomb blasts situations especially in Rawalpindi and Islamabad. In all these scenarios doctors are forced to work beyond their job timings, their allocated holidays are usually canceled and they can be called at any time, that's why they have given more importance to good job timings as compared to government engineers.

In comparison, doctors have given personal safety and good salary package as top motivating factor (Table: 23). Due to the current security conditions in recent years in Pakistan, a large amount of government doctors are threatened, killed and kidnapped. These conditions have increased the fear factor in doctors and that's why they demand more personnel safety as compared to engineers. Good salary package is been reported to demotivating for doctor. Recent protest of government doctors in Pakistan is in accordance with improving salary package and lack of service structure. Promotion is a part of this poor service structure which is third important factor. Job security is at second place because government gave many benefits to doctors in case of having permanent job. This reason made it to occupy second position. Work place conditions and equal and fair treatment of employee is at lower part of the list. Work place condition is more important to doctors than engineers because besides some government hospital there is issue of hospital cleanness. Cleanliness is very important in hospital perspective than engineering industry. So it is at six positions. However Equal and fair treatment of employee are less important to doctor than engineers because doctors normally concerns to increase individual's learning rather than having competition with their colleagues. However it is important because it provides equal opportunities of the employee to excel in its own field based on one's talent which is normally lacking in government sector environment.

5.7 Private engineers vs. Private Doctors:

Engineers have given Respect and recognition from society and superiors as in like other demographical comparison (Table: 26). Good salary package is the second important factor because normally private sectors takes much work from engineers so they expect a very good salary package for their motivation while working in this sectors that's why this rating is high in private sectors engineers. Job security is at important position at third because private sector does not give job security. Engineers are normally tensed in this sector because if company thinks that their service is not required then they can fire engineers from the company. That's why they give importance to job security. Equal and fair treatment of employees from superiors is at higher position in engineers than doctors. This may be because normally engineers work in a single private organization at a time and difficult to switch to new companies/organization so they expect equal and fair treatment of employees from superiors in order to work comfortably and excel in the same organization but doctors have relatively more choices to switch from current position to other hospitals and private clinics etc. so they are usually less interested in equal and fair treatment of employees as compared to private engineers. Financial benefits is at 6^{th} position than doctors who ranked at 11^{th} this is may be due to the fact that private doctors often earns more than engineers due to numerous opportunities to earn from multi hospitals and clinics a day but private engineers normally earn from a single source that may be unable to fulfill their expenses. Private organization have normally long hours duty timing it was thought that engineer would place it at higher position in the list but it is at seventh position this may be due to several reasons i-e engineers working in private sectors was used to this sort of timings, pressurized environment where they have to complete tasks with in due date or by the fact that private organization give extra financial benefits, bonus in case of overtime/long duty hours. These all reasons may accumulate to occupy lower spot in the list. Higher qualification opportunities is at 11^{th} spot this is due to two reasons. First, due to long job timings they are unable to manage part time education as engineering study demands much time. Second, pressurizing job in this sector helps them to develop skills and professional experience, so they don't go for higher qualification.

Serving people is again important factor for private doctors (Table: 26). Good salary package and job security is at second and third place respectively. These two factors are same as engineers. Respect and recognition from society and superiors is at fourth place this is because normally there is large amount of doctor working privately and they need more recognition from society for good source of their earnings. After personal safety and promotion, good job timing is at slightly higher position in motivational list of doctors than engineers because of the fact private doctors in search for earnings, sits more than two or more clinics a day and often run with shortage of time for their family. However in contrast mostly private engineers earn from single job/work for earnings and they give all time to same work place. So engineers are less concerned to good job timings than doctors. Higher qualification opportunity is at seventh place in doctors than engineers which have placed it eleven. This is because simple M.B.B.S is not a worthy

education in this competitive environment so only way to survive is to increase education in case of not having government job because government often give educational scholarships to their workers and feeling of job security but private doctors have to bear their own expenses.

There are number of limitations in the study.

First, Study will be good if there is equal number of respondents. Since there are 67 doctors and engineers were 87. Shortages of doctors' are due to several reasons. Firstly, study is restricted to Rawalpindi/Islamabad region. Secondly, there is tuff schedule of doctors and cannot be easily approached. Thirdly, due to busy schedule of doctors, their ratio of using internet is very less than engineers so it's not possible to fill online questionnaire however in contrast 50 survey forms was filled online by engineers.

Second, Survey becomes matured when there are huge numbers of participants. If there were more 100 equal respondents of doctors and engineers then result will be good.

Third, Single doctors are less in the surveyed result due to two reasons. Firstly, single doctors less targeted in questionnaire distribution and secondly, most of the doctors which are observed in questionnaire were married at the age of 25 and 26, normally large amount of engineers are single at this stage.

Fourth, in every form of demographical description of our survey, Job autonomy and job empowerment have given low weightages. This is possibly due to lack of understanding their meaning/term or they have filled intentionally.

Conclusion and future Research

Motivation is a very complex phenomenon and it varies from persons to person. However this effort is done to find out the motivational factors of engineers and doctors and why there is difference in motivational factors between them. It also aims to identify whether there is difference in motivational factor between male, female, government, private and single, married and experienced person. However analyzing the overall difference it is seen that only money is not an only motivating factors but there are other factors equally important. Like engineers given respect and recognition from society and superiors is top on the list for engineers. Then job security and then good salary package. Similarly doctors have given importance to serving people as the most important motivating factor. Then job security and good salary package parallel. Providing promotion and skill improvement trainings is important for both of them. However there are number of factors which are discussed here it is not possible for the organization to provide but it is helpful for retaining and recruiting engineers and doctor, for bringing motivations in engineers and doctors working in industries whether they are single, married, working in government or private sector and in number of industries where doctor and engineers working together like in huge risky construction projects.

Numbers of researchers have provided their research work on motivation. Many of them used different motivational factor to test in the industry. So beside this there are other motivational factors which can be surveyed e.g. interesting work, etc. Future research can be done in other parts of country region for its validation but also for difference in opinion as well. Increasing population will bring refinement in study and more and more views can be taken. However there is room for future research in interpreting these results better by using SPSS software. This will help to elaborate the results.

Similarly the above study is on engineers and doctors from every field. Using these motivational factors, future research can be done on specialized doctor and specific technology of engineers like mechanical, electrical engineers.

Recommendations

- Job security and good salary package is a desperate need for the engineers and doctor, organization should meet these factors without any distinction between professions up to their satisfaction level

- Companies must provide a proper frame work where engineers have respect and proper recognition of their work from the superior as well as from the society

- In the same working place, organization providing financial benefits to the male engineers will bring more motivation than male doctors

- Females engineers and doctors are prone to good job timings, flexible working hours in organizations would increase their motivation level

- Officials can motivate private sectors engineers by giving equal and fair treatment to employee as it would provide equal opportunities to engineers to move ahead and build confidence

- Hospitals must provide a very healthy work place condition to doctors, lack of providing such factors will demotivate them

- Doctors are passionate to work for humanity so government must provide a very good platform to get output from them.

- Recent killings of doctors has increased insecurity with in doctors so it is mandatory for the government to protect them and increased their personal safety.

- Unmarried doctors have a strong will to get higher qualification. If government provides such opportunities to doctors then it will increase likelihood that doctors will come back and serve their country

- Officials tours, job autonomy and job empowerment is not a big source of motivation for engineers and doctors so it's not necessary for the organization to provide such factors

- It's mandatory for the organization to provide cooperative environment which helps in improving relationship with co-workers. This helps in improving productivity of the professionals.

- Professionals are attracted to that organization which provides skill improvement trainings programs to the employees. Organization/hospitals providing skill improvement trainings programs to these knowledge workers will helpful in retaining their employees and reduce the risk of hiring and firing

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