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RESEARCH ARTICLE

Study of Relation between Aptitude Management and Analyzing the Operation Organization in Office of Transposition

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ABSTRACT

In recent years, management scholiasts were speaking about aptitude management. It has many effects in structural organization for humanist source and can fix assured and worthy persons that have employing responsible in organizations. (increasing of employers applications for taking skillful work force and tendency of workers for taking important employment cause the challenging that is to name it aptitude challenging.)(Gay, simz, 1387: 17). Now days, wonderful transformation of management knowledge made evaluation system inevitable, as lacking this system can disorder different organization. So, analyzing of operation is one of the important working that can be improved to take necessary information about employers and organizations and if it is done in correct way, the employers and organization operation also improve. If the analyzing of organization operation was done exactly, it can have important effects in organization and made employers to know their responsible.

Key words: knowledge management, analyzing system, aptitude challenging, work force

INTRODUCTION

Economy scholars introduce economy as sagacity and third millennium scholars introduce it as humanist capital. Expansions of humanist sources are recognized as secret of staying institutions. We cannot say that the important challenge in business is just technology, but exploitation from human force and ready humanist capital is basic secret in facing to business challenging. The quick and spreading changing in modern organization cause lacking skills that is important challenge in bazar. ((increasing of employers applications for taking skillful work force and tendency of workers for taking important employment cause the challenging that is to name it aptitude challenging.) (Gay, simz,

1387: 17). In this challenging, all organization try to improve their strategy and also their ways and method in order to take aptitude for continuing of their economy, for this reason, they should know which ability can manage aptitudes (Gay, simz, 1387:18). The word of aptitude management was used for first time in an article in 1998 by DayvidWalkinz.Aptitude management means that fixing persons with suitable skill in suitable employment place in order to take objected purposes (Maali, tajaldini, 1387:62).

Subject

Aptitude management was defined as lateral responsible in 1970 to 1960 decade, but now days, it is defined as responsible organization that is related to all organization seriously (Maali, tajaldini, 1387: 191).

The components of aptitude management are

Illuminative speaking about necessary of organization to aptitude management for operating business strategy.
Recognizing the balance of readiness for superior employment pos.
Speeding to developing aptitude (KartRayt, 1387: 10).

Organization will face to competition challenging, for solving these challenging, they need worthy and influential managers, so aptitude management and succession planning
Managementbecome important in their future of organizations (KartRayt, 1387: 14).

Todays, business management and development of humanists force are not the center of incoming rather the aptitude management and variety of training try to decrease incoming and increase capital and value added. It is occurred that there is relation between aptitude management operation analyzing of organization. All public and private organization need to analyze operation system for developing so that they can analyze the balancing influence of organization programs and humanist process source. The starting of measuring operation related to New York project office in 1912, and in 1930; the measuring operation is promoted into operation government as meaningful and complicated tool. Moreover, it was limited to improve working mayor ability, civic managers or official expert (HolzoKoloby, 1384: 82). Organizations use analyzing system for increasing worthy payment, and operation passing as a chance to recognize distance purposes (Sadrolsadat, 1387: 1). So, the basic question is whether there are any relation between aptitude management and analyzing organization operation in public organization?

Undoubtedly, present era is the era of organization and the administrators of them are humans. These humans can create means of elevation, motion, and development in organizations by using meditation that is greatest power for them. In recent years, in Iran, the subject of training and development of human force was attended in different forms like knowing and training aptitude, succession planning, future managers and etc. (Maali, Tajaldini, 1387: 62). Todays, the basic and continuant question of most organization is that which strategy is effective at present for taking aptitudes in order to acquire a shamed and active applicant? Why today's the subject of aptitude management is more concentrated? (Maali, Tajaldini, 1387: 14).

The most reasons of this project are

Value creation of aptitudes

Financial value of organization is related to aptitude quality and they increase the value of organization speedy.

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Business in complicated and dynamic environment

Intense competition, long preservation of benefit competition is very difficult. Modern products and models have brief business environment and their willing is continuant innovation. Technology increase the access of knowledge level and this subject can cause us to move to business speedy. In fact, the number of organization develop universally by increasing this challenge.

Increasing board of directors

Board of directors and capitalist put senior manager under the microscope and expect them to create value. Although, these pressures are seen at level of senior manager, generally, they are transferred to all level of organization and concentrate on aptitude quality at all level.

Changing employer expectation

Employer expectations are changing, at the other side, organizations concentrate on strategies, and method of aptitude management.
Modern employers increasing
They are faithful to their profession more than to their organization
Their verification to the structure and traditional power source is least
They are willing to create balance between working and living.
Replying to all of these excessive challenging made employees mind conquered and hard. Moreover, the organization cultures have an important role in taking and preserving key aptitude.

changing in working force structure

Aptitude war has been occurred and the signs of changing are perceptible. For example, the number of management employment is expecting increase from 21 million to 34 million during 5 years in North American. At this time, the population of persons in 30-50 years old is expecting decrease from 63 million to 60 million (Maali,Tajaldini, 1387: 72)

Aptitude management has 3 components that are

Aptitude attraction

Quick following of aptitude should be one of basic strategy of management. Most of organization cannot attract persons as new member quickly. This lacking aptitude is longest obstacle in organizations. This stage includes all subjects that are related to recognize persons with high skills and also necessary for recognition, so in this way, organization capitalize to which persons? How human force should be organized? Those are valuable in creating and attracting way (Maali, Tajaldini, and 1387: 58)

Equality and preserving of aptitude

At this stage, the skill and responsible of persons becomes equal. The operation of work is managed to certain organization that their human force has greatest exploitation.

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Aptitude development

At this stage, employers need transparent and palpability developing of working path. The purpose of organization is that to capitalize employers to create chance of employing for them and also preserve their skill for replying to necessity and expectations of organization (Maali, Tajaldini, 1387: 63). It is occurred that aptitude management is related to operation of employers in organization. The operation of human is reflex of his knowledge, skill, and values (Abtahi, 1389: 291). The operation must be defined as conclusions of works, because it has strange relations with the strategic purpose of organization of purposes in operation organization. So, managers use promoting, transpositions, and concluding to employer works to understand inaudible skills and their suitable training (Parsaeiyan, A'arabi, 1388: 346).

The analyzing operation system can be effective, if it becomes flexible so that it can be changed with the other facts and changing that accrued in organization and environment (Saadat, 1386: 222).

The general purposes of analyzing operation are

1. Recognizing the measurement of operation and efficacy
2. Training and reforming human force
3. Recruitment and selection
4. Programming human force
5. Ascertain of employment path
6. Salary and preference
7. Recognition of potential aptitude persons

Project method

In this project, the questionnaires of Ali Zamanian M.A project in aptitude management, and questionnaire of a research in analyzing operation are used for collecting data. Iranshahr employers and ... managers of transposition are statistical society; that all of them are 350 persons.

Volume sample and sampling

By using kakran formula, volume sample is estimated as 350 people

$$n = (\,)/()$$

$$n = \frac{\dfrac{Z^2 \alpha_2 \cdot p \cdot q}{d^2}}{1 + \left[\dfrac{1}{N}\left(\dfrac{Z^2 \alpha_2 \cdot p \cdot q}{d^2} - 1\right)\right]}$$

Where 2a is a2 with layer normal standard and d is the maximum accepted errors in sample and p is the population ratio in society and q=1-p. p is assumed to be equal to 0/5%, this leads to the maximum of pq, and a=0/5, N=650, d=0/0027, and the number of sample is 350.

Analysis method

In this study we have used statistic method (include tables, frequency graph, frequency percent, central index (average, median, …..,) and dispense (variance, and standard deviation), column graphs, Histogram, circular, box, and dispersion. We have used khido test to determine independent between variance too.

In this group 58 percent of participants are 21 to 30 years old; 37 percent of them are 31 to 40 years old; 4 percent of them are 41 to 50 years old.
Description of variable questionnaire's analyzing operation and aptitude management employee in Iranshahr transposition office.
Also, the box graph is used for comparing two independent samples. It should be said that, the meaningful level is minded 0/05% percent that H0 and H1 are explained as following:
H0: there is meaningful relation between first variable and second variable in statistical society.
H1: there is not meaningful relation between first variable and second variable in statistical society.

After completing test with SPSS software, if amount of meaningful is found less than 0/05% percent, then H0 assumption must be rejected, if amount of meaningful is more than 0/05% percent, there is no reason for rejecting Ho.

Description of demo graphing indicator (Analyzing of variable mediator in project)
Description of variables questionnaire
Specification of participant in sexuality view:
At these two groups of testing, the 84/3 percent of them were men and 3/3 percent was women.

Specification of participant in education view

At these two groups of testing, 57/3 percent had diploma degree and lower than it, 35/5 percent had B.A degree and 2 percent had M.A degree.
Project hypothesis conclusions
Basic hypothesis

There is relation between aptitude management and analysis operation in total transposition of Iranshahr.

Analysis of linear relation between aptitude management and organization operation
H0: there is no relation between aptitude management and analyzing operation.
H1: there is relation between aptitude management and analyzing operation.

With due attention to amount of –p in Kendall and Spirman test that was less than meaningful level (0/05), so the zero hypotheses are rejected and it can be claimed that there is relation between aptitude management and organization analyzing operation.

First secondary hypothesis

H0: there is no relation between aptitude management and analyzing operation.
H1: there is relation between aptitude management and analyzing operation.

With due attention to amount of –p in Kendall and Spirman test that was less than meaningful level (0/05), so the zero hypotheses are rejected and it can be claimed that there is relation between aptitude management and organization analyzing operation.

Second secondary hypothesis

There is relation between equality and preserving aptitude analyzing operation
H0: there is no relation between equality and preserving aptitude analyzing operation
H1: there is relation equality and preserving aptitude analyzing operation

With due attention to amount of –p in Kendall and Spirman test that was less than meaningful level (0/05), so the zero hypotheses are rejected and it can be claimed that there is relation between equality and preserving analyzing operation.

Third secondary hypothesis

There is relation between developing aptitude and analyzing operation
H0: there is norelation between developing aptitude and analyzing operation.
H1: There is relation between developing aptitude and analyzing operation.

With due attention to amount of –p in Kendall and Spirman test that was less than meaningful level (0/05), so the zero hypotheses are rejected and it can be claimed that there is relation between developing aptitude and analyzing operation.

CONCLUSION

By concentrating to the all questionnaires and their relation to the aptitude management and also by paying attention to the hypothesis, it can be concluded that programming of human force in attracting, equality and preserving and developing aptitude is done in the entire transposition office Iranshahr city. The spector (2006) opinion can be referred to this subject, in his opinion; an organization should secure its human force regularly and continuingly for preserving its health and benefits. These human force are necessary for organization, because they are substitute of persons that leave there; and also, the post of organization that are changed during process of changing and developing need new human force. The exact programming for taking honest persons is essential for organization. Also it can be concluded thattrying of Iranshahr transposition office is compensated by conclusion that were related to aptitude attraction, programming human force as local and foreign recruitment, importance of selection and recruitment, analyzing of aptitudes, tests and interviews. And also by studying questionnaires of aptitude management, equality and preserving aptitude exactly, it can be concluded that the analyzing of suitability and their payment based on operation and suitability in Iranshahr transposition office are done exactly. Armstrong (2006) uttered the benefits of payment based on operation as following

1. It creates motivation
2. Reward payment to employers based on their operation is justly
3. It creates perceptible tool for rewarding payment and recognizing success (Gay, Simz, 1388: 37).

Studying questionnaires of aptitude management about human source aptitude show the Harrison view in (Landy and Kavling, 1388: 230); he utters: development is an important process that can be completed by individual and organization growth; and also, by studying management questionnaire about aptitude development, it can be concluded that training, learning and human force in Iranshahr transposition office is completed done and it was effective. It is also recognized that analyzing of operation in Iranshahr transposition office has in high degree and most of employers are satisfied about financial, technological, and physical source and they don't have any problem about team behavior and philosophy of organization management and they believe that the salary and equipment which are done by senior managers for organization are satisfied and reasonable; and there is no sensible difference

between operation degree and employer suitability and also salary degree. Operation and the other service compensation are harmonious with each other. The operation and the other equipment and technological sources are symmetrical with employer skills and their necessity. So, regarding to the all rules for recruitment of persons, creating of groups for working with each other, creating teams, and suitable payment to employer cause satisfaction of the office employee and increase their operations (Jozni, 1388: 84). Therefore, there is relation between aptitude management and organization operation. Organization can increase their operation by recognizing and employing persons that have high aptitude and their skills are harmonious to their job. As a result, it can be concluded that an organization that use persons which have aptitude and high potential in their working and can be effective.

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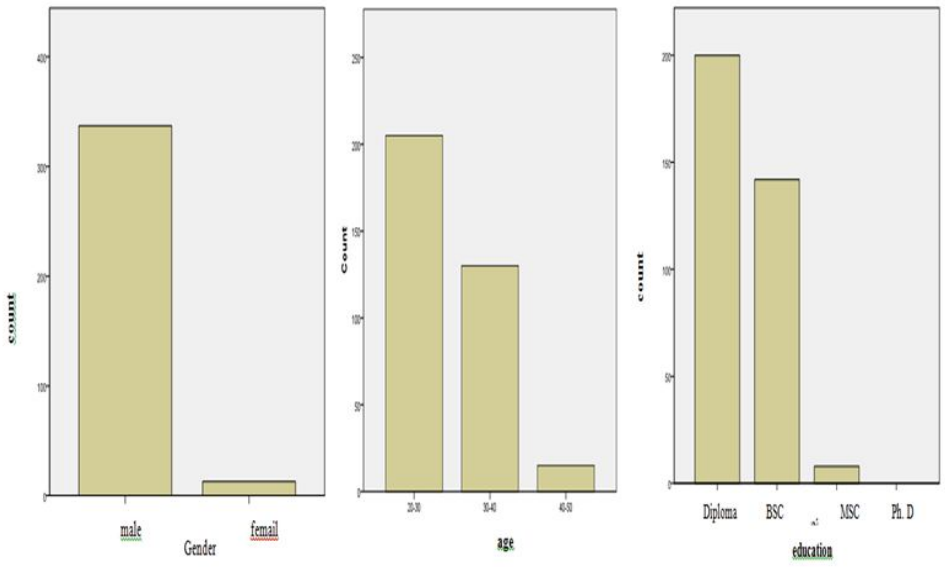

Fig.1. Variables describing the performance assessment and talent management of employees in Department of transportation of Iranshahr city

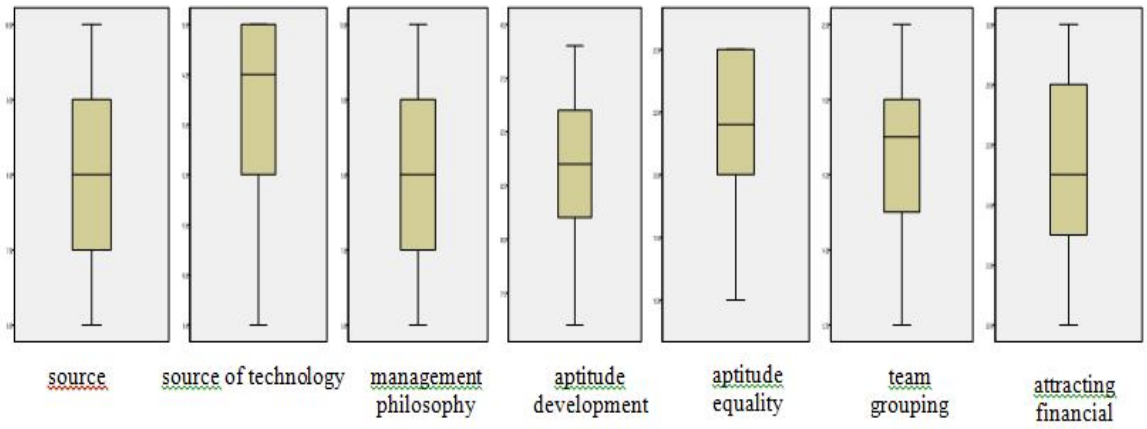

Fig.2.

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RESEARCH ARTICLE

Evaluating the Relationship between the Emotional Intelligence and Productivity of IRIB Managers

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ABSTRACT

Human resources are one of the most essential strategic resources of any organization. In order to overcome the challenge of efficient utilization of this resource, a more profound and comprehensive knowledge of the concepts and structures related to human resources and its specific means is required. It seems that one of the components affecting the productivity of human resources is emotional intelligence. emotional intelligence refers to the capacity or ability of organizing emotions and feelings of one`s self and others to be motivated, effectively control the emotions, and exploit them in communicating with others. This study aims to investigate the relationship between the variables of emotional intelligence and the productivity of the managers of Islamic republic of Iran broadcasting. The statistical population of this research is comprised on 120 mangers of Islamic republic of Iran broadcasting and the simple random sampling was employed. The statistical sample size was considered 30 individuals based on Cochran`s formula. Moreover, a questionnaire was used to collect the data and Goldman'smodel was employed to evaluate the emotional intelligence component. In order to evaluate the managers` productivity, a comprehensible questionnaire was designed. In order to determine the relationship between the emotional intelligence and productivity of the Islamic Republic of Iran Broadcasting managers, regression and correlation test were used.

It was shown that there is a positive and significant relationship between personal productivity and emotional intelligence. Moreover, there is also a positive and significant correlation between each component of emotional intelligence and each of personal productivity. Another results of this research is that there is no significant correlation between emotional intelligence and organizational productivity. Of

all dimensions of emotional intelligence and organizational productivity, there is only a positive and significant relationship between self-awareness and organizational efficiency. In other words, increasing the self-awareness of individuals leads to a significant improvement in the efficiency of the organization.

Key words: emotional intelligence, productivity, Islamic Republic of Iran Broadcasting

INTRODUCTION

Human resources are one of the most fundamental strategic resources of any organization. Admittedly, the success of organizations and work environments depends on the efficient utilization of human resources based on behavioral sciences. In order to overcome the challenge of efficiently using human resources, a more profound and comprehensive knowledge of the concepts and structures related to human resources and its specific means is required and eventually, it is essential to acquire the skill of exploiting these structure and instruments (Hersy and Blanchard, 1996).

In late 20th century, we have witnesses a new application of psychology in work environments, organizations, companies, and human resources management. The paradigm of emotional intelligence and its effectiveness in eliminating human resources issues and problems is one of the most disputatious psychological issues for the last decade (Kelly and Kaplan, 2002; Li, 2005; Conrad and Mamangal, 2000).

This study aims to evaluate the relationship between emotional intelligence and productivity variables of the mangers of Islamic Republic of Iran Broadcasting.

Theories

Emotional intelligence

The term “emotional intelligence” was first scientifically introduced in a scientific article of post-graduate degree in psychology. Since then, different researchers have studies this issue in various contexts. The first theorists who presented a scientific definition of emotional intelligence was Peter Salovy (1990), who considers it a type of emotional information processing, which includes the proper evaluation of excitement and feeling in one`s self and others and proper expression and adaptive adjustment of feelings, such that improves the standard of living. In 1999, Mayer et al. improved this definition and consider emotional intelligence the ability, which tries to understand the concept of emotions and their relationship, as well as reasoning and solving issues accordingly. Emotional intelligence is the capacity to understand emotions, combine the feelings pertaining to emotions, and understand and manage the information of these emotions (Siaroushi, Forgas, and Mayer, 2001: 9).

DanialGoleman is one of the first individuals, who applied the term “emotional intelligence” and his name is tangled with it more than other researchers (Hay In, 2004: 1). It was at this era that Goleman published his well-known book, titled emotional intelligence, in 1995 and considerably altered the definition of emotional intelligence. In his definition, he introduces emotional intelligence as follows: the capacity or ability of organizingemotions and feelings of one`s self and others to be motivated, effectively control the emotions, and exploit them in communicating with others (Goleman, 1998: 317-318; Rahim and Minetoris, 2003).

Goleman relates social skills, e.g. Communication, leadership, and contradiction management, to emotional intelligence. After some years, Goleman simplified his model and presented a 2x2 matrix with self-awareness, self-management, social awareness, and management variables as figure 1 (2001).

At the same time, Bar-Ann (2000) proposed another definition of emotional intelligence: a set of skills, abilities, and non-cognitive capabilities, which affect our general ability to respond to environmental pressures and needs (Mandel and Ferovani, 2003: 389).

Emotional Intelligence Components

Mayer, Solovy, Caroso, Goleman, and Bar-Ann are the most well-known researchers who studies emotional intelligence. These theorists proposed different dimensions for emotional intelligence: Mayer, Salovy, and Caroso conducted a research in university settings in 1999 and introduces an emotional intelligence model with four factors:

Emotional Perception and Expression

The ability of being aware of the feelings of one`s self and others, as well as properly expressing emotions and emotional needs to others. Emotional perception also includes the ability to distinguish between honest and dishonest emotional expression.

Emotional Facilitation of Thought (Using Emotional Intelligence)

The ability to distinguish between different emotions that an individual feels, as well as the ability to apply those emotions to enhance and increase thinking.

Emotional Understanding

The ability to understand complex feelings, as well as decomposing emotions into different components and understanding the potential change of one emotionalstate to another.

Emotional Management

The ability to communicate or not communicate an emotion based on its utility in a certain situation (Stace and Brown, 2004: 7).

According to Stace and Brown, the term “emotional intelligence” is a form of social intelligence that refers to

The ability to control the emotions and feelings of one`s self and others, as well as the ability to distinguish them and use this information as a guide for thoughts and practice (Chernis, 2000: 3).

In a research with more than 4000 samples in the United States, Bar-Ann (1997) dividesemotional intelligence in the form of intelligent and social behavior in 5 components:

Interpersonal Component

the ability to recognize and understand feelings, emotions, and ideas of one`s self.

Intrapersonal component

The ability to recognize and understand the feelings and emotions of others.

Adaptability component

The ability to be flexible and change emotions based on the current situation.

Stress Management component

The ability to be compatible with pressures and the constructive and effective control of emotions.

General Mood Component

The ability to feel and express positive emotions and consider the brighter half of life (Day et al., 2002: 15).

In 2001, by studying 600 managers, organizational experts, and graduate students, Goleman proposed his model as the emotional intelligence competency inventory. The initial model included 5 dimensions and 25 components, which was later reduced to 4 components and 20 abilities (Cochr et al., 2007: 32):

Self-Awareness

Is an individual capable of properly recognizing his own emotions whenever they are updated? For instance, emotional awareness, proper self-evaluations, self-confidence.

Self-Management

Is an individual capable of steering his emptions towards positive results? For instance emotionalself-control, sense of duty and consciousness, compatibility, achievement motivation, innovation.

Social Awareness

Is an individual capable of properly recognize the emotions of other when confronting them or working with them? It is represented as sympathy, service-orientation, and organizational awareness.

Relationship Management (Social Skills)

Is an individual capable of effectively and constructively managing his communications with other and steer them towards positive results? For instance, nurturing others, penetration, communication, conflict management, illustration, analysis and change, cooperation and team work (Garry Wes and Brad Berry, 2003: 2).

These dimensions are presented in figure 1

Productivity

Productivity refers to the effective and efficient utilization of inputs or resources to produce or provide outputs. Inputs or factors are resources (e.g. energy, raw materials, or work force and assets), which are used to generate an output (the produced commodity or provided services by an organization). In other words, productivity means obtaining the maximum possible profit by optimally using the work force, ability, talent, and skill of human resources, fields, cars, money, equipment, time, location, etc. to promote welfare (Tangen, 2005).

Acton and Goledon (2003) consider productivity the ratio of actual input to expected resources and Aftalion defines it as the ratio of the produced and consumed factors (Caschiew, 1992).

Mitchel et al. (2001) consider productivity an added value of the input production factors. Nilli considers productivity as the input of each work hour, which is the main factor in determining the average standard of living.

Plus and Louiz (2001) believe that productivity means how much and what quality of the resources are consumed by the organization to produce commodities. It means to produce commodities with higher qualities with less resources.

Somanth (2000) consider productivity as the comparison between physical input factors and physical output factors.

Kelly and Kaplan (2002) consider productivity as the efficiency and effectiveness, i.e.the ratio of the added value time to the total time.

Davenport et al. (2002) define productivity as the quality, efficiency, and profitability.

Psychology of the Research

The statistical population of the research include 120 managers of Islamic Republic of Iran Broadcasting and simple random sampling was employed. The statistical sample size was estimated 30 individuals based on Cochran`s formula.

In order to determine the relationship of the emotional intelligence and productivity of managers of Islamic Republic of Iran Broadcasting, regression and correlation test were used.

The method used for data collection is questionnaire and Goldman's model was used to evaluate emotional intelligencecomponents. In order to evaluate the productivity of the managers, a comprehensible questionnaire was developed.

RESEARCH FINDINGS

The studies individuals in this research consist of 30 managers of Islamic Republic of Iran Broadcasting. The descriptive indices of the emotional intelligence, individual productivity, and organizational productivity grades as well as their dimensions are presented in table 1.

Results of table 1 indicate that the average organizational productivity (75.46) is considerably lower than the average personal productivity (132.80). Moreover, the emotional intelligence grade with mean 164.33 is higher than average.

Before examining the research hypotheses, we must first investigate the normality of the studies variables` distributions to determine what method (parametric or non-parametric) should be used to test the hypotheses. Considering that the sample size is lower than 50 individuals, in order to investigate the normality of main variables` distributions, Shapiro Wilk test was used instead of Kolmogorov–Smirnov test. Results of the normality test is presented in table 2.

Before interpreting the results of table 2, we must note that if p-values of variables is higher than significance level 0.05, we can conclude that its distribution is normal. Therefore, accordingly, results of table 2 indicate that the p-value corresponding to Shapiro Wilk test in the grades of the emotional intelligence variable and its dimensions is higher than 0.05; however, for personal productivity grades and its dimensions, p-value is lower than 0.05 and for organizational productivity, except for employee satisfaction, p-value is higher than 0.05. Therefore, we can conclude that the distribution of the emotional intelligence variable and the organizational productivity is normal and that of personal productivity is not.

Tables 3 and 4 present the correlation coefficients between the emotional intelligence variable and each variable of personal productivity and organizational productivity, as well as their dimensions.

As we can see in table 3, there is a positive and significant correlation between emotional intelligence and personal productivity ($p<0.001$ and $r=0.640$). Moreover, there is also a positive and significant correlation between each dimension of emotional intelligence and that of personal productivity. In other words, increasing the grades of emotional intelligence and its dimensions, the corresponding grade of personal productivity and its dimensions increase as well.

According to table 4, there is no significant correlation between emotional intelligence and organizational productivity ($p>0.05$ and $r=0.160$). Moreover, among all dimensions of emotional intelligence and organizational productivity, there is only a positive and significant correlation between self-awareness and organizing efficiency ($p<0.05$ and $r=0.355$). in other words, increasing an individual`s self-awareness, also significantly increases the organization`s efficiency.

In order to predict personal and organizational productivity, as well as their dimensions, using emotional intelligence, simple regression analysis was used, whose results are presented in tables 5 and 6.

Based on the results of table 5 and considering the significance of F test in all cases, we can observe the positive and significant effect of emotional intelligence on personal productivity and its dimensions. More specifically, based on the obtained determination coefficient (R^2), we can say that 47.7% of personal commitment changes, 48.9% of abilities promotion changes, 47.3% of increasing the changes of the quality of work, and totally 51.5% of personal productivity changes is explained by emotional intelligence. Examining regression coefficients and their significance indicate that emotional intelligence can positively and significantly predict all dimensions of personal productivity; it means that increasing the emotional intelligence variable for one unit respectively increases personal commitment, abilities promotion, increasing quality of work, and generally personal productivity for 0.228, 0.199, 0.143, and 0.570 units.

According to table 6 and considering the insignificance of F test in all cases, we can observe the insignificant effect of emotional intelligence on organizational productivity and its dimensions. Similarly, in order to predict the dimensions of personal and organizational productivity using emotional intelligence dimensions, multiple regression analysis was simultaneously used, whose results, as well as regression statistics, are presented in tables 7 and 8.

Results of table 7 indicate that the value of F-test to examine the simultaneous effect of emotional intelligence dimensions on each dimension of personal productivity (personal commitment, abilities promotion, and increasing the quality of work) were respectively 7.726, 7.632, and 7.157, which are significant at the $p<0.05$ level. Values of R^2 show that respectively 55.3%, 55%, 53.4% of personal commitment, abilities promotion, and increasing quality of work changes are explained by emotional intelligence dimensions. However, looking at regression coefficients and p-values indicate that none of the micro-scales of emotional intelligence cannot predict personal productivity components alone.

As we can see in table 8, and the insignificance of F test in all cases, we can observe the insignificant simultaneous of all emotional intelligence dimensions on those of organizational productivity.

CONCLUSION

This study investigated the relationship between emotional intelligence and productivity variables of the managers of Islamic Republic of Iran Broadcasting. The research population included 30 individuals of the managers of Islamic Republic of Iran Broadcasting. It was shown that the average organizational productivity is considerably less than the average personal productivity of the employees. Moreover, the grade of emotional intelligence is higher than average.

It was also shown that there is a significant and positive correlation between emotional intelligence and personal productivity. Moreover, there is a positive and significant correlation between emotional intelligence and personal productivity dimensions. In other words, increasing the grades of and its dimensions also significantly increases the personal productivity and its dimensions.

On the other hand, it was shown that there is no significant correlation between emotional intelligence and organizational productivity. Moreover, among all dimension of emotional intelligence and organizational productivity, there is a positive and significant correlation between self-awareness and organization efficiency. In other words, increasing self-awareness in people also significantly increases organizational efficiency.

In addition, we can observe the positive and significant effect of emotional intelligence on personal productivity and its dimensions in all cases. However, emotional intelligence has no significant effect of organizational productivity and its dimensions.

Considering the result of this research, we can say that the ability produce or utilize emotions plays an important role in personal productivity. Therefore, in order to survive in today`s competitive and turbulent environment, organizations should be equipped with novel business thoughts and continuously improve themselves. The leadership of such organizations is very sensitive and complicated and this sensitive is doubled when the leader is faced with adaptive changes that are quite different from technical changes. Technical problems can be solved through technical knowledge and common processes of problem solution; while, adaptive issues are different against these approaches. Leading an organization to adapt to changes to survive in new business settings requires particular characteristics that managers are faced with many problems in realizing them. Accordingly, emotional intelligence is the most important personal component that can help leaders and mangers. Since emotional intelligence is the ability to use feelings and emotions in self and others in personal and group behaviors to achieve optimal results with maximum satisfaction, combining managerial knowledge and emotional intelligence abilities in managements can lead to satisfying goals. Moreover, considering the importance of the quality of work life variable in employees` productivity, some recommendations arepresented as follows and it is hoped that it can effectively improve the IRIB managers` productivity:

Due to the spread of visual media, competition in this industry is increasingly intensified. In this state, in order to achieve the highest level of productivity, each media should optimally utilize its current availabe resources. Considering the current era of knowledge and emphasizing that organizational employees are today`s organizational capitals and the competitive advantage of pioneer organizations, providing a suitable environment for employees can help managers to succeed in this competitive setting. Of course, this can only be realized when in their relationship with coworkers, managers take advantage of their heart (the foundation of their emotional intelligence).

Considering the increasing and rapid changes of science and technology and knowledge-based organization, we should emphasize on more communication with the outside of the organization, specialized relevant training is an important means to creating scientific and specialized interactions with organizations and evaluating the effectiveness of these trainings.

It is recommended to organization mangers to utilize emotional intelligence (that is a novel notion in business) and accept that the rules of the game is different in the post-modern world and they should act according to up-to-date rules (managers and businessmen who have high emotional intelligence, i.e. people who know and guide their own emptions and understand purposefully deal with the emotions of others, are more successful in running the market).

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Figure 1: dimensions of emotional intelligence according to Goleman

Others **Social Skills**	**Self** **Individual Abilities**	
Social Awareness ✓ Sympathy ✓ Service Orientation ✓ Organizational Awareness	Self-Awareness ✓ Emotional Awareness ✓ Proper Self Evaluation ✓ Self-Confidence	Recognition
Relationship Management ✓ Nurturing Others ✓ Analysis and Interpretation ✓ Penetration ✓ Commitment ✓ Communication ✓ Cooperation ✓ Conflict Management ✓ Collaboration	Self-Management ✓ Self-Control ✓ Trust Worthiness ✓ Awareness ✓ Innovation ✓ Achievement Motivation ✓ Compatibility	Adjustment

Table 1: mean and standard deviation of the studies variables` grades

Standard Deviation	**Mean**	**Variable**
		Emotional Intelligence
12.76	46.13	Self-awareness
12.90	39.00	Autonomy
9.73	33.83	Social awareness
15.91	45.36	Social skills
47.23	164.33	Total grade
		Personal productivity
15.57	52.80	Personal commitment
13.47	47.53	Abilities promotion
9.82	32.46	Increasing quality of work
37.53	132.80	Total grade

Table 2: results of the test for determining the normality of the main research variables

Normal distribution	p-value	Shapiro Wilk statistic	Variable
			Emotional Intelligence
yes	0.308	0.960	Self-awareness
yes	0.050	0.0930	Autonomy
yes	0.182	0.951	Social awareness
yes	0.168	0.950	Social skills
yes	0.090	0.940	Total grade
			Personal productivity
No	0.005	0.0892	Personal commitment
No	0.011	0.905	Abilities promotion
No	0.006	0.893	Increasing quality of work
No	0.005	0.891	Total grade
			Organizational productivity
Yes	0.057	0.932	
Yes	0.242	0.956	Employee training
Yes	0.581	0.972	Employee participation
No	0.004	0.885	Organization efficiency
Yes	0.109	0.943	Employee satisfaction
			Total grade

Table 3: results of Spearman`s correlation test between emotional intelligence and individual productivity

Individual productivity								emotional intelligence
Total grade		Increasing the quality of work		Abilities promotion		Personal commitment		
p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	
0.003	0.518	0.047	0.353	0.003	0.530	0.004	0.508	Self-awareness
0.001	0.566	0.002	0.542	0.000	0.615	0.012	0.454	Autonomy
0.000	0.659	0.002	0.540	0.000	0.619	0.000	0.648	Social awareness
0.001	0.574	0.002	0.541	0.002	0.553	0.003	0.521	Social skills
0.000	0.640	0.001	0.559	0.000	0.664	0.001	0.566	Total grade

Table 4: results of Spearman`s correlation test between emotional intelligence and organizational productivity

Total grade		Employee satisfaction		Organization efficiency		Employee participation		Employee training		emotional intelligence
p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	p-value	Correlation coefficient	
0.126	0.286	0.141	0.275	0.043	0.355	0.185	0.249	0.211	0.235	Self-awareness
0.285	0.202	0.333	0.183	0.238	0.222	0.233	0.224	0.452	0.143	Autonomy
0.893	0.026	0.816	0.044	0.682	0.078	0.969	-0.007	0.984	-0.004	Social awareness
0.725	0.067	0.828	0.041	0.541	0.116	0.685	0.077	0.930	0.017	Social skills
0.398	0.160	0.437	0.147	0.261	0.212	0.420	0.153	0.572	0.107	Total grade

Table 5: results of regression analysis to predict individual productivity and its dimensions through emotional intelligence

p-value	t	β	R^2	F	Variables
0.000	5.051	0.228	0.477	25.513	Personal commitment
0.000	5.176	0.199	0.489	26.790	Abilities promotion
0.000	5.011	0.143	0.473	25.113	Increasing quality of work
0.000	5.452	0.570	0.515	29.721	Total grade

Table 6: results of regression analysis to predict organizational productivity and its dimensions through emotional intelligence

p-value	t	β	R^2	F	Variables
0.572	0.0571	0.027	0.012	0.326	Employee training
0.420			0.023	0.671	Employee participation

0.261	0.0819	0.047	0.045	1.315	Organization efficiency
0.437	1.147	0.053	0.022	0.623	Employee satisfaction
0.398	0.0789	0.030	0.026	0.737	Total grade

Table 7: results of regression analysis to predict individual productivity dimensions through emotional intelligence dimensions

Variables	p-value	t	β	R^2	F	Variables	Predictors
0.077	1.846	0.646					Self-awareness
0.493	0.695	0.260	0.553	0.000	7.726	Personal commitment	Autonomy
0.560	0.591	0.267					Social awareness
0.594	-0.540	-0.151					Social skills
0.298	1.063	0.323					Self-awareness
0.142	1.518	0.492	0.550	0.000	7.632	Abilities promotion	Autonomy
0.443	0.779	0/306					Social awareness
0.413	-0.833	-0.202					Social skills
0.741	0.335	0.075					Self-awareness
0.057	1.257	0.543	0.534	0.001	7.157	Increasing quality of work	Autonomy
0.954	0.058	0.017					Social awareness
0.754	-0.317	-0.057					Social skills

Table 8: results of regression analysis to predictorganizationalproductivity dimensions through emotional intelligence dimensions

p-value	t	β	R^2	p-value	F	Variables	Predictors
0.061	1.966	0.702					Self-awareness
0.758	0.312	0.229	0.196	0.225	1.526	Employee training	Autonomy
0.113	-1.645	-0.759					Social awareness
0.710	-0.377	-0.107					Social skills
0.079	1.829	0.782					Self-awareness
0.403	0.850	0.388	0.244	0.123	2.015	Employee participation	Autonomy
0.050	-2.062	-1.139					Social awareness
0.777	-0.286	-0.098					Social skills
0.012	2.711	0.911					Self-awareness
0.967	-0.041	-0.015	0.288	0.066	2.526	Organization efficiency	Autonomy
0.048	-2.075	-0.901					Social awareness
0.977	0.029	0.008					Social skills
0.067	1.914	0.544					Self-awareness
0.648	0.462	0.140	0.203	0.206	1.596	Employee Satisfaction	Autonomy
0.160	-1.448	-0.532					Social awareness
0.576	-0.567	-0.128					Social skills

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RESEARCH ARTICLE

The Study of the Relationship between Tax Coefficients and Disclosure of Financial Reporting's of Accepted Corporation in Tehran's Stock Exchange

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ABSTRACT

The main role of fiscal reporting is the effective transferring of information to people outside an organization in the method valid and on time, which this case, in the shadow of revelation is done by quality of fiscal. One of the fiscal report users is the government to recognize information, tax. This research addressing the determine the relation between tax indexes and quality of disclosure of fiscal reporting of the accepted companies in Tehran's stock exchange. In this research, has been used form multivariate Regreeson's analysis according to grew up data to check out relation of tax coefficients with the amount of revelation of fiscal information in the fiscal lists during the years 2009-2014.

* disclosure = retrivation

Sample research contains 101 accepted companies in Tehran stock exchange in 6 years time efficiency. The founds show between tax coefficients and the amount of optional and mandatory disclosure of the fiscal reporting's there is a reverse meaningful relation. Means how tax coefficients be much, the amount of mandatory disclosure is less disclosure of fiscal information and

Key words: optional disclosure, mandatory disclosure, tax coefficients, fiscal reporting.

INTRODUCTION

Tax, goes one of the most important government resources, that since last centuries, with regard to the changing of the governments duties has had the increasing importance. Until the government duties was limited to the supply and conservation of geographic range, hence the cost of it, been wrapped in the low level but cement's time and existed changes in different economical fields, the government role and its duties was more colorful, the tax brought up as main resource of the governments income for covering the costs and fiscal tools to apply charge and guide. The governments really play important role in economical developments by creating tax laws to get tax and gathering and guide it to infrastructure investment, which is the complementary of the private sector activities. The tax, in a tool look is at government earnings service. But in an exact look, shows tax politics that id an effective and efficient in developing – of economical way and creating dynamic and generator for economic country. Tax politics effect on economic factors behaviors specially companies. As result, knowing these interactions can be useful.

Managers with knowing these interactions can gel optimal divisions in the course of tax information disclosure, profit division, investments and company debts pay, in attention to high explanations, the change in tax coefficients that is done by tax legislators in macro level, makes the change in companies politics and investors politics, the companies in attention to requirements of investors and shareholders and the company long term programs for doing investment and or other politics, get necessary decisions for the amount of fiscal information disclosure to play other politics.

Thus, this research to determine the relation between tax indexes and the quality of disclosure of fiscal reporting in Tehran's stock exchange, during the years 2009-2014, studies.

It is found that research founds can be a practical guidance for legal authorities company's managers and other users and a way decoder for future researches.

Importance and research necessary

The first step in development and expanding of knowledge, is theoretical and concepts and is ambiguity in expanding of knowledge of applying this concepts incorrectly that concepts with equal propositions may have different meanings for different people. Thus people to create or transfer should use exact and clear concepts and equal getting from concepts need to definition.

In the opinion of koos, the tax is fund which the board ruling get, because of national cooperative in order to provide the government offices costs and pay the public debts of tax payer.

Tax system: is the collection organizational laws and regulations and tax cultural which as other system contains data-process outcome.

Data in tax system contains the law and tax and non tax resources. The process is organizing management planning system and tax principles. Outcome, the purpose of processing tax data, is earning outcome. Which is get, development and expanding of social justice in the shadow of economical independence earning providing and tax distribution.

Therefore, the government according to approved regulations laws takes it, in the such way, the knowledge of the amount of the effect of tax on disclosure fiscal reporting will help the government to get necessary decisions when

reform in country tax laws in relation to natural and legal people's earning because will be effected on tax reporting disclosure differently.

Thus, in this research, in attend to the high importance of information and disclosure it by companies, the relation between tax coefficients and the quality a fiscal reporting disclosure between the accepted companies in Tehran's stock exchange.

Research history

Internal researches

In attention to taxes discussion, in this case, in Iran have been done many researches and been written many end letters that each of different aspects has been discussed about taxes. But about tax coefficient and its relation to fiscal lists disclosure in Iran, has not been any research.

Ahmadpour (2011), in an article as" the reasons of being top of taxable earning of contractor companies " states that companies are willing to be determinate their taxable earning in the top way.

Each of list, confirmated position of these companies, 5% tax obligation, article 10 the law of the direct taxes is deducted. In attention to this, that in the top recognize cases, usually tax belonging is less than deducted tax of positions list because of being low tax indexes and it makes creditor ring of contractor companies.

In the cases of which taxable earning of contractor companies is determined by investigating documents handed and evidences and offices, to the reason of some costs have not been documentary or not been had the accepted factors of tax affairs organization, so costs is being returned and being added to instrumental profit.

In the case which, taxable earning of contractor companies, is determined by investigating documents handed and evidences and offices, that class pay of taxable belonging is recognized, the subject of the article 10 the law of direct tax that their tax not been deducted became of the lack of knowledge by contractor companies. In this case, payers be obligated to pay noticed taxes with fines belonging. Tus, a tax that pay in this case is almost to top tax.

Hence, it suggests the tax coefficient increase to the extent that in the top conditions don't make the reasons of being creditor of contractor companies.

Ali Moqiminiya (2009), in the article as " the planning of appropriate way to determine and account tax coefficients to jobs" states: the playing of field researches to assist a way for tax coefficients form four jobs, contractor activities, consulting engineers, pharmacy and gold –selling is stator of this notice that difference between physical and human invest is in the too chichic, complex and necessary jobs. Because, now, tax ratings, is given on worker's earning that in attention to the un knowledge of the costs of investments shares or human and physical costs isn't so.

Ali ganzade(1999) in his own end letter as " tax ideal rating in Iran " by accounting of tax effective rating for tax on earning, on companies , an affairs, states tax ideal rating in Iran and the result of their studying is that tax on earning and affairs follow – offers curve but about tax on companies doesn't follow.

Foreign researches

Rownal cummings et al(2010) in their own article as " the effects of tax mentality to the tax obeyment" states that obligatory tries of tax organization can increase tax obeyment.

Henrick (2009) in his own article as" the problem of tax evasion and the importance of trust" analysed the concept of tax evasion in the different types of taxes and proceeded to changes in how paying as a common phenomena should investigate different taxes separately.

In the continue, he states, people who doesn't trust their own townsmen, in more probability are belived that they avoiding of it but un trust of politicians is even effectiveness specially for tax which redistributed and or pay fasically. Hence, it is important for politicians to be trust full to the others, in order to be able to collect taxes for reaming of welfare position.

Martti (2008) in his own article as" physiological and tax evasion of social controls" writes: in the current imagination of economic science in tax evasion, the election of tax payers in dependant on the objectivity subject in the tax system to avoided tax payers.

The purpose of this article is creation of a foundation and physiologic basis of attracting attention of all to human behavior as a process of following of rolls and regulations. According to the main hypothesis of tax payers is more adapted to the tax laws which can mainly being satisfied entirely are agree.

Research hypothesis

The first main hypothesis -tax coefficient are effective on amount of disclosure fiscal information from accepted companies in Tehran's stock exchange.

The first secondary hypothesis – tax coefficient are effective on amount of mandatory disclosure of fiscal information from accepted companies in Tehran's stock exchange.

The second secondary hypothesis – tax indexes are effective on amount of optional disclosure of fiscal information from accepted companies in Tehran's stock exchange.

The information gathering methods,

One of the main necessities of each study and research is the existence of trustful information and the speed of accessing easily to it. With that information, there is a time (for translator) when follow the study process and data analysis to investigate purposes and hypothesis of research. So, the researcher is able to get to the purposes with minimal cost and time.

Library ways is used in the all scientific researches but in some of them, in the part of research process is used of this method and in some of the research subject method, is library naturally and from the beginning to end is dependant on library research founds. In researches that not got library nature, in appearance, the researches have to use library methods in their own research, too. In these groups of researches such as descriptive, dependence, experimental and etc, the research should study the literature and problem history and research subject. As a result , should use library way.

In this research, the information gathering ways, related to research literature, and the related information to hypothesis, library way (contains available information in the weekly, monthly, yearly, the books, and different articles and outer and inter published).

The information gathering tool

The information related to research theory been gathered by outer and inter published and the data related to research variables from the accounted fiscal lists of the accepted companies in Tehran›s stock exchange has been originated by use of Nowin Rah. Avard software and referring to related sites to companies fiscal reporting such as vdis and codal sites.

The information analysis method,

Data analysis, is a several- ships process in during which the data that have been collected in different ways, is got abstracted, classified and finally processed to be provided relations introduction between data and scientific analysis in order to test hypothesis.

In this process, the data clear experimentally and conceptually and different statistics techniques are responsible for generalizing founds. The analysis processes in attention to the type of research, hypothering nature, the type of making theory, used tool for gathering information and … are different.

In this research, the relations between tax coefficient and fiscal reporting disclosure of the accepted companies in Tehran's stock exchange is specified. First, descriptive statistics presented and then analyzed variance dissimilarity and data relation by use of statistics and then hypothesis confirmed or rejected by analysis Regressions' model result of study and research process of Regression's model meaningful and variables index.

Research doing method

Research method is as a law to understand cause and effect relation, methodology is determine the limitations and criteria that should pay attention in scientific research process. Eeach research is a systematic activity in which a knowledge expanded and a position described and specified and finally a special problem or subject resolved, in attention to that research starts with a special goal or subject thus on basis of propounded subjects and the goal which research goes, they classified the researches and recognize type of it .

The present research

Is applicable because of that by use of models, methods, and available theories, is going to improve making decision in the companies which are research cases, in attention to the goal research.

In attention to that in this research, accidental sample will be used, in the stating results related to sample will be used of descriptive method and in the specifying results will be used of inductive – deductive method. Therefore the research method is inductive (analysis) deductive, deductively.

Because of that in data gathering, of companies applicable information basis on historical fiscal lists, are used, in the research plan, is the data Regression.

Research statistical sample

Research statistical sample, contains all accepted companies in Tehran's stock exchange. The research of election of these companies as statistical sample, has been, facility of access to their accounted fiscal lists and also access to the company's shares output in different dates.

In attention to 6 years research period (from beginning 2009 to the end of 2014), the companies have been selected that at the first of 1388 at minimum, have been got the membership of Tehran's stock exchange and also their fiscal period end to Esfand 29. Sample method has been systematical delete step by sleep.

In this research, the companies have been selected as sample which have the follow conditions, entirely:
They have been got the membership of Tehran's stock exchange since first 1388.
The companies fiscal period end to Esfand 29.
The noticed companies shares has not had an important trade pause (more than 6 months).
They delivered their own fiscal lists of fiscal end year.

Some accepted companies in stock contains banks, fiscal institutes, fiscal investments companies, fiscal intermediaries and holding companies which have variant reporting structure, are deleted of sample.

From whole accepted companies in Tehran's stock exchange to the end of 1393, considering, stated limitations, research statistics sample gets to 101, during 2009 till 2014.

Regrison's Model

1 main : $FIDIit = \alpha + \beta 1\ ITSeit + \beta 2\ FSizeit + \beta 3\ Levit + \beta 4\ INSit + \beta 4\ INSit + \varepsilon\ i,t$
1subsidiary: $MFIDIit = \alpha + \beta 1\ ITSeit + \beta 2\ FSizeit + \beta 3\ Levit + \beta 4\ INSit + \varepsilon\ i,t$
2 subsidiary: $DIFDIit = \alpha + \beta 1\ ITSeit + \beta 2\ FSizeit + \beta 3\ Levit + \beta 4\ INSit + \varepsilon\ i,t$

In attention to in this research, the information related 101 accepted companies in Tehran's stock exchange, has been gathered , and originated information contained dependant variables, is idepandant and controlling , whis research goal in investigating of effect of independent variables on depandunt variables. Therefore Regression's analysis is the most suitable method of research hypothesis test. For doing linear Regression, there are hypothesis. The minimum of being distance of linear relation between indepandant and depandant variable, being equal disturbance of rest and studied variables variance, the lack correlation and co-linear, is from hypothesis of the use of Regression's analysis.

In the present research, the measurement scale is the rational research variables, the relation between dependant and independent variables is linear. Regression's entire coefficient has been used for investigating linear relation between dependant and independent variables. Finally, Regression's analysis has been used for investigating effect ofindependant variable on dependent variable.

Regression model hypothesis

Focus on statistics results without attention to proposals of Regression model is not high authenticitied and we can use of for making decision. Therefore doing any interpretation of Regression results, we should investigate model hypothesis to confirmate results accuracy.

Investigating of dissimilarity In the first hypothesis, in attention to that statistics of this tests aren't in meaningful5% level, so variance dissimilarity hypothesis, been rejected and variance similarity of disorder sentences been accepted.

In other hypothesis in attention to that statistics these tests is meaningful in 5% level, so variance similarity hypothesis been rejected and dissimilarity variance of disorder sentences accepted.

This subject is originated form hypothesis contravention var $(u_i)=\delta^2 I$. such a problem in Regression will cause that OLS results wasn't be the most efficient. To solve this problem, the least gereralized squares method is used. In other hypothesis is so.

In all hypothesis, in attention to that outcome P-value from F Limer Test equals to zero, zero hypothesis rejected (P-value<005) and panel data methods accepted.

So, in attention to out-come P-value from Hosman test in the first subsidiary hypothesis- first main hypothesis, which is smaller than 0/05, zero hypothesis test, rejected and firm effects method, accepted. In other hypothesis, in attention to, out-come P-value form Hosman test which is bigger than 0/05, zero hypothesis Hosman test is comfirmed and accidental effects method accepted.

Hypothesis Test

In Regression model, in attention to P-value to reject or confirm of zero hypothesis , is decided. If P-value be less than 0/05 meaningful level, the zero hypothesis will reject , if not zero hypothesis accept.

The first main hypothesis Test

Tax coefficients to the amount of fiscal information disclosure from accepted companies are effective on Tehran's stock exchange.

$FIDLit= \alpha+\beta^1 ITSeit +\beta^2 FSizeit +\beta^3 le\ vit+ \beta^4 INSit+\varepsilon i,t$

This hypothesis is investigated basis on following hypothesis;

Firs secondary hypothesis Test

Tax coefficients are effective on amount of fiscal information mandatory disclosure by the accepted companies Tehran's stock exchange.

$FIDL_{it}= \alpha+\beta^1 LTSeit +\beta^2 FSizeit +\beta^3 Le\ v_{it}+ \beta^4 INSit+ \beta^4 INSit +\varepsilon i,t$

In this model

$MFIDI_{it}$= fiscal documention mandatory disclosure.
$FSIZE_{i,t}$= company size (natural logarithm of properties) company it
Lev_{it} = the debt ratio (the ratio of debts entirely to properties).
INS_{it}=inborn ownership
$ITSe_{it}$= tax coefficients
A= contirm beta

$\varepsilon_{i,t}$= error coefficient which is independent for each period, has a normal distribution , is indepandant of Regression factors.

inattention to, the outcomes from Regression model test as above table, is observed that P-value amount, connected to prob(F-statistic) states being meaningful whole Regression, equals to and shows that the model is at meaningful trust 95% level. The regulated confirmation coefficient, R^2 equals:0349163 and states that almost 35% of dependant variable changes is specifiable by model independent variables and Watson statistic is 2. 436, which this amount is between 1/5-2/5 which shows the lack of self correlation between variables.

So that is seen in table 5, $ITSe_{it}$ variable coefficient equals to -1,4438 and its meaningful number(prob) is .,....

In attention , statistics and p-value this variable, the results is sign of being meaningful of this coefficient in 5% error level. These founds show that tax coefficient are effective on amount of fiscal information arbitrary disclosure by the accepted companies in Tehran·s stock exchange.

The second, secondary hypothesis test

Tax coefficients are effective on amount of fiscal information optional disclosure by the accepted companies in Tehran·s stock exchange.

$DIFDL_{it}= \alpha+\beta^1 LTSeit +\beta^2 FSizeit +\beta^3 Le\ vit+ \beta^4 INSit +\varepsilon i,t$
$DIFDI_{it}$= fiscal documention optional disclosure.
$FSIZE_{i,t}$= company size (natural logarithm of properties) i=company t=year
Lev_{it} = debt ratio (the ratio of debts adding to properties).
INS_{it}=inborn ownership
$ITSe_{it}$= tax coefficients
α= confirm βeta
$\varepsilon_{i,t}$= error coefficient which is independent for each period, has a normal distribution , is independant of Regression factors.

attention to Regression model test as noticed table, it is observed that P-value amount, related to prob (F- statistic) which states whole Regression is meaningful , it equals to 0,000 and is from which that model at 95% trust level is meaningful. Regulated determination coefficient R^2 equals to 0,35017 and it states this case that almost 35% of dependant variable changes is specifiable by model indepentant variables, that is representative of high descriptive power of this Regression. And Watson statistics is 2, 03242, which this amount is between 1/5-2/5 that is the sign of the lack of own correlation between variables.

So as that is observed in 6 table, $ITSe_{it}$ variable coefficient equals to -1/6134 and its meaningful number (prob) is , 0,000. In attention to t statistics and p-value of this variable , the results is representative of being meaningfulness of this coefficient at 5% error level. These founds show that tax coefficient are effective on amount of fiscal information optional disclosure by accepted companies in Tehran·s stock exchange.

The results from hypothesis

Make a result about the first main hypothesis

The first main hypothesis of this research follows

Tax coefficients are effective on the amount of fiscal information arbitrary by accepted companies in Tehran›s stock exchange.

This hypothesis is investigated as hypothesis follows

Make a result about the first main hypothesis:
Tax coefficients are effective on the amount of fiscal information arbitrary disclosure by accepted companies in Tehran›s stock exchange.

So as that is observed in table 5, variable coefficient $ITSe_{it}$ equals to -1/6134 and its meaningful number (prob) is , 0,000. In attention to t statistics and p-value of this variable, the results are representative of being meaningful of this coefficient at 5% error level. These founds show that tax coefficients are effective on the amount of fiscal information optional disclosure by the accepted companies in Tehran›s stock exchange. This result is adapted to Rownald Gamings, et al›s founds (2010), Malon Freese and Johns(2005), chalmers and good ferry (2004), zee and yang and chaw (2004) and chang and kertohy (2006).

The Analysis

In the real world, a phenomenon may be effected by many variants and factors. Some of these factors are recognized for researcher and he can difine, the effect of these factor on the phenomenon, to some extent.

However, there are other factors which researcher is not know of their creating or that he doesn't have their effect definition on dependant variable.

In attention on the main first hypothesis,(tax coefficients are effective on the amount of fiscal information arbitrary disclosure by accepted companies in Tehran›s stock exchange) we get to result that there is meaningful and adverse relation between arbitrary disclosure and tax coeffients. And also, in attention to a result which taken form secondary second hypothesis, we get to result that there is meaningful first hypothesis causes of being meaningful of relation between tax coefficients and the amount fiscal information arbitrary disclosure by accepted companies in Tehran›s stock exchange.

In attention to the results of other hypothesis, it is necessary that determiner of standards and supervisor institutes on companies activities, have had more attention to reporting of this kind of companies. And statistical analysis that done on connected information to the suggested prices of share trade in selected samples, we can make a result as follows:

According to the theoretical basis when in the invest market people take information optional disclosure in a correct method, we will observe the existence of information symmetry. And statistical analysis which done on connected information on suggested prices of share trading in selected sample, we can get to result as follows:

According to the theoretical basis when in the ivest market people don't take information optional disclosure in a correct method, and we will observe distance in to the suggested prices of shares trading. According to the results form information analysis, the existence of informational unsymmetry has been observed in Tehran›s stock exchange. According to theoritical bases when there are information distribution in the invest market, the traders in those markets deal on basis of their own final information.

Applicable suggestions from research outcomes

In attention to research results, the suggestions presente as follows

Determination strategies by controlling people to determine tax coefficients, in attention to, research results for economical growing of the country, the government can generally make a mechanism by decreasing of tax coefficient in the accepted companies in Tehran،s stock exchange which to determine real taxable earn and tax investigating, also tax payer makes willing to investigate documentions and offices.

Using of its results in program planning and determination strategy of the country،s orgeanizetion of the tax affairs , has been used to improve recognition methods and getting tax earnings.In attention to, the results of other hypothesis, that's necessary that standards determiner, and controlling institutes on companies activities have had more attention on this type of companies.

In attention of the role of trust and clear and on time information in make decision and decreasing of informational unsymmetry and also helping to sharing of the public in investment object in stock exchange, there are some suggestion as follows:

On time disclosure of information that is related to shares directly or indirectly and if so, it is effective on making dicison for trading shares. Gathering of accounting standards, and new accounting in order to regulate amount and quality of fiscal lists disclosure of variant companies, their necessity to enform information to the public, with its disclosure to the stock exchange after doing an applicable research, if the research isformed of a systematic and researchable ways, the research can state opinions about research founds and results and also ways and suggestions in order to improve and expand the next researches. In this cause, accorded to research results and for the next researches, the suggestions is presented.

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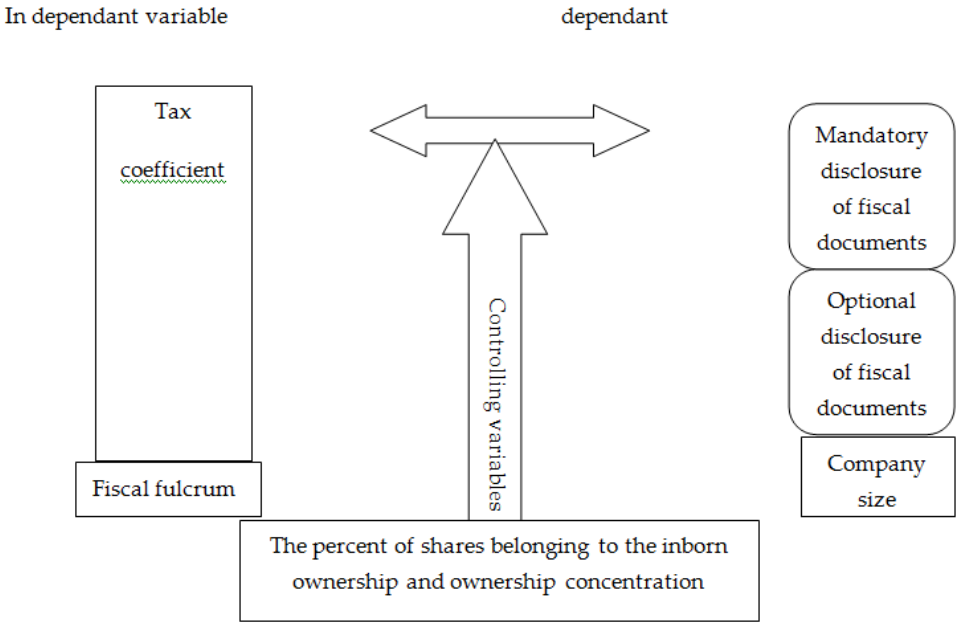

Fig 1. Research analytic model

Table 1. Screen method to homogenize statistical sample

Companies numbers	description
Company319	Companies numbers presented in stock 2009-2014
Company(47)	Companies their fiscal year ending isn't 12/29 and companies and changing in fiscal year.
Company (69)	Companies had an important pause (more 6 months)
Company (34)	Holding, fiscal intermediary, insurance, banks,…
Company (68)	Companies is their fiscal information uncompleted
Company 101	Companies number, their data collected(fiscal sample).
In the result of conditions apply and noticed limitations, 101 companies has been selected as statistical sample and all of them as an example, (systematically delete). The research periodic sequence 6 years. So, the volume of final sample is 606 years. Company(6*101).	

Specified model of research and measure method of research variables.

Table 2-measure method of research applicable variables

how accounting of research variables ratio of disclosure information to the information which have to disclosure	Sign	Variable
	MFIDit	mandatory disclosure of fiscal documents
Ratio of disclosure information to information which have to disclosure	DI FIDit	Optional disclosure of fiscal documents
each year, determined by fiscal coefficient determination commission for affairs owners(contains legal and natural person)according to type activity and in attention to bargains and economic conditions.	ITSeit	Tax coefficient
Natural logarithm of properties	F sizeit	company size
Ratio of whole debts to shareholders salary	Levit	Fiscal fulcrum
The precent of shares belonging to the inborn ownership and ownership concentration at the end of fiscal year.	INS	Inborn ownership

Analysis of nature and characters of research variables

Table 3- the results of watts dissimilarity

Result	P-VALE	probability	The amount of statistic	description	hypothesis
Variance similarity	P≥0.05	0.0567	1.10483	F-statistic	main1
		0.0662	2.1393	Obs*R-squared	
variance dissimilarity	P <0.05	0.0000	3.1515	F-statistic	Subsidiary1
		0.0000	4.3779	Obs*R-squared	
variance dissimilarity	P <0.05	0.0000	2.2894	F-statistic	Subsidiary2
		0.0000	4.6781	Obs*R-squared	

Table 4- Flimer and Hasman Tests;

Result	p-value	probability	Hasman	Result	p-value	probability	Flimer	hypothesis
effects method	P≥0.05	0.0618	11.30725	panel data	P<0.05	0.000	4.06441	main1
firm effects method	P<0.05	0.0000	11.80134	panel data	P<0.05	0.000	4.93312	Subsidiary1
effects method	P≥0.05	0.0597	12.43765	panel data	P<0.05	0.000	3.71834	Subsidiary2

Table 5- the results of data analysis to test firs secondary hypothesis

p-value	t	Standard Deviation	confirmation	variable
0.0000	-3.8163	0.39811	-1.593	C
.0.000	-4.9372	0.29243	-1.4438	$ITSe_{it}$
.0718	-1.7346	1.46282	-2.5374	$FSize_{it}$
0.0691	-0.9978	1.91775	-1.91353	$Lev_{i.t}$
0.1827	2.2384	0.32975	0.73812	INS_{it}
Adjusted R-squared		2.0436	Watson statistic	
.349163		0.000	Prob(F-statistic)	

Table 6- the results of data analysis to test secound secondary hypothesis

p-value	t	Standard Deviation	confirmation	variable
0.0000	-3.4315	0.5037	-1.7268	C
0.0000	-4.3462	0.3712	-1.6134	$ITSe_{it}$
0.0573	-1.6137	1.3807	-2.2281	$FSize_{it}$
0.0621	1.5548	0.9415	1.4638	$Lev_{i.t}$
0.2384	0.9428	0.0419	0.0395	INS_{it}
Adjusted R-squared		2.03842	Watson statistic	
0.35017		0.000	Prob(F-statistic)	

Table 7-Summary Results of the study

match to other researches	contrary with other researches	confirm or reject of the hypothesis	the researches hypotheses
Rownald Gamings and others(2010) Malon Ferris johns(2005) Chalmerz and good ferry(2004) Zee and young and chaw(2004) and chang and kreteny(2006)	-	confirm	The first secondary hypothesis: between tax coefficients and the amount of fiscal information arbitrary disclosure by accepted companies in Tehran,s stock exchange, there is a meaningful relation.
Rownald Gamings and others(2010) Malon Ferris johns(2005) Chalmerz and good ferry(2004) Zee and young and chaw(2004) and chang and kreteny(2006)	-	confirm	Second secondary hypothesis : There is a meaningful relation between tax coefficients and the amount of fiscal information optional disclosure in Tehran's stock exchange.

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RESEARCH ARTICLE

Economic Development of Japan and Iran in Recent Centuries

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ABSTRACT

This paper examines the economic development in two countries of Iran and Japan in recent centuries. In this article to be tried; modernization actions of Iran and Japan for economic development with guidance and reforms of above by elites in other words by powerful forces is examined. Two countries of Iran and Japan with regard to the economic superiority and development of West tried to find a economic balance with the West. the modernization actions of Japan began with Meiji revolution. Emperor with the Japan powerful forces by territorial and financial reforms provided the necessary resources to the development of industries and with the formation of heavy and light industries had a major role in the economic development of Japan. In Iran, modernization efforts was formed in the Qajar and Pahlavi period by Abbas Mirza, Amir Kabir, Sepahsalar, Constitutional Revolution, Reza Shah and Mohammad Reza Shah but the result of efforts was different despite somewhat similar situation. Japan succeeded in economic development but Iran could not reach to economic development like Japan. In Japan there was consensus and harmony between powerful forces with a unit goal to achieve economic development, but in Iran there was not such consensus and unanimity to reach to economic development in both Gajar and Pahlavi period because personal interests rather than national interests.

The research method of article is historical and descriptive. In this article be tried according to the theory of habermas, the process of economic modernization is evaluated in two countries of Iran and Japan to historical and descriptive method to reach economic development.

Key words: Modernization, Development, Elite, Iran, Japan.

INTRODUCTION

Development, in other words, progress in different fields specially in economic field, needs to a good condition to reach that. Economic development needs the economic stability and security to create the good condition for business and production. Until such appropriate condition is not created, development is faced with problem. One of the factors that have a fundamental role in the stability, security and economic development can be internal cohesion in other words consensus and solidarity of society to achieve development. Internal coherence between powerful forces is the appropriate field to overcome underdevelopment. Such consensus creates favorable conditions for economic progress and activity. Iran and Japan as two Asian countries in recent centuries with respect to economic inequality with West follow a series of steps to achieve economic development. The goal of these efforts was the gain of progress to deal with the west superiority. Although such measures began in recent centuries in two country somewhat at the same time. But the result of measures was different in the two countries. Modernization actions in Iran was created by Abbas Mirza , Amir Kabir, Sebahsalar and Constitutional Revolution in Qajar period and by Reza Shah, Mohammad Reza Shah in Pahlavi period. Before such modernization measures had formed Safaviye centralized state in Iran with Shiite official religion. The cultural conditions had provided a good opportunity for economic security and stability. Therefore, the Shiite religious was a integrative factor in the course. But such conditions rarely occurred with the fall of the Safaviye state. Until Qajar government formed in Iran the late eighteenth century. In Qajar period Iran was faced the superiority of Western countries. To overcome such superiority, Qajar state pursued corrective programs. But failed in achieving to economic development. Japan also began modernization actions with Meiji Revolution. Before the Meiji Revolution, Japan was isolated in Tokugawa period about two centuries. In the two centuries Japan achieved national unity against foreigners. After the Meiji revolution, Emperor and powerful forces on a appropriate cultural context started the process of economic development with the modernization actions and ultimately reached economic development in the Japan. in this article be tried to study the process of economic development and modernization of Iran in Qajar and Pahlavi period and Japan in meiji period in economic , industrial ,financial and land fields.

Research theoretical framework

The internal coherence and consensus among influential forces in society is an essential basis for the development. When consensus is created that is created common understanding and interaction between different groups. So that the powerful forces reach a common understanding with respect to the different views in an interaction. integration means unity with respect to the plurality of views. Unity in diversity needs a dialogue on a common framework . common symbols, values and beliefs can have effective role in the dialogue and mutual understanding through intercultural interaction and communication . In interaction, individuals with regard to their beliefs will adhere toward common beliefs at the macro and national level. in fact communication arena depends on a common understanding with the different attitudes to achieve the common language and belief by mutual interactions. This attitude is what Habermas believes mentally a common understanding in the public arena of Interactions. Habermas considers life-world as communicative act, agreement and consensus arena. in the life-world, dialogue is based on debate and consensus. In this arena, compulsion have not basic role in the agreement. The basis of arena is dialogue and understanding between different interests within a democratic framework. In fact, in Habermas's communicative action, participants expect to reach a consensus through communication and dialogue. According to Habermas, the extension and independence of the life-world and the development of the field of cultural rationality requires the ability of understanding and communication. Such a situation could lead to rationalization of the life-world.

In such circumstances, individuals and groups debate in a suitable condition to reach consensus and shared belief and choose the most appropriate method to achieve their goals.

Mohammad Hasane Jabbari and Mostafa Elmimoghaddam

National cohesion on the formation of national centralization government in Japan and Iran

Iran and Japan are two Asian countries that followed modernize and reforms in the 19th century because of its weakness against Western countries. The elites of both countries emphasized modernization and reforms with guidance from above. Despite the similarities between the two countries in the background of modernization and reforms by elites in two countries, both countries have passed somewhat different historical path of modernization and reforms. In both countries before the Meiji government of Japan and the Qajar government in Iran, powerful governments had been elapsed like the Safavid Empire in Iran more than two centuries and the Tokugawa government in Japan about two and a half centuries. Tokugawa government was passed in isolation from the outside world, but Safaviye government especially during the Shah Abbas period spent by interacting with the outside world.

Despite the trade positive balance of Safaviyeh government with the West, Safaviyeh government during the last Safavid king was weakened and country was faced with scattered distribution of power and insecurity until the rise of the Qajar government. The first king qajar, Agha Mohammad Khan Qajar, suppressed internal riots and some other powers and then to neutralize internal riots and external aggressions, Qajar government could create a strong and focused government. After Agha Mohammad Khan death, border clashes were created between Iranian and Russian forces. The Qajar government was faced with the military and economic superiority of the West. To achieve the superiority of the West, qajar government followed a set of modernization actions. in japan also before Meiji revolution, Daimyo(Great Feudals)dominated areas of the country. Daimyo in this regions enjoyed traditionally bureaucracy and military forces. In the 17th century AD Some Daimyo sought to expand their territory to occupy the territory of the other feudals. Daimyo "Ayaso Tokugawa" prevailed over other feudals and created central government in the country. Tokugawa government to the creation of national unity and Centralization applied hostage system. According to any Daimyo was some time in the capital and some time in its land and was traveling between the city and its land. The Tokugawa government action was led to unification and centralization of the country. Therefore, Tokugawa government could control the country with peace and tranquility for almost two and a half centuries of isolation from the outside world. Although Japan isolation from the outside world created unity in the country but this situation was led to a lack of Tokugawa government knowledge of progress in the West. So that as soon as the entry of American troops to the port of Japan, the Tokugawa government was faced with a serious challenge in dealing with the fleets and modern weapons. This situation increased the Opposition of the tribes against the Shogun. Shogun due to increased domestic opposition accepted the superior power of Emperor and power was restored to the Emperor.The Meiji government began modernization actions for reaching to west progresses . Therefore, both the government of iran and japan follow modernization against west progresses. But Japan toward Iran was succeed in the field of modernization and reform. Here the question arises: Why Japan was more successful than Iran? One of the most important reasons in this field was consensus among elites in Japan. Meiji modernization was shaped with consensus between traditional and new powerful forces and provided the path of modernization and reforms. So that these groups participated in the power restoration of the Emperor. Emperor victory was owe Chosho , Satosuma, Hizen and Thoosa tribes. These tribes restored the emperor power with together coalition and merchants and nobles efforts and formed a centralized government and removed Feudalist system. The four tribes of west Japan ; Thoosa, Hizen, Chosho and Satsuma, to create a centralized government after restoring power to the emperor agreed that would give their property and military forces to the Emperor to create a centralized government. The tribes in the time of transferring property to the emperor stated: in the realm of the Emperor any spiritual belongs to the Emperor... nothings is not that is not subject to the Emperor. Although Emperor power was decreased in the past, and was created a military class and was divided the land between them. But now that the emperor was restored. How can take land that belongs to the emperor and governs on the people that are servants of Him? Therefore, we give all their feudal property... to create uniform rule throughout the country.

Meiji oligarchy disturbed the old structure of Tokugawa government. so that the Samurai privileges disappeared. In addition to the abolition of the Han and the establishment of Governor in 1871 and the creation of a pyramid structure to the lowest point of the center of the country, centralization was formed in the country. At oligarchic top were a few number of Chou Shu, Satsuma, Hizen and tosa tribes with totalitarian forces. They managed ministries with Samurai employees. The lower level was provinces, cities and villages.

Compared with the coordination and integration of Japan's elites in the field of modernization and reforms, powerful Iran forces and elites had not coherence and coordination for reforms. so that no coalition was formed between traditional and modern Iran forces like Japan. Modern and reform elites faced with serious opposition. So that the exception of the Pahlavi regime that formed centralized government with the suppression of internal strong forces was not resolved. Here the question happens what is the main obstacles to reform and modernization in Iran compared to Japan? So that was mentioned, one of the main obstacles in this regard was the lack of consensus and solidarity between powerful forces in Iran. So that the conflict was continued between the traditional powerful forces like landowners, nobles, princes, religious forces, monarch and reformist elites. If in Japan for the formation of the central government, tribes and other groups gave their property, assets, and troops to emperor to form centralized government, The traditional forces in Iran was not willing to give concessions in favor of the modernization and reform, even Landowners were not willing to grant financial assistance to the central government. If in Japan for their national interests, tribes gave their assets to central government, in Iran personal interests was effective to action. So that when the sepahsalar was going to centralization, the wave of opposition increased toward sepahsalar. The autocratic rulers of states opposed with centralization and reduction of their power. Because the Assembly of Options of sepahsalar considered peasant rights and would decreased the power of the rulers. Some autocratic rulers like Ghouchan governor resisted against options that sepahsalar deposed him. Some governors announced to the king their opposition to the sepahsalar. the opposition of the rulers was of the serious obstacles in the path of sepahsalar centralization. the question that arises here is: If the Iranian tribes such as Japan gave their assets and property in the hands of the king, the central government was formed and provided the path of modernization in Iran? As it was mentioned before, the emperor which was the symbol of national union goes back to the long history of Japan and was sacred to the people as if they didn't see the emperor. But in Iran Sultan didn't have such a position as sacred as the emperor in Japan. Although in Safavid the king was kind of sacred, it was not so in Ghajar. In addition the emperor in Japan had bestowed all the authority to the renovating elite and some when supervised them. But in Iran the renovating elite didn't have such an authority and the king acted upon the decision of powerful traditional forces and had lost his own independence. On the other hand the traditional forces considering their own benefits didn't like to have a solidarity and consensus with the renovating and reformer elite. Therefore this lack of solidarity and consensus in Ghajar were serious obstacles to forming a focused government and making suitable ground for renovation and reformation. Unlike the lack of consensus among the elite in Ghajar, Reza Shah overwhelmed the opponents unilaterally and could make a focused and absolute government in the country. It should be mentioned that before taking the power by Reza Shah, riots spread out all over the country. In 1919 AD England was up to support Iran and signed a contract with Vosugh Aldola. This action led to many oppositions and resignation of Vosugh Aldola. After him Moshir Aldola took his position and in his period the country faced many serious tensions. Rebels and brigands revolt around the country. Some of states and tribes didn't pay the taxes and didn't obey the central government and on the other hand the financial situation of the country was very unstable. The riots spread out in Gilan, Azerbaijan, Kordistan, Khorasan, southern and other parts of the country which all were overwhelmed by Reza Khan's coup and taking the control of war ministry and making the central government.

Unlike Ghajar government in which traditional sources had power and dominance in the court, Reza Shah overwhelmed the opponents and some of traditional forces who were opponent to the focused and absolute government. He could destroy all the serious obstacles to the renovations and reformations unilaterally and without the solidarity and consensus of the elite, he actually could make a way for the renovation and reformation in the country. Therefore it could be said that in Japan the elite make a way toward renovation and reformation but in Iran there was not such a consensus among the elite in Ghajar and on the other hand without such a solidarity and

consensus among powerful internal forces the government in Pahlavi was formed unilaterally and by overwhelming the opponents.

Territorial and financial reformations of Japan and Iran

In some European and non-European countries agriculture had been the background for industrial investment and supply financial sources of the government. Japan as a non-European country also made agriculture the basis of industrial renovation and it could supply the government financial sources in difficult conditions. Aligarshi Miji didn't borrow money from European countries because they had a colonial vision of them. They believed that borrowing from European countries not only would lead to their entrance and dominance in Japan but also make their economic independence unstable and doubtful. They made agriculture the basis of supplying financial sources of the government. Miji government could supply preliminary finance for developing the industry by putting up territorial taxes on territoriews and other internal financial actions. As if in the end of 19th AD century (the second half of 13th century) about 80% of the government financial income was supplied from taxes of territories. Therefore in Japan the agricultural revolution was before the industrial revolution. Peasants who had territories had to pay a yearly permanent quantity of taxes based on the price of their territory. This tax system was the main part of government income which mostly was used for strategic industries. The government made the village as the back of the city. In addition to it wealth of owners who had desire for reservation was an important factor in forming massive assets for industrial and economical plans. The development of agricultural methods and many unemployed labors in villages also supplied human sources for occupation in industries.

In comparison with Japan, in Iran agricultural renovation was seriously started in Amir Kabir period in recent centuries. Amir Kabir believed that developing agriculture needs social security and preserving peasants rights. He could get the social security by overwhelming the riots and on the other hand the amount of agricultural productions were increased and new products were implanted by destroying Siversat old tradition and supporting the peasants. Amir Kabir in addition developed agriculture by building huge dams in different parts of the country and rebuilding of aqueducts and also producing new products. His other action was taking taxes from owners who didn't pay their taxes. This action was opposed by those who may concern and had benefits. Seif Aldola prince was among those supported by British legation, he went to London and was its pensioner. When he came back in Mohammad Shah period, "Petrakh Tappe" was given to him and his wife also was paid 200 tomans yearly. Mirza Taghi Khan cut this payment of the princess and asked for the product taxes of these several years. As Seif Aldola didn't pay it his land was taken back. The British minister opposed to this action but Amir didn't answer him. Even though land owners and governors and some of courts were opposed to Amir Kabirs's reformations and were up to plot against him. From among them we can name Soleiman Khan the brother of Mahd Olia, Shir Khan Ein Almalek the nephew of Mahd Olia and so on.

Since Amir Kabir period to Reza Shah period there was not any serious agricultural reformations. Although the actions of Reza Shah were toward his own benefits. After gaining the power he took many territories of Khans and the feudal by force and assigned them to himself or his officers and relation and therefore he became one of the biggest land owners. He passed some laws substituting old system of ownership by a new one. Before that the law of estate and title deed registration was passed in 1923 AD (1302). Those laws passed in 1928 AD and 1929 AD (1307 and 1308) officially strengthened the owner's right in personal ownership and water resources, and the taken or bought or state territories were made legal and juridical. In addition in new law of 1931 AD the rights of territory owners were mentioned and taking taxes system was created (p.70). Although Reza Shah's territorial reformations in estate and deeds registration and legalization of territories were positive, his actions in taking forcibly the estates if Khans and the feudal and repressing them caused fear among other owners and prevented them from investing more in estates. It should be mentioned that taking estates and territories and becoming a big land owner was very prestigious for him and he believed that in this way he could supply the government budget. But actually because of

oil resources, agriculture was almost the main supplier of industrial reforms. While in Japan agriculture was supplier of government financial sources in industrial and other investments.

Territorial reformations were started widely in Mohammad Reza Shah period. The US role in territorial reformations of Iran was very crucial. Based on bitter experience of Asian southeast and Latin America events and peasants redeemer role in wars of 1950s AD such as Vietnam, China, Algeria, Cuba wars in which territory and peasant were their main factors, the western countries and especially the US concluded that by performing up to down territorial reformations anti alien and anti autarchy movements could be prevented and get the stability of ready countries for reformations. Western allies of Mohammad Reza Shah were concern about old agricultural structure and traditional social relations in villages increasing country power against communism and the possibility of outbreak a political revolution.

In 1960s AD because of Kennedy's government pressure, the revival of national deploy and also the hypothesis that territorial reformations would destroy land owner's power in benefit of government power and peasants would remain loyal to themselves, developed the program to the overall territorial reformations. By performing territorial reformations unilaterally and without consultation of land owners, the shared peasant agricultural system and the dominance of land owners were destroyed. Irregular migration of villagers to the cities was another backwash of territorial reformations. As if in 1930s AD 68/6% of population lived in villages and 31/4% in cities. In 1976 AD more that 47% of population were inhibited in cities. The number of big cities increased. In 1966 AD Tehran has the population of 500.000. in 1976 AD four big cities had such a population. In addition in 1645 AD cities with population more than 100.000 had 21% of the population. While in 1976 AD it reached to 29%.

Therefore it becomes clear that Mohammad Reza Shah unlike Miji government which made agriculture its main income supplier and industrial investment, made it peripheral because of huge oil benefits. Mohammad Reza's objective from territorial reformations was more political. As it was mentioned before his political objective in gaining peasants support was under the Kennedy's and western pressure for territorial reformations.

In addition to agriculture Miji government needed immediate budget for forming offices and performing laws and sending armies to different parts. In 1868 AD the government for supplying the budget asked for merchants help and forcibly borrowed a loan of three million Rios from them. This amount formed the government budget and "Mitsui Gumi" company was assigned for directing government treasury bargains. In 1868 AD the government spread 48.973.973 Rio bills and it was going to be gathered again after 13 years. Although the government was up to use this amount for industry, it was used for paying debts. Because of the government financial problems Mitsui Gumi paid a gratuitous bounty loan of one thousand and other investors paid such bounties to the government. to have a better currency progress the government established a mint in Osaca in 1871 AD and "Yen" became its currency and metal currencies were minted. Mitsui Gumi was assigned to money, gold and silver exchanges and gathering old currencies and transforming them into gold and silver bars. After a short period it established a huge plant for printing bill. In 1879 the government also imposed a new law for banks which led to establishment of national bank. In 1879 AD about 150 banks were established. In 1882 AD "Matsuka Tamasayushi" the financial minister of that time established the bank of Japan. This bank was established for government financial affairs and in 1896 AD the loan bank was established and in 1900 AD the industrial bank was established for industrial affairs.

In comparison with Japan that Aligarshi Miji supplied government financial sources through getting loans and establishing banks in the country in addition to agriculture; Amir Kabir tried to battle with financial corruption. When he became the first minister he faced the lack of budget. This lack of budget was because of Mirza Aghasi's bestowments to a punch of useless people. In his period Aghasi had given money to different people that increased the govern debts. Amir Kabir was up to survey these money. He considered two ways for solving this problem; to validate or invalidate all that money. The first way was not applicable because of government financial problems and

the second way would make the government broke and invalidate. Amir chose a better way. The real government debys were gradually paid and those which were unnecessary bestowments and bounties and Aghasi's prodigality were completely omitted the government was not supposed to pay them. In addition Amir for balancing cost and income considered a committee to adjust the country budget. This committee appointed the lack of income about one million Tomans. For solving this problem Amir decreased the salary of those who were paid from government, from Shah to servants.

Amir Kabir stopped illegal bureaucracy taxes. Based on tax system the employees must not take the taxes and illegal money from people. He made a regular tax system which has important role in increasing government incomes and decreasing the role of clergymen in gathering the taxes. He also prevented them who were paid from budget without any right. For example the royal guard was actually exists in Fath Ali Shah period and it was formed of 600 persons but now they were up to 4000 persons were considered as royal guard just on paper. While the actual number was less than 300. Amir adjusted all of them and stopped budget prodigality.

Amir's battle with financial corruption and bribery had an important role in increasing government financial incomes. In Japan the merchants supplied the government financial sources in addition to agriculture but in Iran not only commercial companies were not established as Japan but also if it was so the companies would not cooperate. Because in Iran personal benefits were prior to national benefits. If Japanese companies helped the government financially believed it was for national elevation and had a definite unique objective but in Iran the objective was not national elevation and personal benefits were prior to national ones. Both Amir Kabir aand Miji governments didn't accept western loans because of their colonial vision toward western countries. In Jpan financial sources problem was solved through merchants save agriculture but in Iran Amir Kabir supplied the government financial sources through battling with financial corruption in addition to agricultural taxes which was opposed by many groups and powerful forces and led to Amir Kabir's deposition and therefore his long term ideals for industrial renovation and independence were not fulfilled.

Like Amir Kabir, the financial reformations of Sepahsalar were battling with bribery and preventing from getting court gifts. He believed save common taxes and definite claims which are up to the people, the governors shouldn't take anything else under any title.

His another action was establishment of "state bank" which "Merton" plan was passed with some modifications. The government also brought Austrian "Baron Dostein'' with a group to iran to make new financial systems. Sepahsalar's objective was to use Stein to coordinate internal taxes and custom traditions with Europe but when the financial conselor's mission ended he didn't succeed. Even though money and coinage reformation had a very considerable progress in Sepahsalar's period. This action fulfilled by the help of a mint master from Austria called "Pashan". and silver gheran and one toman gold coin were common in Iran. The price of one gheran equated one frank and one gold toman equated ten franks. Therefore a new money spread in the country.

Unlike Miji government using merchants financial helps for supplying government financial sources and industrial investments, Sepahsalar's government didib't have such a powerfull financial support. While like Amir Kabir his financial reformations could supply the government financial sources and make a way for industrial investments. But battling with bribery and financial corruption faced them with the opposition of those who enriched through bribery and financial corruption. It should be mentioned that solidarity and consensus of Japan's higher class especially land owners, merchants, emperor and so on led to supplying government financial sources and industrial investments but in Ghaar period there was not such a solidarity and consensus. In addition if the Japanese elites could establish new banks to progress currency, in Iran the establishment of national bank faced problems because there was no reliance among powerful forced themselves and also government, and if some banks were established with high financial support by Russia and England they were toward their benefits.

Although in Mashrouta period some financial actions were performed, they did not succeed. As if in second Majlis, Shushtar was invited to Iran for financial reformations and he could adjust the government financial sources through taking taxes but faced Russian opposition. Because some of owners and merchants were supported by Russia and Russia could not tolerate taking taxes from them and asked for Shushtar's deposition from Iran's financial affairs. Or in the first Majlis period when getting loan from British loyal bank or Russian loan bank was discussed, one of the majlis representatives called Moein Al Tojjar represent a plan based on establishing national bank based on the merchants and people investments but he didn't succeed and loyal and loan banks continued to abuse Iran's treasures by giving loans with high interests and bringing the government their indebted. As if one of government actions was repaying its debts to Russian and British banks. After forming Pahlavi government by Reza Shah, financial reformation were one of its important objectives. After his coup an American delegation under the supervision of Milspo entered Iran on September 1922 AD for financial reformation. In 1923-24 AD Milspo could balanced the budget and the government income got to about 5.768.173 and costs around 5.827.44 Lire. Commodity payments were stopped in 1923 AD. But lack of reliance of Sardarseoah to the aliens and his wish for freeing Iran from aliens presence and especially his severe anger for Milspo's delay in designation of army budget led to Milspo's mission.

Reza Shah's another action against alien banks was the establishment of national bank. The establishment of national bank was one the nation's wishes. So the national bank of Iran was established by a German expert and the monopoly of printing the bill was transferred from loyal bank to the new bank. The development of bank branches in the cities, supplying expert human force by sending 6 persons to Europe, employing German experts and establishment of bank instruction office for instructing bank sciences, calculating, economics, law, and progression of bank stock to 300 million Rials in 1935 AD resolved some of bank problems gradually.

The government income sources in Reza Shah period were as follows: oil incomes, customhouse incomes, other indirect taxes and taxes on incomes. Direct and indirect oil incomes were the biggest government incomes. The increase of oil income led to supplying 1.3 of the total government costs .

In comparison with Japan which financial renovation formed through Aligareshi cooperation and consensus and the merchants helped the government financially, in Iran the merchants and land owners almost never had any plan about helping government financially to supply its financial sources and investing in industry. The only way remained for reformer elites was leading their ideals by themselves. In Ghajar period because of gaps in power, the reformer elites couldn't succeed and if there were any actions they faced many serious obstacles because of powerful forces, land owners, merchants and other oppositions but Reza Shah solved the problem of lack of consensus and cooperation among powerful sources by repressing internal powerful sources and taking taxes from land owners and other government financial suppliers. Reza Shah powerfully took taxes from tax payers and no one dared to object. In addition to taxes he supplied government incomes and paved the way for economical and industrial investments through oil sources.

His actions were continued after him by his son Mohammad Reza Shah. He also considered huge oil sources as the government income source and industrial and non-industrial investment sources, he could make economical and industrial progressions in the country.

Economical and industrial modernization in Japan and Iran

In recent centuries both Iranian and Japanese reformer elites by beholding western countries developments and their own weaknesses and also their pessimistic colonial vision toward western countries were up to industrial and economical renovation and independence. In Japan Aligarshi Miji by beholding the world evolutions and industrial international competitions and for defending itself against alien intervention, considered strengthen military forces in

addition to economical powers. They could import money through agricultural products such as silk and tea, and also they considered industrialization as a factor against importing western goods spreading Japanese markets. It was needed lots of money for heavy industry but other industries which were more applicable and cheaper could be a good model for importing more money and progressing heavy industries. Most of economical experts believed that loom industries progression after Miji period is a good example of material evolution of the country. Loom industries needed less technical sciences and investment in comparison with machinery industries and through them small workshops could be established. These workshops used labor forces coming easily from peasant families. Loom industries was the first in attracting largely personal investments and had no more need to the governments helps. Silk textile and spinsterhood industry were almost progressed. The spinsterhood industry was mechanized. In this industry spinners from 8000 in 1878 AD reached to 77000 over ten years. In addition in 1893 AD 382000spinners were permanently activated and the yearly production of cotton got to 88 millions. This progression was along with the increase of raw materials. The fast progression of the market since 1890 AD mechanized the loom industries and supply suitable export opportunities.

Japan was the first non-European country in using western industrial and commercial techniques in large scales and could reach a unique position. Cheap eastern labor and western technology made a perfect mixture for producing cheap commodities. The rest of Asia had cheap labor but they needed technical skills.

Europe and North America had higher technology and more natural resources and also higher life standards and higher salaries over Japan. This difference between eastern and western life standards and non-western industrial weaknesses made a unique situation for progressing industrial and commercial activities in Japan. Textile forms more than the half of plant productions and by the end of 19th AD century (second half of 13th century) was the main exportation. Steel and ship industries were made because of their strategic importance.

In addition the cooperation of state and private parts had a crucial role in economical and industrial development of Japan. This cooperation was very close and they helped each other in critical situations. The objective of economical development was not just the internal markets but also the government had higher international objectives. Before the revival of Miji there were a few companies like Mitsui. But Miji government supported private part under any conditions to achieve higher objectives and private part worked toward government's objectives, too. There was an acceptable relation between government and private part.

This cooperation made both strong. They were both after the national objectives. The financial support of private part had an important role in the victory of Miji revolution. The financial private part especially Mitsui company in early Miji when it needed money, was a reliable source for the government. In addition commercial companies were devices for strengthening military powers and developing exports. The cooperation of private part and government led to strengthen the private companies and increase their efficiency and therefore they could penetrate their neighborsand decrease their competitors penetration. By special plans of the government and the private part the industrial and commercial activities of private part increased and they could penetrate Asian countries. In addition they politically could supply weaponry and military support for the government. They paved the way for penetration in Asia and could made more markets there as a non-European country.

After Miji this economical and industrial development continued. As if Japan's investment largely increased during the first world war. As if over 1913 AD and 1920 AD steel efficiency increased from 255 to 533. The potential of electrical energy was also doubled in that period. Even though Japan's industry did not yet get to Germany, England or the US. Among the interval of two world wars Japan's economy was mainly based on small plant systems or even peasant system which was under the rule of some of Zaibatsues plants. The Zaibatsue got to the peak of its power in 1929 AD i.e before the great inactivity crisis. This group increased its penetration in agriculture and small industries through supplying financial sources and ruling the market. the Zaibatsue which Mitsui, Mitsubishi, and Yasuda were

its main companies had a very close relation with government and invested in government plans and on the other hand gained its support. Their activities range from banking and heavy industries to the other beneficial grounds. These big financial and industrial complexes supported multilateral benefits. They successfully passed economical crises and ruled small production institutes.

Industrialization elevated the people's lives especially in cities. Since agricultural productions were fixed after 1920 AD the villagers came to the cities after jobs and were employed in big or small plants. Japan took many advantages from the first world war and after the war not only was among prior powers in international societies but also its economy jumped and was activated. As if by the end of war Japan became an industrialized country. But this progression led to political and social movements and new forces entered the social and political life. In addition these economical evolutions developed urbanism. Although still there were many populations in villages. Industrialization made the ground for increasing urban population and welfare. One of the qualities of industrial and economical developed countries is the formation of average class. After the first world war the condition was suitable for forming such a class in Japan. Another factor of industrialized and developed countries is the labor union defending vast labor force rights. Labors in Japan were increased in quantity and quality and they had preliminary equipments. The development of Japanese companies continued up to the second world war in which the US attacks and Japan defeat challenged Japan's economical activities. As if after their defeat colonizers were up to destroy Zaybatsues, Kartels and other financial unions. Their objective of such a destruction was decreasing the economical and political focus which was the main factor of militarism but by the end of occupation Zaibatsues started again and controlled many industries. Another objective of colonizers was forming the labor unions to preserve labor rights against economical and commercial companies and to prevent them from increasing blocking of labor rights to the benefit of their own capitals.

But since confederates especially the US had controlled over Japan and their systems were based on capitalist democracy and because they considered one of their early objectives forming of constitution based on western democracy and competition of different parties and groups in elections, made it necessary that to battle against communism they should have a recess from destroying Zaibatsues and financial, economical monopolies. Therefore the condition was good enough for Zaibatsues to start again. Financial and economical monopolies could increasingly developed the country again over two decades and Japan again became a prior industrial and economical power. In addition along with economical development and forming political parties and some welfare, democracy was also fixed in Japan and as a democratic country continued its economical development by having interactions with other countries in the world.

Like Miji government Amir Kabir was also after economical and industrial independence and decreasing the dependence to western countries. He believed that free commerce policy is beneficial for Europeans and would destroy internal economy in long term. In addition to form a rate system to support Iranian merchants, he also encouraged the establishment of national industries. Like Miji government Amir Kabir sent some of talented Iranian masters to western countries to gain experience and decided to employ some western experts and technicians.

He encouraged those who had talent in industry. As if when he was informed about a pot which was a gift by Russian head merchant "Vish Ghartsov" in 1849 AD gave it to one of Isfahan's artists to make a model of it. The Isfahani artist succeeded and took the monopoly of producing that kind of pot. Amir Kabir's action toward industrial independence and cutting the dependence on the west led to forming small industries in the country and made a crucial evolution. But in comparison with Japan he didn't have such financial sources and the support of internal powerful sources. As it was mentioned before the solidarity and consensus between the government and private part in Japan ha d an important role in its economical development. It should be mentioned that like Japan in Iran the private pa did not formed before Amir Kabir. In Japan private companies were formed in Tokogawa period. As if this private part, and merchants had an efficient role in reviving Miji's power. After the emperor revival financial helps were given to the government to supply its financial sources and different investments and the government also

started to invest in heavy and other industries by consensus and solidarity. Then these industries were given to the private part. But in Iran not only such private part and commercial companies were not formed before Amir Kabir but also there were not any consensus or solidarity among powerful forces if the country. As if not only traditional powerful forces didn't like to help the government financially but also they reacted harshly because their benefits (sush as decresing court salary and so on were in danger.

In addition to internal problem Amir Kabir faced foreign problem, too. His ministry was along with imperialist development of England and Russia. Amir's economical reformations restricted Russian and British merchants benefits in favor of Iranian merchants. His actions in changing their favorable governors were opposed by England and Russia. Russian activities in occupying some of the islands of Caspian sea for controlling Iran's commerce in north and political (slave commerce in Persian Gulf) and economical (controlling commerce in Persia Gulf) pressure of England are the examples of their negative positions. Along with these internal and foreign oppositions Amir how could developed economical and industrial and other renovations and reformations in the country. Japanese could defeat western colonial policies by consensus and solidarity but in Iran lack of such solidarity and consensus led to more penetration and intervention of colonial countries in internal affairs.

Like Amir Kabir one of Sepahsalar's objectives was industrial and economical renovation. But there was a difference in which Sepahsalar made a priority for foreign investment in Iran because of lack of invests that led to his deposition. If in Japan the investment in industries by private part was prior and there was no need to foreign investment, it was because the ground for developing commerce and private part for investment was already formed. In Iran the private part was not formed as in Japan in which it could invest in any government plan and give financial helps to the government for investments. In Japan also a regular tax system was formed and supplied government financial sources while, there was not such a thing in Iran. In Iran private part and financial and economical companies not only didn't developed but also the government didn't have enough financial sources for investing in industries. Therefore Sepahsalar believed the only suitable way for industrial and economical investment is through foreign companies. This interest to foreign investment and signing a contract with Reuter led to his deposition. As if after the signing of Reuter's contract internal and foreign oppositions increased especially from Russia. Because of these oppositions he was deposed by Shah.

Amir Kabir's efforts for industrial and economical renovation were based on internal invests and Sepahsalar's efforts were based on foreign invests, both of them faced serious obstacles and by their depositions the way toward economical development remained unstable in Ghajar period until by the entrance of Reza Shah and forming an absolute government economical and industrial renovation seriously started again. Reza Shah started economical and industrial plans in the country by structuring tax system and oil incomes. His economical policy was based on nationalism support and the Soviet Union economical and industrial development model.

He tried to develop private industries through custom exemptions, some tax exemptions, Industry and Agriculture banks established in 1933 AD and also by using supportive actions such as rate and shares. In addition the government tried to establish loom plants, sugar infiltration, cement and other industries. The government built a small iron melting plant in 1940 AD (p.150). Reza Shah's support the industry led to increasing the budget in this ground. In 1941 AD industrial budget was about five times of 1934 AD. In result the industrial and commercial share from 3.1% in 1934 AD got to 24.1% of the total budget of the country.

In his reign Reza Shah invested around 260 million dollars in railway and 260 million dollars in industries. His national interests led to his opposition against foreign loans. The cost of most plans was paid through taxes and oil income. Social results of his economical reformations were somehow more important for social and political development than economical development. For example labor force in Iran tripled during 1938-1941 AD. By the end of Reza Shah period about 700 thousand labors were employed in older industries such as carpet, fishing, and also

new industries. Reza Shah's reformations led to more urbanism and forming new classes such as labors, bureaucrats and so on in the country which were different from traditional classes belonging to the pre Reza Shah reformation period. These new forces and classes which mostly were formed by economical and industrial renovations have a share in political decisions of early Mohammad Reza Shah period.

It should be mentioned that like Aligarshi Miji Reza Shah could make evolution in economical and industrial renovation by suitable economical programming and management. There was a difference in which Aligarshi Miji after industrial and economical investments gave them to the private part and paved the way for solidarity of private parts and forming Kartels and financial and commercial monopolies in order to continue Japan's industrial and economical development and gain penetration in neighbors for huge profits. In Iran although Reza Shah supported private part, it was not as powerful as Japan's private part. Reza Shah in addition restricted the economy to the government and after government's investment didn't give it to the private part.

In Mohammad Reza Shah period the economical and industrial renovation and development had priority in the country's policies. He took the power after the coup of 28 mordad and for gaining legitimation among people continued territorial reformations and economical evolutions. Iranian government as the receiver of oil money was the main factor of industrial development. It performed this policy from different ways. 1. The government directly invested in industries. Based on the third program about 53.1% of the total industrial investment was belonged to the government. The government share increased to 38.8% in forth program and 40% in fifth. The increase in oil price in 1973 AD increased this ratio. As if in 1975 AD 60% of investments were belonged to the government. 2. The government supplied the private part for investments. Private banking was never powerful and couldn't act as industrial invest supplier. Tehran exchange was established in 1967 AD but it was not that much successful. The government supplied invests through special institutes.

Four important institutes were as follows: industrial credit bank, industrial and mineral development bank, industrial guaranty box, and Iran development and investment bank. The national bank was the biggest bank of the country and gave credits to the country's industrial development. In this way the government supervised an industrial bourjois development. 3. Financial actions had an important role. Heavy taxes were put up on imports to support internal productions. The government exempted the companies from taxes in their early stages of work and those invest commodities needed to import for building plants were also exempted from taxes. 4. Iran government was responsible of basic constructions for industrial development in building ways, ports, and power systems in which private invests had no share. Industrial boujois had also a role in private capitalism which had three parts: 1. Owners after territorial reformations, 2. Government employees who gathered capitals through savings and administrative corruption, 3. The market. In addition to the government and industrial boujois, foreign investment had also a role in the development of capitalism. The government developed investment in Iran by giving some grants such as custom and financial exemption and the right of transferring benefits the same as the money invested at first, and finally this led to the foreign companies desire for investing in Iran.

Considering these actions toward industrial development, the industry faced a basic evolution in this period. From 15% yearly development in 1967-1975 AD to 14.6% in 1976-1977 AD and 9.6% in 1977-1978 AD. It was probably the highest rate among third world countries. As if it was two times of developing countries. The formation of impure fixed capital was even higher and it was about 18.4 in 1963-1977 AD.

Industry development led to the labor force increase in industries. In 1977 AD about 1.5 million persons were employed in industries and from the total of 250000 industrial institutes about 6000 institutes employed more than 10 persons. Not considering petrochemical part, other industrial units such as iron melting plants; increasing automobile, buses, trucks industries; machinery plants; electronic devices montage plants and so on. Automobile efficiency increased from 2300 in 1964 AD to 73000 automobiles, 1911 buses, and 29360 trucks in 1974-1975 AD.

The other industrial numbers and statics show a little increase in small plants (with 10 to 49 labors). In 1953 AD the number of these plants were less than 1000 units but in 1977 AD they were more than 7000 units. There is the same increase in average plants (50 to 100 labors); i.e from 300 units to 830 units. Big plants(more than 5000 labors) have increased from 19 units to 159 units. The number of industrial labors in 1977 AD got to the 2.5 million persons. Thanks to the supportive rates and granted monopolies, the capital interest in 1970s AD was 30% to 50% .

Mohammad Reza Shah was stock between the need for private capitalist cooperation and the political need for national and popular government. Since 1975 AD he started a triple battle to gain people support as follows: battling with high prices, corruption, and fixing labors stock in industries. The objective of labor stocks was motivating them for staying in their workplaces. Battling with high prices led to catching and pecuniary punishing of about 8000 tradesmen and merchants. Battling with corruption caused some attacks to foreign companies such as " Grooman" weaponry company, British "shekrtit and lile" company and German "Zimens" company, and labor stocks in plants became a danger for private investment and deceased it. About 2 billion dollars of Iran private capitalists (i.e 10% of total oil income) was sent to foreign countries in the same year .

Economical evolution led to wide migration of villagers to the cities and forming labor class. Industrial development increased the number of labors and they became a rich class in the country who challenged industry and economy by their strikes. Pahlavi government wasn't able to stop them and they had an important role in Shah's overwhelming.

Based on these explanations and statistics it is became clear that Mohammad Reza Shah's economical reformation can be to some extent compared with Miji period reformations. There is a difference in which Mohammad Reza Shah's renovation and reformation was mostly based on oil incomes and agriculture was peripheral so oil price updowns hurt the economy of the country but in Japan agriculture was continually considered by Aligarshi Miji all over their period. In addition Aligarshi Miji was based on internal capitals while Mohammad Reza Shah considered both internal and foreign capitals in industrial investment which in turn along with the exit of foreign capitals the country faced economical problems.

CONCLUSION

According to what discussed above the renovation of Japan and Iran to achieving economical developments have some things in common but their economical development results are deferent. Japan could get economical development by renovating actions but in Iran although there were efforts in Ghajar and Pahlavi periods, they didn't lead to economical development. Actually successful renovation needs a series of suitable grounds for renovation. One of these suitable renovating grounds is the solidarity and consensus in renovation. This condition was different in Japan and Iran.

Miji revolution in Japan was formed after two decades of Japan's seclusion from the world. A Japan was not informed of universal events. Japan gained these information through putting Japanese warships and finding the world priority over Japanese forces which led to oppositions to Shugun's government ruling about two centuries and making emperor ceremonial. The revival of the emperor's power an supporting him made a way toward a development equating western priority. Therefore Japanese different tribes prevent tribal conditions and gave their authority and financial sources to the government to have an important share in developing Japan. In addition to tribes, commercial companies also helped the government financially if it was needed. This solidarity and consensus in Japan was a suitable support for economical development. Therefore traditional and modern forces unlike their different interest and visions unified to get the economical development and considered national interests prior to their personal interests and in renovation and territorial reformation was by their government side. Such a condition led to suitable financial sources for government for forming suitable conditions for developing small industries and then enough sources for heavy industries an Japan's economical development. But in Iran the situation was different.

As if renovation in Ghajar in Abbas Mirza period his renovation was opposed by those who saw their personal benefits in danger. Such condition led to Iran's defeat by Russia and England. In Amir Kabir period the condition was not that much suitable. athough Naser Aldin Shah personally chose Amir kabir, his financial and territorial renovations faced princess, court, land owners, England and Russia oppositions and he couldn't continue his renovations. Penetrating and powerful forces didn't like to consensus in getting economical development and supplying national interests. In Sepahsalar's period the situation was the same. If Amir Kabir believed in internal financial interests and economical independence, Sepahsalar focused on internal and foreign sources. He signed a contract with Reuter which caused a lot of oppositions and finally led to his deposition. Even though the opponents of his renovating financial actions such as battling with bribery took this opportunity for his depositions. Economical renovations continued in Reza Shah period. He could make a central government by repressing his opponents and had some economical actions in some industries deep structure connections but his actions in repressing powerful land owners and some of traditional classes such as clergymen and the tradesmen and other classes caused that they didn't support him against the confederates. In Mohammad Reza Shah period economical financial and territorial renovations were also increased by giving internal and foreign grants but his renovating actions like his father was along with repressing powerful clergymen, commercial and other forces which led to no consensus. Therefore this lack of consensus in Ghajar period caused by the lack of cooperation of powerful forces with renovating actions but in Pahlavi period it was caused by repressing these forces.

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RESEARCH ARTICLE

The Relationship between Marketing Ethics with Profitability of Industrial Stock Exchange and Premium Bond

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ABSTRACT

The main subjectof thisstudy was to investigatethe relationship betweenmarketing ethics with profitability of industrial stock exchange and premium bond .Thisresearch studied marketingethics,industrial stock exchange and premium bondand examinedits influenceonthe profitability ofthisindustry , accordingly, investors who selected thecompaniesto invest.In this study , marketing ethics has been selected as independent variable and profitabilityratios of investment has been considered as dependent variable.Method of study was descriptive in nature and was surveyin order tocollecting data.A questionnaire was usedto collectdataandrandomclustersamplingwas conducted.In this study ,due tothecriteriaforselectingthesample,the number of26companies fromeachofthe stock exchange companiesinthe period of 2013to2014and20 investors of those companies whobought andsold shareshas been chosen randomly at mentioned intervalsandrespondedtothe questionsof marketingethics questionnaire. Then in order toexamine the relationshipbetweenvariables spss software has been used and two-samplet-test has been utilized for testing hypotheses.Theresultsindiacted a significant differencebetweenthe observance ofethicalmarketingandprofitabilityratiosandpurchasing the sharesof companies that comply withthese criteria has been given thegreater return oninvestmentor.Also,there was positive and significant relationship between following marketing ethics and purchasing share behavior of these industries by customers and encouraged them for buying commercial mark of these industries.

Key words: marketing ethics ,industrial stock exchange and premium bond, Profitabilityratios.

INTRODUCTION

One of the duty of a company is to recognize the demands of the target market more effectively than competitors to supply them. Inthisway, ifthe company wantstomaintain customersorincreasetheir number,it doesn't have any way unless tocreate afavorablepublicimageof itself.Companies thatremain this imagein the minds ofconsumerscause increase in consumer confidence,sales, profitability, customer satisfactionandsatisfaction ofthepublic.(Sereikiene LA,2006,p 817). Marketingishuman activityinorder tosatisfythe needs and desiresthroughthe marketing process.

One of thetopics thatdiscussed inthe field of marketing is marketingethics.Although ,there is help of marketing to the economy, the lack of integrity marketing has been raised repeatedly in the exchange industry.Weshouldseek todevelopethicalstandardsfor marketing inthe industryin order toprovidea backgrounds for marketers.So,it can be keepcustomersinvestorthat is theaim ofmarketing.Uponmarketing keep away possibleconflictsbetweenshort-termdemands of thecustomerandhis long-termprosperityandthecommunity.The study byShawand hiscollagues showsthat the implementationof ethnical and worthy patternsofprivate companies help to better understanding of consumers' desire andlead to reviewand supplytheirneedsso that encourage consumers topurchasegoodsbyimpacting on their purchasingbehavior andhas increasedtheprofitability ofthesecompaniesas well. (Shaw D. Shiu E 2000).

Holmin his researchshows thatputting in the moral worthin corporatestrategies separatethe organizationin the long runfrom otherorganizations inaindustryand becomeacompetitive advantage forit . (Holme Ch 2008 p 248-252)Gauzente & Ranchhod alsoconcluded that in the long runby increasing moral activityof the surveyedcompaniesthe feeling of empowermentandconsumer confidence increasedintheir products that has also provided customer satisfaction in addition tocreating acompetitive advantagefor thecompany.(Gauzente C, Ranchhod A ,2001).

Stockmarketethic, asits name suggests, is a part of marketing ethics that deals with stock industry activities. Stock market ethicinvolvesmoral judgmentabout theactivities of thestockexchangemarketandisthe theoretical basisof this judgment. It can be seen threetypes ofmorality in marketethicofIndustrialstock exchange. Descriptiveethic describes ethicalpracticesinexchange. Normativeethicseeksnorms,principlesand valuesthat should beprovidedbythe marketingactivitiesandanalytical ethnic that deals with meanings of ethical expression associated with thestock marketstock exchange.Manyethicalchallengeswhich arisefrom factorssuch asthedevelopment oftechnologicalinnovations are facing with ethicalmarketingin the coming years.Today, computers, Internet, fax, email and ethical issues has developed in connectionwiththe stockmarket.

Thephilosophyofmarketing has been divided into yield philosophy, production philosophy and salephilosophy. All of them have acommon goal as profitablebutthe instrument is differentfor each of them in order to achieve thisgoalso that the instrument for production philosophy is mass production, yield philosophyinstrument is product differentiation,salephilosophy instrument is further sale andthe instrument for marketingphilosophyiscustomersatisfaction.

Investment instockusually devided into analyzesecuritiesandinvestmentmanagement .The major task of securitiesanalysisisa function of therisk and return. So ,risk and return are importantininvestment.Theinvestmentobjectiveisto achievereturnswith minimalriskandinvest inthestock marketisn't apart from this matter.Throughprofitabilityratios also evaluatedthe overall performance ofcompanies andtheir management.

There would be attention to these ratios according tothe return in company. Therelationshipbetween the volume of investmentandprofitare determined ininvestmentreturn. There are three factors in the ratio of profit margin that are

included the volume ofsales, pricing policyandthe coststructure.Price-earnings ratioindicatesthe proportion ofthecompany's stock price is several times of theamount ofdividendsthat thecompanyassignstoeachits share..

In other words, this ratioindicatesthat does thestock pricerelativetothedistributionofprofits have value amongtheirshareholders.Investors of capitalmarketusually call price-earnings ratioas a means ofshowingthevalue ofthe firm. This ratio is the most commonratiothatisof great importanceforastuteinvestors in thecapital market.The reason of thepopularityof this ratio is its ability to express market valueandearnings per shareinamathematicalnumber language.The aim of thisratio is to expresstherelationship between thepriceof an investmentbased onfuture prospects ofthe company that predictedearningsper shareand expectedtoachive productivity.

In thisstudy,the researcher examinedthe relationship betweenmarketing ethicsin theindustrial stock exchangeand also investigated the relationship between thesetwo factorsin order to find whichcompaniesare moreprofitable toinvest ina properratio according to themoraldimensions.

METHODOLOGY

In this study the relationship between variables was evaluated by selecting criteria for marketing ethics as an independent variable and the ratio of profit as the dependent variable, .The purposeofthis studywas to find out the relationship between marketingethicsonthe profitabilityofthe investmentin industrial stock exchange and premium bond, It will be shown that does increasecompliancewiththese criteria will increase the ratioofprofitability(return on equity, return oninvestment, profit margins)? This research includesthe followinghypotheses:

H1: There is a significant relationship between marketing ethics and Profitability of industrial stock exchange and premium bond.

H2: There is a significant relationship between marketing ethics and willingness ofinvestors to purchasing sharesofthestock exchange in industrial stock exchange and premium bond.

H3:There isa significant relationship between marketing ethics and return on investment in industrial stock exchange and premium bond.

H4: There is a significant relationship between marketing ethics and systematic riskin industrial stock exchange and premium bond.

H5: There is a significant relationship between marketing ethics and sinterest marginin industrial stock exchange H5: There is a significant relationship between marketing ethics and sinterest marginin industrial stock exchange and premium bond.

The subjects ofthisresearch are active companieslisted onthe stock exchange andpremium bond that are member of theTehranStock Exchangeandinvestors of each companies that buy and sellshares oftheircompanies inthe period from2012to2013.The selected sample included firmsthat have theability tocompare and theirsymbolhave not beenclosed for morethan threeconsecutive monthsduring thefinancial year.Theinformation requiredto calculate thevariablesofcompaniesisavailableduringthe study .In this study,the number of26companies havebeen selectedinthe period from2012to2013throughthecriteriaforselectingthesampleand20 investorsfromeachofthecompaniesthat buy and sellshares oftheircompanies inaforementioned period .

In this study,it has been usedlibrary methodandstudyofinternaland externalresources andarticles that publishedinscientific sites for collecting the historyandliterature review .Thenumberofcompanies has been selected that are member in TehranStock Exchangeand annual report at the endof the financialperiod is availablein whichstockreport software.The companies examined for thefinancial year . The data requiredto calculate thevariableswereextracted from web sitemanagementresearch, DevelopmentandIslamicstudiesStock Exchange, network, and databasenew3outcomes.

In order to collect data aboutcompliance with thecriteria of ethicalmarketing companyalsowas obtained by a questionnaireand then extract thecontent andface validityand reliability of thequestionnaire(Cronbach's alpha was 0.83). Toanalyze thedata, descriptive and inferential methodswere used.First of all thevariableswere examinedwithrespecttotheindependent variable that is ethicalmarketing andthe dependent variablethat is the ratio ofprofitability through two independent sampleT-test.

According to subjects that was thecompanieslisted onthe stock exchange andsecuritiesindustryand its investorsand regarding thesample sizeandthe independent variable(the propertyand the amount ofsales)selected industryfirst2-yearperiod and examinedtocheck forsignificant differences invariablesbetweendifferent industries.Then by usinga questionnaire, theethicsmarketing companyisexamined.

Theoretical principles

For the operation of morals and prevent adverse effects thatare resulting from non-compliance with the Company's activities, it is important that ethical values of company become apart from thecompanies' s purpose in the strategic planning process and solutions (in the form of tools, methodsandresources) alsoconsidered forimplementation of them. Parsons PJ(2007).Oneof the topics that were discussedin theexchange siock industry is ethical marketing.Although there are marketing guide tothe economy, thelack of integrity marketing has been raised frequentlyinthe exchange stoch industry.

Weshouldseek todevelopethicalstandardsfor marketing inthe industryin order toprovide a backgrounfd for bissinessman toattractcustomersandholdinvestors who their aim is marketing.

The resultssuggestthatlong-termcompliance withethics is infavorof companies.While there is a significant relationship between theethicsoffinancialsuccessand social progresstowardsocialjustice.The results ofotherinternal researchalsosuggests that there is direct relationship betweencompliance withethics andincrease salesand profitability.

Marketingethic includesthree aspects of morality:descriptive, normative and analytical ethics. Descriptiveethic is the studyabout description and thefull extentof ethics in individuals and groups with differentcommunities.The method of discussionandresearch in thisethical study is experimental and narrativeand its purpose issimplyto become acquainted withthemanners and moralsof the individual, group orparticular community.The most importantandcontroversialmarketing ethicsdescriptivestudy was experimental decision makingin marketing in the past two decades and hasbeenstudiedintwomainforms..Oneofthe effective factors on decision makingin marketingethics divided into theindividual factors(personal factors, including factorsassociated with thedecision-makerssuch asgender, nationality, education, religion, age, occupational status,personality, attitudes andvalues) andsituational factorsandother is designing modelsthatdescribetheethical decision makingprocessandto identifythedifferentsteps that passed within achiving ethical decisions.

Alldescriptivemodelsofethical decision making start from ethicalproblemdiagnosis and pay attention to the searchstrategy, the evaluationand selectionofthe best ways.Finally, abehavior has been formed.Outcome of

descriptive models of ethical decision making mayLed to there design of organizational mechanisms and strategic mechanism to improve theethicaldecision-making.In addition, descriptive models may reveal trends and moral conflicts that otherwise marketers never suspect about them.

Descriptivestudies of marketingethics playan important role inorientating normative ethics marketing .Normativeethics is said to normativestudies and specifying theprinciples, criteria andmethods toexplain thefaith,right, wrong, andshould notbe and etc.Thispartofthe studyexaminesethicalvoluntary human actionsin terms ofgoodor bad.There are two aspectsof theoreticalandappliedethicsin normative marketing. However,theoretical principles follow valuesand standardsthatmarketersmustadheretothem.Organizing prismsethics and behavior in organizationsconductinthis regard and on the other hand, provide normative guidelinesfor managerstofollow in resolving disputesin thestudyof moral, ethical andpracticalaspects ofmarketingincludingmarketing research, advertising andretailingof them

Fourfundamental values that are dramaticallyapparentinthe content ofnormativeethicsmarketingincludehonesty, freedom, prosperityandjustice. AnalyticalMarketingEthicsisanalyticalstudiesand also called reportsin moralphilosophicalanalysis ormeta-ethicsmorality. Inanalyticalterms,some issues investigated such as the nature ofthe various conceptsof marketing, marketing ethics, theethicsofbeing separatedormarketingand public morality, whymarketers shouldbe concernedabout theethicalandabove allmoraljustification ofbasic normsmarketing.

The moralphilosophy:the marketers use marketingstrategies anddifferentprinciplesfor dealingwithethical dilemmas.These principles divided into fourgeneralofutilitarianism, Self-centered, absolutemoralandethicalrelativism.Utilitarianismconsider to theconsequences ofactions. According to thistheory,practice is good which results of doing it causes the mostbenefit to the most people.This idea encourages people tojudgme based on its resultsand selects actionwhichbringsthe most benefitto the society.

Self-centeredfocusesonthe results ofan action but contrary tothe theory ofutilitarianism, self- centered has priority for long-term benefit of individual not societ.Thistheory encourages person to the tasks that create individual interests.Absolutemoral pay attentions to right and wronggeneralprinciples.According to thistheory, tasks has been judged apart from their results. So,whatis important is not only the result of work but also are motives andcharacter ofthework.Moralrelativistsbelieve thatdetermination of correct and incorrect work is belong to culture and these judgments are notuniversal and applicable rules toall situations.Thus, something that is moral in one societymaynot beconsideredethicalinanother society.

The stock exchangemeansanofficial and capitalmarketthatbuy and sellstocksorbondsof companies oraccreditedprivateinstitutions has been done underthespecialrulesand regulations.Importantcharacteristics of theStock Exchange is supporting the lawfrom the owners ofsavings andstagnantcapitalandlegal requirements forapplicants.Stock Exchangeasthe pulse ofthe economy of country that is concerned by economic analysts and in one hand ,it is thecollectionofsavingsand on the otherhand,is officialandreliable reference that stagnantsavingsownerscaninvestprettysafeplace and put their surplusfundsto investin companiesor take guaranteed benefit and particularinterest by purchasing from government bondsand valid institutions.

The premium bond market is complementarybanking sectorinsupplying financing requirements of public and privatecompanies. The existence ofa premium bondmarketthat act according to the market mechanismcould be optimal in allocation offinancial resources.So,countries with more evolution capital markets(stock) havebeen ableto havemoreeconomicgrowth.Banking system can obtain its neededliquidity by using thepremium bondmechanismsand improvethe adequacy ofitscapital.The maintask ofthe stock exchange is providinga fair andtransparent marketforthe tradingof listedpremium bondandalso it is theappropriate systemto monitor theflow oftrade, market operationsandactivities ofits members.

The premium bond market as acoherentandorganizedstock exchangemarket is the most importantcharge ofrecruitingandorganizing theproperfinancing andby collecting cashand sellingthecompany'sstock causes themotionofthewheels oftheeconomythrough the provision offundsfor projects and also causes to reduce government interferencein the economyand increase tax revenues and significant economicbenefits.Inaddition, it has been lost the effectof liquidityoninflationin the society. In terms ofmicroeconomics, thestockmarket isan example that is closetoperfect competition.

Thegoods are homogeniuos instockanddetermined pricesare veryclose toequilibrium pricesdue toa lot ofbuyers and sellers as well as thefreedom ofentryandwithdrawal of powers.Stock Exchangeby creating acompetitive environmentas aneconomictoolcauses that profitablecompanies supply finance by selling the shares.Conversely,harmful companiesare excludedautomatically. Thus,the marketmay bedesirabletoallocateitsresources withsuch a breakdown.

The firststock exchange inthe worldcreated in1460ADin Belgium. London Stock Exchange launchedsince 1801.At the beginning ,thedomestic and foreignsecurities transacted .New York Stock Exchangewasestablished inthe late nineteenth centuryandthevolumeandthe importance ofUScapital market was in the first place and it is thelargeststock exchange in the world now.

The first ideaofcreatinga stock exchangein Iranback to 1916 by requesting ofthe government and Belgian person whose name is VanLoterfeld investigated about theformationof theStock Exchangeandhealso provide theestablishmentandconstitution for it . Following the economic and socialdevelopments in1961 andregarding widespreadpolitical and economicrelationshipof Iran with Arab,it has been determined how toestablishandadministerscholarships, institutions and organizations and the quality ofadministrationand a billwas passedin the National AssemblyStock Exchange in May1921.

Tehran Stock Exchange began its official activity in 1922by accepting thesharesofIndustrial and miningdevelopment bank ofIran as the largestintegratedeconomicproduction unitsandthenthePars Oilstocks, government bonds, Treasury billsand Abbas Abadbonds.On that time ,establishingtax breaks forcompanies that listed onthe stock exchange was an important factor inorder toencourage companiestoofferthеir sharesonthe TehranStock Exchange

Adoptionof UNResolution 598by Iran in thesummerof1988 and the new lawdirect taxation andnationalcorporatetaxlawinlate1988forrenovationsand mostof all,the lawfirstfive-year planfor economic , social and culturaldevelopmenin this year intheIslamic RepublicofIran cause boomandgrowth of Tehran Stock Exchangeintrading volume.

Profitabilityratiosindicatethe extent towhichthe institutionmanagedeffectivelyandoptimally.In fact,thesuccessof the company measuresin getting netreturns than earning of sales or investment.The most importantof themare:return on assets, return on equity, profit margins andprice-to-earnings ratio. By these ratiosconsidered to return by the followingviewpoints:thebenefitratio, based onsalesofdollars, based ontheRailsassetsandonany footageofequity.

The rate of return interest of shareholders has been called rate of special value return.Through this ratio is calculated company profitsinfavor ofequity for eachIRR.Thus,theprofitafter reducing taxdividendson profit of shareholders. Using return interestrate of the shareholdersandequityinterest determined therelationship betweenprofit and special value of the company

Reurn of stakeholder's interest=$\frac{\text{profitafterreducingtax}}{\text{stakeholdersinterest}}$

Return oninvestment is a measurethat show a company's profitabilitybased on dividing the annual incomeof a company on ordinary, outstanding sharesand long-termdebt.This index canbe usedtofind outthe extentofusing capitaltomoreoptimal company'sprofitability . Therefore,thehighertheindex,the betterthe companystatus. Therate of returndetermines the relationshipbetween investmentof thecompany in assets and profits.

Therate of return=$\frac{profitoftaxreducingtax}{rolledredassets}$

This ratioiscalledthenet profitmarginandtherebycalculate theprofitabilityofsales. Thus,theamount of profitafter reducing tax aredividedtonetsales. (Jahankhany andParsayyan,2005,65)

profitmargin= $\frac{profitafter\ reducing\ tax}{sales}$

Price-earnings ratioindicatesthecompany's stock price is multiply theamount of cash interest that the companyassignsto its per share.In other words, this ratioindicateshow much is the amount of stock pricesthan the profit that isdistributed among stakeholders. Price-earnings ratioreflectsinvestors'opinionabouta companyandin most casesthis ratio is highin growingcompanies.The high amount of this ratioindicates optimism and its lowvalueindicatespessimism of publicinvestors about the future ofthe company and it will be highas long asinvestorsbelieveto growing publicinterest by increasing thecompany's stockprice .

Butifthis trustdisappear in the profitability of thecompany, theratiowill decline. Price-earnings ratioisalsoindicate the level of riskin a companyandby increasing it therisk of sharewould be highand increasestendto sell stockswithhigh earningsratiothan otherstockprice if the risk becomes negative.When companiesspend their growth period their advantage has been stabilized andadjusttheratio ofpricetoearnings.

REVIEW OF LITERTURE

Social responsibility is strategicapproachto managingmarket in order to empower businesses and create economic growth andsustainable environmentaland socialdevelopment.Lagarde (2006)in one study entiteled moralityborn from concern on profitability, after consideringnumerous companiesthathad focusedon profitabilitydetermined that eventhese companiesshould have more attention to thecommunity forachieving goals in long-termtotheirsocial responsibility.Becausecompanies that havespecialattention to moral valuesandsocialresponsibilityhas beenmore successful.(Malar MS(2008). 136-142).

In thelast decade ofthe nineteenthcentury, when largeandmultinational companies have been forming,the attentionof society tothe need for greatercorporate socialresponsibilityhas been developed.As it wasthe first timeinthe beginning ofthe twentiethcentury and in 1919thatifbusinessesneglect to doing theirsocialresponsibilities,society reactimmediatelyandtheyforeclosetheir authorities oneconomic activities. Since the early1920s,otherresearchers had emphasisonsocial responsibilityinmanagingtheirresearch. (Hunt ShD, vitell sj 2006 1-11)

It has been determine through the conducted researches thatthepurchaseis theemotional response ofconsumerstoproducers that withrespectto theirsocialresponsibilitieshavecommittedto moral valuesinsociety. A large numberofbuyers, according tothe ethicaldimension have beenchecked value, legal, productsanddon't deceive from appearanceandpriceof imitativeinnovationto othercompanies in the process ofdeciding.(cheung WL, Prendergast G2006: 446-462).

Socialresponsibility of company is a permanentcommitment for presenting ethical behavior inbusinesswhen leadtoimprove the quality oflifeof staff in the organization aspartofthethecommunity.The meaning of community is including clientsandother people than customers .Socialresponsibility of company isapractical commitmenttoincreasethe welfareofsocietythrough increasedsocialvisionofthe business and corporate the company'sshare(Labbai MM2007 8-10).Social responsibility is requiringthe organizationtomaximize thepositiveimpactsandminimizenegative impactson society. Sereikiene LA (2006)

FamaandFrench(1992) summarizedthe findings ofprevious empirical studiesand based oncross-sectional regressionmethod have been evaluatedandfoundtherelationshipbetween thebetaCompany size, the ratio ofbook valuetomarketinthe USmarket and concluded that thesystematic risk (beta) explainthedifferencesinstock returnsduring thestudy period(1963to 1990) .Amongthe variablesof firm sizeandbook-to-market value ratio have better ablity to explainthe difference betweenthe average stock returns. Fama,Eugene and French,Kenneth,(1992p427-465).Brownet al(2011) inAustralia, Zymba(1991) inJapanand Lewis(1985) inBritain by examining the relationship betweenfirm sizeandefficiencyfoundthat the stocks ofsmaller companieshavebetterefficiency thanlarger companies.

Kvsyndys (2005) examined the relationship betweenstock returnsandprofitability for a sample of companiesinGreece.This study also tested hypothesesthat arebased on theaddition ofvariablesizeandlife cycletestingto improvethe explanatory power ofstock returns.The resultsindicate thatthe explanatory power ofprofitability forbothefficiencyandequityis very poor.While theChow testshow considerableinstabilityintherelationship betweenprofitabilityandefficiencyduring the period . The resultwill beimprovedwhenregressionadjust for considering thesize, and this theory wasstrengthened thatthe company isan important factorin explainingthe relationship between company's profitability andefficiency.

.The aim of investors from purchasing the shares ofcompanies that are listed onthe stock exchange andsecuritiesindustriesis selecting appropriatecompanies forinvestment.Theyare facedwiththis problemwhichcompanieschooseto invest that have themostprofit for them .The most important factorsthathavea significant impactonthe profitability can be mention to the salary of owners' shares ,ratio ofpricetoearnings, profit margins andreturn oninvestment.Butperhaps oneof the most influentialfactorforinvestors'selectioncriteria is compliance of theethicsmarketing.

In thisstudy,the researches soughtto identify the relationship betweenmarketingethicswith the profitabilityofthe company and finally thechoice ofinvestors.Otherresearchin this fieldare the workHvakmyn, AplrandNytman (2001) andGraham, Lemmon, Shalhym(1997)which show that large companies have lower riskthansmall companies.GapyndazandKrishnamurti(2001) in their studyconcluded that thesizeofthe company can be effective in the relationship betweenstockliquidityandpricevolatility(risk) .(Hoacimin, Opler, Nitman, 2001p 211–221)

In study by Chi-Fu Chenand tracheaChina (1988) asentitled: the asset pricingtest andthe role of size as a usefulvariable for riskby putting companies' shares in respect to the size ,finallyconcluded that thesize of company cant be regarded as a factorin determiningandefficiencyof predictionandrisk because there wasn't a significant relationshipbetweencompany size andefficiency. GabrielPerezandKyrvsDesertTyrmn (1995) investigatethe variability ofstock returnsof large and small companies in boomand recessioncondition.Sothe resultisthatsmall companies have more return(risk) and actuallyshow a highersensitivity indifferent conditions. (Gabriel Perez-Quiros ,Allan Timmermann 2006, 629-665)

RESULTS AND DISCUSSION

In order to investigate hypotheses descriptive statistics utilized firstly.Then ,regarding period of 2012 to 2013 as a period of study,the hypotheses has been tested in different industries of accepted companies in stock exchange.In this interval,all of industries has been tested regarding criteria for depenf=dent variable (profit ratio).

In thesecondtestexaminedthecompliancecriteria for marketing ethics.Then,profitabilityratiosstudied in companiesthatmeetthe criteriaof marketingethics.By conducting this test, first thetestfor equalityof variancessoftware(Levin) is displayed.Inthistable,(Levene's Test for Equality of Variances)If thelevel issignificantly lowererrorrate(0.05), the inequalityof variancescan be concluded.In this table(t-test for Equality of Means),ifsignificant levelofoutput is undersoftwareerror value(0.05), it could be concluded thatthe mean ofthe population undertheterms oftested variablesis different.

Testing the first hypothesis

H0:There isn't a significant relationship between marketing ethics and Profitability of industrial stock exchange and premium bond.

H1: There is a significant relationship between marketing ethics and Profitability of industrial stock exchange and premium bond.

Regarding theselected companiesbased on profitability ratios in13 industries, ina period of 2 years and according tothe resultsoft-test in Table1, aforementioned industryhasa low levelofsignificance(0.05) .So, profitability ratios is different according tomarketingethics.Considering thedifferences betweentwogroups(16.60826) profitability ratios alsoincreased due to increasing in marketingethics.

Testing thesecond hypothesis

H0:There isn't a significant relationship between marketing ethics and willingness ofinvestors to purchasing sharesofthestock exchange in industrial stock exchange and premium bond.

H2:There is a significant relationship between marketing ethics and willingness ofinvestors to purchasing sharesofthestock exchange in industrial stock exchange and premium bond.

Regarding theselected companiesbased on willingness ofinvestors in13 industries, ina period of 2 years and according tothe resultsof t-test in Table2, aforementioned industryhasa low levelofsignificance(0.05) .So, willingness ofinvestors is different according tomarketingethics.Considering thedifferences betweentwogroups(11.11151)willingness ofinvestors alsoincreased due to increasing in marketingethics.

Testing thethird hypothesis

H0:There isn't a significant relationship between marketing ethics and return on investment in industrial stock exchange and premium bond.

H3:There isa significant relationship between marketing ethics and return on investment in industrial stock exchange and premium bond.

Regarding theselected companiesbased on the amount of properties in13 industries, ina period of 2 years and according tothe resultsof t-test in Table3, aforementioned industryhasa low levelofsignificance(0.05) .So, the amount of properties is different according tomarketingethics.Considering thedifferenent variance betweentwogroups(0.03293)return on investment alsoincreased due to increasing in marketingethics.

Testing the fourth hypothesis

H0:There isn't a significant relationship between marketing ethics and systematic riskin industrial stock exchange and premium bond.

H4: There is a significant relationship between marketing ethics and systematic riskin industrial stock exchange and premium bond.

Regarding theselected companiesbased on the systematic risk in13 industries, ina period of 2 years and according tothe resultsof t-test in Table4, aforementioned industryhasa low levelofsignificance(0.05) .So, the systematic riskis different according tomarketingethics.Considering thedifferenent variance betweentwogroups(6.95650)systematic risk alsoincreased due to increasing in marketingethics.

Testing the fifth hypothesis

H0:There isn't a significant relationship between marketing ethics and interest marginin industrial stock exchange and premium bond.

H5: There is a significant relationship between marketing ethics and sinterest marginin industrial stock exchange and premium bond.

Regarding theselected companiesbased on interest margin in13 industries, ina period of 2 years and according tothe resultsof t-test in Table4, aforementioned industryhasa low levelofsignificance(0.05) .So, the interest margin is different according tomarketingethics.Considering thedifferenent variance betweentwogroups(5.80225)interest margin alsoincreased due to increasing in marketingethics.

CONCLUSION

Ethics, moral principles and ethical behavior cause fair and honest business behavior of companies towards their customers. Marketing ethnic is principle of approach and practice that determine the correct and incorrect behavior towards all stakeholders .This issue is addressed in the field of marketing companies, customers and investors and will be studied from different aspects in the future .

In this study it was shown that the reaction of stock investors is tend to invest and loyalty to the brand company and according to the obtained results they have been a lot of marketing ethic. It can be noticed that when companies corporate profit maximization approach to mobile marketing ethics approach, not only the economic benefits are not reduced but also the responsibility towards shareholders, customers and all stakeholders will benefit from economic interests .

The results show that there is a significant relationship between marketing ethics with profitability of industrial stock exchange and premium bond.

About the other hypothesis ,there are positive relationship between marketing ethnic and interest in investment, return on investment, systemic risk and profit margin.In other words, by increasing marketing ethics and observe developments in scholarship recipient companies,the subjects behaviors are influenced by the choice of investment and brand of the company is affected by them.

The practical result of this study is that it is necessary to accepted principles of morality in society according to their marketing by companies if they are able to maintain their position in the industry or promote the industrial stock exchange and premium bond. In the stock exchange industry, respond to moral responsibility in this context will have an important competitive advantage. Therefore, current organizations need to plan their marketing with particular focus on the ethics and principles of it.

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The companies that selected as sample

number	Industry name	number	Industry name	number	Industry name
2	Machinery	2	metallic minerals	2	Rubber and Plastics
2	substance and Pharmaceutical products	2	basic metals	2	Tile and Ceramic
2	Electrical devices	2	AutomotiveandParts Manufacturing	2	Non-metallic minerals
2	Chemicalproducts	2	Cement,limeandplaster	2	Food productsexceptsugar
26			Totalcompany	2	Massindustry

Questionnaireto assesscompliance withthe ethics ofmarketing

Raw	Criteria for measuring compliance withmarketing ethics	So much	much	Somewhat	few	Very few
1	Marketingethicstrainingtostaffto prepare in facing with ethicalchallenges					
2	Full implementationofmarketingethicstransparently					
3	Respecting to sacred of different religionsandpresence onthe occasionofhumanitarianaid					
4	Avoid to holding in Festivals andunrealistic awardsandpromoteconsumerismandcreatingfalseneeds					
5	Transparencyof informationandavoidunrealisticandexaggeratedadvertising					
6	Answeringthe telephoneandattendingto trackconsumer complaintstosolve the problem					
7	Definitiing anddeveloping moral responsibilityamongemployees					
8	packaging product,name ,brandandactual quality					
9	Fairness of priceandreasonable way ofPayment					
10	Obeying the rulesof free					

	tradeandprivateownershipsystem					
11	Attempting on following lawonTrade andmarketing					
12	Moral responsibilityin solvingsocial problems inthe productionand services					
13	Justifing theappropriateness ofserviceand Iranian valuesystems					
14	Effortstopromote therole ofsovereignty of consumer					
15	Extensive advertisingand offerseasonaldiscounts					
16	Construction of industrial and production unitsin underserved areasin order to depriving withrespectto environmental rules					
17	Attending on special programs in supportingorphans					

Table1: **Dependent variable based on profitability ratios**

There is significant relationship between marketing ethics and Profitability of industrial stock exchange and premium bond.						
Type of industry	**t-test**			**First test Equality in variances**		**Accept or reject**
	sig	df	t	Sig	F	
Rubber and Plastics	0.682	24	-0.415	0.067	3.67	×
Tile and Ceramic	0.374	28	-0.903	0.053	4.193	×
Non-metallic minerals	0.008	21.321	-2.951	0.015	6.812	√
Food productsexceptsugar	0.020	78	2.374	0.451	0.573	√
Massindustry	0.048	8	-2.328	0.055	6.333	√
metallic minerals	0.044	23	3.197	0.287	1.186	√
basic metals	0.028	38	2.279	0.127	2.431	√
car	0.045	73	2.455	0.184	1.802	×
Cement	0	53	-4.60	0.075	3.299	√
Machinery	0.035	14	3.002	0.40	4.623	√
Pharmaceutical	0.036	68	2.591	0.09	7.35	√

Electrical devices	0.297	28	-1.062	0.966	0.02	√
Chemicalproducts	0.018	78	3.624	0.756	0.097	√

Table2: Dependent variable based onwillingness ofinvestors

There is significant relationship between marketing ethics and willingness ofinvestors to purchasing sharesofthestock exchange in industrial stock exchange and premium bond.						
Type of industry	**t-test**			**First test Equality in variances**		**Accept or reject**
	Sig	**Df**	**T**	**Sig**	**F**	
Rubber and Plastics	0.277	24	-1.113	0.497	0.476	×
Tile and Ceramic	0.155	28	1.461	0.490	0.489	×
Non-metallic minerals	0.004	25	-3.206	0.246	46.506	√
Food productsexceptsugar	0.754	78	-0.314	0.233	1.442	×
Massindustry	0.048	8	-2.328	0.055	7.507	√
metallic minerals	0.019	23	3.665	0.718	0.133	√
basic metals	0.028	38	2.279	0.127	2.431	√
car	0.045	73	-3.317	0.354	0.870	×
Cement	0	53	4.744	0.103	9.744	√
Machinery	0.304	28	-1.408	0.456	0.572	×
Pharmaceutical	0.034	68	2.753	0.609	0.264	√
Electrical devices	0.223	28	-1.248	0.869	0.028	×
Chemicalproducts	0.026	78	2.130	0.331	0.958	√

Table3**: Dependent variable based on return on investment**

There is significant relationship between marketing ethics and return on investment in industrial stock exchange and premium bond.						
Type of industry	**t-test**			**First test Equality in variances**		**Accept or reject**
	Sig	Df	T	Sig	F	

Rubber and Plastics	0.031	21	2.796	0.968	0.002	√
Tile and Ceramic	0.904	28	0.122	0.691	0.161	×
Non-metallic minerals	0.050	25	2.473	0.977	0.001	√
Food productsexceptsugar	0.787	78	0.271	0.693	0.157	×
Massindustry	0.576	8	0.582	0.555	0.379	×
metallic minerals	0.046	23	-3.643	0.052	4.187	√
basic metals	0.028	38	2.075	0.355	0.878	√
car	0.049	73	2.396	0.713	0.136	√
Cement	0.045	53	3.746	0.22	1.542	√
Machinery	0.012	28	2.641	0.016	6.511	√
Pharmaceutical	0.048	67	3.699	0.622	0.245	√
Electrical devices	0.988	28	0.015	0.236	1.465	×
Chemicalproducts	0.035	77	-3.537	0.255	1.315	√

Table4: **Dependent variable based on systematic risk**

There is a significant relationship between marketing ethics and systematic riskin industrial stock exchange and premium bond.						
Type of industry	**t-test**			**First test Equality in variances**		**Accept or reject**
	Sig	**Df**	**T**	**Sig**	**F**	
Rubber and Plastics	0.032	22	-1.04	0.061	22.358	√
Tile and Ceramic	0.015	24	-2.684	0.059	3.493	×
Non-metallic minerals	0.494	28	-0.693	0.076	3.391	√
Food productsexceptsugar	0.042	25	2.142	0.060	32.075	√
Massindustry	0.049	78	-3.314	0.233	1.442	×
metallic minerals	0.805	8	-0.255	0.543	0.403	×
basic metals	0.07	23	-0.381	0.149	2.231	×
car	0.140	38	-0.203	0.776	0.082	×
Cement	0.024	36.239	2.365	0	21.356	×
Machinery	0.326	53	0.971	0.082	3.146	√

Pharmaceutical	0.032	28	-2.054	0.088	3.117	×
Electrical devices	0.428	68	-0.798	0.582	0.305	×
Chemicalproducts	0.853	28	-0.187	0.945	0.05	×

Table5: Dependent variable based on interest margin

There is a significant relationship between marketing ethics and interest marginin industrial stock exchange and premium bond						
Type of industry	**t-test**			**First test Equality in variances**		**Accept or reject**
	Sig	**Df**	**T**	**Sig**	**F**	
Rubber and Plastics	0.027	24	-2.362	0.690	0.163	√
Tile and Ceramic	0.015	24	-2.684	0.059	3.493	√
Non-metallic minerals	0.494	28	-0.693	0.076	3.391	√
Food productsexceptsugar	0.042	25	2.142	0.060	32.075	×
Massindustry	0.049	78	-3.314	0.233	1.442	×
metallic minerals	0.805	8	-0.255	0.543	0.403	×
basic metals	0.07	23	-0.381	0.149	2.231	×
car	0.140	38	-0.203	0.776	0.082	×
Cement	0.024	36.239	2.365	0	21.356	√
Machinery	0.326	53	0.971	0.082	3.146	√
Pharmaceutical	0.032	28	-2.054	0.088	3.117	√
Electrical devices	0.428	68	-0.798	0.582	0.305	×
Chemicalproducts	0.853	28	-0.187	0.945	0.05	√

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RESEARCH ARTICLE

The Effect of Organizational Image and Customer Satisfaction on Customer Loyalty (Case Study: Restaurants in Abhar)

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ABSTRACT

Marketing in its evolution is in a stage that not only marketers are seeking to find new customers, but nowadays the purpose of marketing is to manage the level of demand through making customers loyal to the organization. Today, customer satisfaction is not sufficient and organizations must be ensured that their satisfied customers are loyal as well. Customer loyalty can be achieved in different ways. Customer satisfaction and the image of the organization are factors that can affect customer loyalty. This article seeks to explore the relationship between image and customer satisfaction with their loyalty in the service sector of restaurants. It is an applied research which is conducted as a survey. The results show that the image of restaurants and customer satisfaction with the service provided in restaurants is positively related to customer loyalty.

Key words: Customer Loyalty, Customer Satisfaction, Image, Restaurant

INTRODUCTION

In today's world, in which mass-production of goods and services has increased supply in relation to demand, there is no alternative left for producers except customer satisfaction, and the market and supply cannot be defined through limited tools any more. Experience has shown that organizations that have a traditional look at concepts

such as customer, good, market, sales, purchase, competition, advertisement, quality etc., will not only fail in achieving success, but also their investments is lost (Masoumi, 2012). Until a few years ago using restaurant service was considered as a luxury hobby by families and it was common in certain parts of the society but in recent years, changes in the culture and level of public revenue, and thus changes in the lifestyles, as well as factors such as increase in the employment rate of women, popularized the use of the restaurants as a common issue among families. With the increase in demand for services in this sector, the number of restaurants are increasing as well. As a result an intense competition has took place in attracting customers, but we should bear in mind that attracting customers is just the beginning. Today, satisfied customers and customers who have an attachment feeling are like a long-term investments with high profitability for organizations. In fact, in today's world it is the loyal customers that guarantee the survival and profitability of the organization. (Bruner, T.2007) quoted by Bahram Najabriyan et al.

Nowadays the art of marketing is to turn customers into elements who are a coworker within the organization and a sponsors and advocate outside the organization. Customer's loyalty has many benefits for the organization. Some of these benefits include: reducing the cost of new customers attraction, reducing the sensitivity of customers to price changes, the benefits of lifetime customer value, positive performance through increase in the power of prediction, enhancement of barriers for new competitors. Loyal customers can also upgrade and develop the organization. (Bass, 1974) suggests that customer loyalty is a sense of attachment for people, products or services of an organization. And thus the tendency to recommend products or services of an organization to other people is shown. (Blomer et al., 1998) define customer loyalty to the good image of the organization as follow: behavioral responses along with bias or revisiting which is expressed by some decision-making units to an organization, out of the space of any other organization and through the passage of time which is a subordinate of psychological process and will lead to commitments to the desired organization.

When customers attribute a good image of services of an organization they may feel a willingness to adapt about a desired commitment and tendency to continue trading with the organization. (Kurt, 1997).

For example (Oiler et al. 2006) proved that recognition of the organization on behalf of the customers leads to loyalty so that customers with high recognition must have a positive thinking and feeling about the organization. Then a favorable image of the organization makes the customers to positively and continuously strengthen the emotional and committed feeling to their organization. The findings show that a good image provokes the customer behavior and positively impacts the customer loyalty (Nazemi et al., 2013).

Customer loyalty to the organization is considered as a subordinate of his consent. Loyal customers increase the profitability of the organization through tolerating higher prices for goods and services of organization, repetitive purchases and recommendation of products and services to others (2004 Fecikova, i .) Several studies have shown that a slight increase in customer satisfaction leads to a significant increase in profitability. (Richheld and Saaaer). It is now clear that for the success of the company customer loyalty is more important than customer satisfaction. Many researchers claim that the image of the goods and services significantly increase the customer loyalty (Faullant, R. Matzer, K. & Fuller, J.2008). Therefore focusing on customer loyalty, possibly is a default for the survival of organizations, including service providing organizations like restaurants.

Managers and employees of service providing organizations such as restaurants should focus their aim on the basis that providing good quality services will create loyalty in them. In the meantime the meta-role behaviors of employees and managers can be effective in creating a sense of loyalty and strengthening the organizational image, however, it increases the market opportunity. (Abbasi et al., 2012).

Research Objectives

The aim of this study is to determine the relationship between customer loyalty with its two prerequisites i.e. organizational image and customer satisfaction

Research questions

1. Does the customer satisfaction affects customer loyalty?

2. Does the restaurant image affects customer loyalty?

3. Does the inferred image from restaurant image and customer satisfaction out of restaurant performance (employees' relationship management, quick service provision and attention to the customer, appearance and price) determine changes in customer loyalty?

Theoretical Foundations and Literature Review

Marketers in the past used to increase profitability only through finding new customers but in new marketing perspective, customer satisfaction and attention to the quality in his view is a requirement of marketing. Nowadays the art of marketing is to turn customers into elements who are a coworker within the organization and a sponsor and advocate outside the organization.

Corporate Image

During the 90s, many companies in an attempt to improve their competitive situation, presented plans for introducing the company as a way to strengthen and even change the image of their company. Extensive introduction of new logos, number of companies which have changed names and flourishing of design industry in that decade are all evidence of this claim (Lu & Lin, 2010). In the Oxford Dictionary, the corporate image is defined as follows: an overview which an individual, an organization, a product, etc. gives to the organization.

The corporate image is the perceptions, beliefs, imaginations and feelings of people about a company that is in their mind. The corporate image is associated with different physical and behavioral characteristics of the company, features such as company brand, structure, variety of products / services, tradition, ideology and feelings that each person has toward his relationship with customers of company about the quality of his products.

Thus, the corporate image has two main components: functional and emotional. Functional component is related to tangible specifications which can be easily measured while the emotional component is associated with psychological dimensions. It is created through feelings arose from experiences of individuals to a company, and information processing about characteristics that make the functional indexes of image. Therefore the company's image is the result of a compound process by which people compare different features of companies (kenneth de roeck et al, 2010).

The corporate image is formed through a special process in the minds of consumers whereby the data are processed and are organized as meanings based on previously classified data. (Sedghi, et al).

Customer satisfaction

One of the strategies and priorities of prosperous organizations in today's world, is customer satisfaction and client attraction. Companies that neglect needs and demands of clients and customers and follow a product-centric approach rather than a customer oriented approach will be removed from the competition. The most useful and the most appropriate strategy for restaurants is customer orientation, in fact this sentence can be stated a little stronger and that is: the foundation of the restaurant industry is customer orientation. Customer orientation, provides numerous benefits for the organization, in fact higher levels of customer satisfaction leads to loyalty. Satisfied customers will most likely discuss their own experiences among others. Satisfaction is a theme that has been widely discussed in the literature of marketing and loyalty and numerous definitions are offered for it. But researchers are still looking for a general definition for this concept. (Oliver 1997) writes: "Everyone knows what the satisfaction is, but still looks for a definition of it, so it seems that no one knows it". Satisfaction is as an emotional response that emphasizes the performance of the product during consumption or after consumption compared to some standards that we had in mind before purchasing (Oliver, 1997). Satisfaction is a feeling that operates to reach an individual to perfection and has an emphasis over the product or service that is assessed after one or continuous consumption (Oliver, 1997). Customer satisfaction is the desirability level that the customer gains for the various features of goods and is a profitability source and a reason for the organization's activities (Hernon et al., 1999). Customer satisfaction is the feeling or relationship management of the customer to goods or services which operates as a bridge between different solutions of consumer purchase behavior, if customers are satisfied with a particular service or product, they will probably repeat their purchase. Satisfied customers speak with others about their good experiences which results in a positive word of mouth advertisement for the organization (Hallowel, 1996).

Customer Loyalty

It is naive to think that dissatisfied customers will be lost or satisfied customers will remain loyal, studies show that some customers that insist on their consent, are still willing to use the services of competitors and dissatisfied customers continue to use services from time to time, but the customers who are very satisfied, have a very low tendency to use other products of market. Some researchers believe that satisfaction and loyalty are the same concept, but some believe that there is not much relationship between customer satisfaction and loyalty and they are totally different. But the majority of research in this area, have found a positive relationship between satisfaction and customer loyalty and satisfaction is considered as a need for loyalty.

Richard Oliver (1997) defined the concept of loyalty as "maintaining a deep commitment to repurchase or re-election of product or service, continually in the future, so that the same brand or product continue being purchased despite the impact of potential marketing efforts of competitors" The most famous acceptable definition for loyalty is given by Jacoby & Kyner in 1973 where loyalty is defined as bias toward a brand and behavioral response over time in which a person prefers a particular brand over other brands and will decide about it as a mental commitment (Haghighi Kaffash et al., 2010). Griffin (1995) features a loyal customer as follows:

Frequently refers to use particular goods and services.
Uses the goods and services of interest to a large extent (wide range of services).
Attempts to attract the attention of others, and refer them to use goods and services of interest.
Have little sensitivity in using goods and services of competitors (Ghasemi, 2004).

High rate of customer loyalty, in addition to creating a competitive advantage for the organization, increases the morale of the employees. As a result it not only has a positive impact on the development of the organization and production process but also reduces the cost of organization's opportunity. Research has proven that loyalty is an

important factor in the success of the successful organizations. A new theory is formed about the success of the organization, and that is loyalty-based management will guarantee success (Mohajeri, 2008).

A brief review of research conducted by different researchers shows

(Cronin et al., 2000) evaluated and assessed the effects of quality, perceived value and customer satisfaction on consumer behavioral intentions in four service environments such as restaurants. The findings of the study showed that customer perception and quality value in restaurant keeping section has a direct positive relationship with satisfaction. While their direct relationship with behavioral intentions was not confirmed and it was determined that they have an indirect and positive effect with behavioral intentions through satisfaction. Bloemer,Odekerk (2002) conducted a study about the prerequisites for satisfaction, loyalty and image which includes factors such as reputation, advertising and innovation, and the results showed that image and its components have a positive effect on satisfaction and will lead to loyalty. In fact, the direct effect of which on satisfaction was not confirmed. (Oliva, 2006), examined the direct impact of customer's image of a top restaurant on both dimensions of customer loyalty (referring again and recommending to others). His study showed that reputation and innovation of the restaurant has a direct and positive effect on both dimensions of loyalty, in fact this relationship both directly and indirectly affects loyalty through satisfaction.

(Ryu et al., 2008), examined the relationship between the overall image of fast food restaurants (restaurants that in terms of service and food have better quality than fast foods and have a limited menu), perceived value, customer satisfaction and behavioral intentions in two dimensions (referring again and recommending to others). In this study it was shown that the perceived value has a direct positive relationship to customer satisfaction and behavioral intentions as a partial mediate customer in the relationship between perceived value on loyalty was more than its indirect effect due to the impact of satisfaction on loyalty, and also the impact of reputation and innovation on loyalty, satisfaction and perceived value was also confirmed.

Faullant et al, in a case study of Alps ski resort examined the impact of satisfaction and image on loyalty. They initially established a causal model of customer satisfaction and the corporate image as a predictor of customer loyalty, and then assessed these relationships between different groups of customers. The first group were those people who referred to the resort for the first time, and the second group were those guests who regularly referred to it. The results showed that people who had high satisfaction and assessed a good image of ski resort had high loyalty. Overall satisfaction was more important than the image of the resort for the people who were referring for the first time. With the increase in the number of referrers to the resort the importance of satisfaction reduced and the importance of the resort image increased for this category of customers.

Bruner et al, examined the following hypotheses using data collected from rail carrier companies about satisfaction, image and loyalty:

1. High satisfaction of an equation is associated with high loyalty.
2. For new customers the first hypothesis is stronger than customers with prior experience.
3. There is a positive relationship between image and loyalty.
4. For new customers the third hypothesis is weaker than customers with prior experience.

The results showed that for new customers, satisfaction is so important for their loyalty, while the image plays a less important role on the loyalty of these customers. For customers with previous experience, the role of satisfaction on loyalty declines, but the role of image on the loyalty increases in these customers.

Ryu et al, in their study examined the relationship between the image of the restaurant, perceived value, customer satisfaction and behavioral trends in the restaurant industry, their findings showed that the image of restaurant significantly affected the value of the inferred value, also the perceived value played an important role in customer satisfaction. Customer satisfaction is predictor of customer behavior tendencies.

Martenson in a case study examined the company's brand image, satisfaction, and loyalty to the store. The questionnaire was sent to customers via e-mail that ultimately 1000 usable responses were obtained. Path analysis was used to test the model which linked the independent variables of satisfaction and image to the dependent variable of loyalty. The results showed that for satisfied customers, the store as a commercial brand enjoys high significance. Customers are satisfied when the store recognizes their needs and also behaves them well.

Ou & Abratt believe that the store location, its convenience, secure parking place, the right combination of products, effective advertising, pricing and suitable service level are all factors that shape the image of a store. Kandampully & suhartanto examined the following hypotheses on the role of hotel image and its satisfaction on customer loyalty:

Image of hotel is positively related to customer loyalty.
Customer satisfaction with the services, food, drinks and prices are positively related to customer loyalty.
The image of the hotel and satisfaction of hotel performance significantly explains the amount of customer loyalty.

In this study, the regression analysis was used to test hypotheses and results suggest the confirmation of the above hypotheses. Nguyen and Le Blanc, studied the effects of customer satisfaction, quality and value of services on the perception of the organizational image and loyalty to the financial services organizations. The results showed that there is a positive correlation between the customer satisfaction and quality of service with value of service and quality of services have a greater impact on inferred value to customer satisfaction. The results also showed that the customers who have a better perception about quality of service will have more favorable assessment to the corporate image. In summary, this study showed that the corporate image and customer satisfaction affect customer loyalty, while the impact of customer satisfaction on customer loyalty is more than the image. Nguyen and Le Blanc also studied the relationship between the image and reputation of institutions of higher education with customer loyalty in these organizations. The results showed that when the customers' perception of the image and reputation of the institution is desirable then their level of customer loyalty increases.

Doctor Rouzbeh Hosseini and Fateme Hossein pour, compared, and assessed the impact of brand and brand identity on customer loyalty and satisfaction and the purpose of the study was to investigate the brand in different aspects and its impact on customer loyalty. And in short the result of the study was that good brands enjoy the consumer ranking, and consumer ranking means that customers show loyalty to brands. Easy to pronounce, reminding ability, and creation of a distinct image features goods and services.

In a research done by Abbas Sedghi and Mostafa Ghazizadeh and Mohammad Mehdi Maghbooli (2012) they examined the relationship between service quality and organizational image with customer loyalty and satisfaction. The findings of this study suggest that the quality of services and bank image is positively related to customer satisfaction and loyalty. Also satisfaction has a positive relationship with loyalty. In a research conducted by Dr. Bahram Ranjbariyan and Morteza Shafiee, and Hassan Moeini they compared the impact of organizational image and customer satisfaction on customer loyalty in the restaurants of Isfahan. And the results show that the image of restaurants and customer satisfaction with the service provided in restaurants is positively related to customer loyalty.

The Theoretical Framework and Conceptual Model of the Research

The theoretical framework of the research discusses the internal links among variables that finally have a role in the dynamics of the studied situation. Theoretical framework is a foundation that all research is based on. This framework includes a logical and descriptive network including the relationships between variables that have been identified. In the research the theoretical framework can be considered the same as the model (Sekaran, 2008, quoted by Saebi and Shirazi). According to the results of previous research, the research questions and their conceptual model the theoretical framework of this study was developed as Figure 1. As it is shown in the figure, independent variables are restaurant image and customer satisfaction, and the customer satisfaction includes four variable: Customer satisfaction from the employee's relationship management, customer satisfaction from fast service provision, customer satisfaction from appearance of the restaurant, customer satisfaction from the cost of the services provided, each associated with customer loyalty as a dependent variable.

Customer Satisfaction Research Method

The present study, is applicable in terms of purpose, descriptive in terms of research subject characteristics, and it's a survey-field research in terms of time and manner of data collection. Books, technical papers, theses and internet websites are used to collect data and information related to research background and literature. To collect the required data and to evaluate and test hypotheses field method and a questionnaire is used.

Statistical Population

The statistical population of the research are the customers of restaurants of Abhar city. In this research cluster sampling was used. First for the sample accuracy, to estimate parameters of the sample and according to the different areas of Abhar a number of restaurants were randomly selected and customers of the restaurants were selected by random sampling in order to distribute questionnaires.

The Sample Size

Sample is a part of the population which has the characteristics of most members of the population and actually represents the community or subjects and the obtained results of the study can be generalized to the whole population (Saee, 2010). Given that the population size is unlimited, Cochran formula was used to obtain the amount of sample:

Cochran formula in case the population size is not specified: $n=\frac{z^2 pq}{d^2}$

Z = 1.96
p = 0.5
d = 0.05
Q = 0.5
The sample size is 384 subjects
Instruments and Sampling Method

Questionnaire is one of the common tools of research and a direct way to obtain research data. Questionnaire is a series of questions that respondents should answer by considering them. This response forms the required data of the researcher. The questions of the questionnaire can be considered as stimulus-response. To gather the required data for this study a questionnaire was used containing 3 general questions, 27 specialized questions. The specialized questions are designed based on the five-point Likert scale as follows:

1 = very high, 2 = high, 3 = average, 4 = low, 5 = very low

In this study, to measure the reliability of questionnaires, Cronbach's alpha test is used. The designed questionnaire was completed by 30 people in a pilot study and then Cronbach's alpha variables were calculated by Spss software. Since the obtained Cronbach's alpha coefficients for each and every variable is larger than 0.7, thus it becomes clear that the relevant questionnaires have a good reliability. The reliability of the questionnaire is 0.98.

Data Analysis Method

To analyze the extracted data and test research hypotheses, both descriptive and inferential statistics were used. Descriptive statistics such as frequency distribution tables, percent and diagrams and statistics of mean and standard deviation is used to describe the characteristics of the statistical sample. To test the research hypothesis Spearman correlation coefficient along with spss software will be used. By using this software, the correlation coefficient was used to reject or confirm the hypothesis. For ranking variables and investigating the effect of each variable on the dependent variable Friedman test, and for goodness of fit model Chi-square test was used. Since the scale is ranking and the data is abnormal so these tests were used according to k-s test.

Demographic Characteristics

The results of statistical description indicates that the number of 94 (33.6%) of the respondents were women and 186 subjects (66.4 percent) were male, 91 were 30 years or less (32.5%), and 85 subjects were between 30 to 40 years (30.4 percent) and 66 subjects were between 40 to 50 years (23.6%) and finally 38 subjects were older than 50 years (13.6%). 43 subjects hold a high school diploma (15.4%), 40 subjects hold Associate Degree (14.3%), 136 subjects hold a BA degree (48.6%) and finally 61 subjects hold an MA or a higher degree (21.8%).

Describing Indexes that Represent Research Variables

As you can see for each variable statistics such as minimum and maximum data and mean, median, standard deviation, variance, skewness and elongation of variables are separately calculated.

Table 1. Central and dispersion indexes related to research variables are shown. As you can see for each variable statistics such as minimum and maximum data and mean, median, standard deviation, variance, skewness and elongation of variables are separately calculated.

Median score of customer loyalty variable equals 2 and the standard deviation is 1.2. Median of restaurant image variable equals 2.6 with a standard deviation of 0.9. The results show that the mean score of customer satisfaction of the relationship management of restaurant employees equals 2.5 with a standard deviation of 0.93. The median of customer satisfaction variable of fast service provision is equivalent to 2.37 with a standard deviation 0.87. And the median of customer satisfaction of the restaurant appearance equals 1.8 with a standard deviation of 0.73. And finally the customer satisfaction of the prices equals 2.5 with a standard deviation of 1.9. And negative skewness indicates that the elongation of variable scores is to the left.

Analysis and Testing Hypotheses

Table2. Results of the Kolmogorov-Smirnov normality test is shown, these tests were conducted to examine the normal distribution of data variable. According to the results, since the significance level of tests is lower than 0.05 the distribution is not normal, and non-parametric tests were used, and given that ranking scale is used in the

questionnaire, so to test hypotheses Spearman correlation test was used and to test the third hypothesis Friedman test was used.

The Hypotheses of the Study

Hypothesis 1 there's a significant relationship between customer satisfaction and customer loyalty
Hypothesis 1 -1) there's a significant relationship between customer satisfaction of employee's relationship management and customer loyalty.
Hypothesis 2-1) there's a significant relationship between customer satisfaction from the appearance of the restaurant and customer loyalty.
Hypothesis 3-1) there's a significant relationship between customer satisfaction from fast service provision and customer loyalty.
Hypothesis 4-1) there's a significant relationship customer satisfaction from the price of the services provided and customer loyalty
Hypothesis 2. There is a significant relationship between the image of restaurant and customer loyalty.

Hypothesis 3. Image inferred from restaurant and customer satisfaction with the performance of the restaurant (employees' relationship management, quick service provision and attention to the customer, appearance and price) determine the changes in customer loyalty.

Hypotheses Test

The main first hypothesis
H1: There is a significant relationship between customer satisfaction and customer loyalty.
H0: there is no significant relationship between customer satisfaction and customer loyalty.

Since the significance level of the test is equal to 0.000 and is lower than the acceptable error rate ($0.01 = \alpha$). Therefore, we can reject the H0 in 0.01, it means that with a confidence of 99% it can be said that there's a significant relationship between customer satisfaction and customer loyalty. On the other hand given the obtained amount of correlation coefficient (r = 0.884) which is a positive value therefore we can say that there's a positive and strong relationship between customer satisfaction and customer loyalty.

The first sub-hypothesis

H1: there is a significant relationship between customer satisfaction of the employee's relationship management and customer loyalty
H0: there is no significant relationship customer satisfaction of the employee's relationship management and customer loyalty

In Table 4, the amount of Spearman correlation coefficient and significance level between two variables "customer satisfaction and customer satisfaction of employee's relationship management" is shown. The third number of the table is 280 that shows the number of respondents.

Since the amount of significance level of the test is equal to 0.000 and is less than the acceptable error rate ($\alpha = 0.01$), therefore H0 hypothesis is rejected at 0.01. So there is a significant relationship between customer satisfaction of employee's relationship management and customer loyalty. However, according to the values obtained from the correlation coefficient (r = 0.842) which is a positive value, so we can say that there is a strong positive relation between customer satisfaction of employee's relationship management and customer loyalty.

The Second Sub-Hypothesis

H1: There is a significant relationship between customer satisfaction of restaurant appearance and customer loyalty.
H0: There is no significant relationship between customer satisfaction of restaurant appearance and customer loyalty.

Table 5. the amount of Spearman correlation coefficient and significance level between the two variables "customer satisfaction of restaurant appearance and customer loyalty". Since the amount of significance level of the test is equal to 0.000 and is less than acceptable error rate (α = 0.01) so H0 is rejected at level 0.01. There is a significant relationship between customer satisfaction of restaurant appearance and customer loyalty. And since the correlation coefficient (r = 0.695) is a positive value, so we can say that there is a strong significant relationship between customer satisfaction of restaurant appearance and customer loyalty.

The Third Sub-Hypothesis

H1: There is a significant relationship between customer satisfaction of fast service provision and customer loyalty.
H0: There is no significant relationship between customer satisfaction of fast service provision and customer loyalty.
The Fourth Sub-Hypothesis
H1: There is a significant relationship between customer satisfaction of the price of provided services and customer loyalty.
H0: There is no significant relationship between customer satisfaction of the price of provided services and customer loyalty.

In table 7. The amount of Spearman correlation coefficient and significance level is shown between two variables "the image of restaurant and customer loyalty". Since the significance level of the test is equal to 0.00 and is lower than acceptable error rate (α = 0.01), so we can reject hypothesis H0 at 0.01. This means that there is a significant relationship between restaurant image and customer loyalty.

The Second hypothesis

H1: There is a significant relationship between the image of restaurant and customer loyalty.
H0: There is no significant relationship between the image of restaurant and customer loyalty.

Table 8. The amount of Spearman correlation coefficient between significance level is shown between the two variables "the image of restaurant and customer loyalty". Since the significance level of the test equals 0.00 and is lower than the acceptable error rate (α = 0.01), so we can reject hypothesis H0 at 0.01. This means that there is a significant relationship between restaurant image and customer loyalty.

The third hypothesis

H1: There is a significant relationship between restaurant image and customer satisfaction of the restaurant performance (employees' relationship management, quick service provision and attention to the customer, appearance and price) with customer loyalty.

H0: There is no significant relationship between restaurant image and customer satisfaction of the restaurant performance (employees' relationship management, quick service provision and attention to the customer, appearance and price) with customer loyalty.

The results indicate that since the significance level of the test is lower than ($\alpha = 0.01$), so we can reject hypothesis H0 and confirm H1. This means that there is a significant relationship between restaurant image and customer satisfaction of restaurant performance and customer loyalty.

P < 0.05 df = 5 Chi square = 273.307

Table 9 also shows that according to the mean scores, restaurant image and customer satisfaction are more important in customer loyalty than the employee's relationship management.

Goodness of Fit of the Model

After ensuring of the existence of a significant relationship between the research variables, in the following we are going to study the type of research and the direction of variables influence. The Chi-square test is used.

H1: There is a significant relationship between customer satisfaction and restaurant image to customer loyalty.
H0: There is no significant relationship between customer satisfaction and restaurant image to customer loyalty.

As shown in Table 11. Since the significance level of variables is lower than the $\alpha = 0.05$ so it can be concluded that there's no significant difference between the extend of effect of each variable to the loyalty, thus hypothesis H0 is rejected. So it can be concluded that the variables test have a good distribution fitness.

Friedman test (Ranking variables)

One of the non-parametric tests, is Friedman test. As the answers are interdependent to each other they can be compared in terms of ranking by using this method:

Null hypothesis and the alternative hypothesis are written as follows:

Null hypothesis: mean of ranking of several hypotheses are the same.

Alternative hypothesis: at least one pair of the same ranking have different ratings.

Because the significance level sig = 0.00 < 0.05. In other words, the H0 null hypothesis is rejected with 0.05 error, and H1 hypothesis is confirmed so at least one pair of the same rank factors doesn't' have the same rank and according to the ranks employee's relationship management is in the first place.

DISCUSSION AND RESULTS

First hypothesis: it showed that there is a significant relationship between customer satisfaction and customer loyalty. And confirms the findings of previous research in this field. For example in a study done by (Davood Feiz, et al.) who compared the quality of services and customer satisfaction in the hotel industry, they studied hotels of Mashhad, the results showed that there is a significant relationship between the quality of provided services in hotels and customer satisfaction.

The second hypothesis: it showed that there is a significant relationship between customer loyalty and restaurant image, and the obtained results confirm the findings of prior research in this area including a study conducted by

Ryo and others. Their study findings showed that the restaurant image significantly affect the inferred value, perceived value also plays an important role in customer satisfaction. Customer satisfaction is a predictor of customer behavior which leads to loyalty.

The third hypothesis: it showed that there is a significant relationship between the two components of customer satisfaction and image of the restaurant on customer loyalty. And the result confirms findings of prior research in this area. In the study done by Kandampully & suhartanto in this field, the following hypotheses were examined on the role of hotel image and its satisfaction on customer loyalty.

1. The image of a hotel is positively related to customer loyalty.

2. Customer satisfaction with the services, food, drinks and prices are positively related to customer loyalty.

3. The image of the hotel and satisfaction of the hotel performance significantly explain the level of customer loyalty.

In this study regression analysis was used to test hypotheses and other results suggest the confirmation of the above hypotheses. So we can conclude that the results of this study confirm the findings of previous research.

CONCLUSION

Many researchers and most importantly Bloemer, Odekerk, have always believed that the corporate image and its components, such as reputation, advertisement and innovation, and prerequisites of satisfaction have a positive effect on loyalty. Also other researchers outside and inside have claimed that customer satisfaction with the quality of company services and positive image that they have from the organization have a considerable impact on two dimensions of loyalty (referring again and recommending to others).

The present study was conducted in line with researches, the impact of customer satisfaction and restaurant image with customer loyalty was studied and finally it became clear that there is a significant relationship between customer satisfaction and organization's image. In general, these measures can help managers of restaurants and other service institutions to improve internal performance by considering these factors. The results of this study showed that customer satisfaction of the employee's relationship management, the restaurant appearance, and customer satisfaction of the prices and quick service provision are important factors in determining the future references of customers in the restaurant and its recommendation to others.

It should be noted that when the impact of customer satisfaction with various aspects is simultaneously tested along with the restaurant image on customer loyalty, customer satisfaction with the employee's relationship management and restaurant image (customer's perception of the willingness for service provision and their ability to provide services, sensitivity of employees to resolve customer issues, responding to customer complaints) and customer satisfaction with the prices of the services provided are very important factors in determining the next referring of customers to the restaurant and its recommendation to others. Several studies have shown the positive impact of customer satisfaction on customer loyalty, numerous studies have shown the positive impact of the image on loyalty. But in this study it was attempted to simultaneously evaluate the impact of the image and customer satisfaction on his loyalty. The results of this study confirm the previous research results, and suggest the positive effect of these two factors on customer loyalty. The findings of this study showed that the expansion of customer loyalty is not only dependent on the ability of restaurants to improve customer satisfaction based on performance of the services provided, but also the ability to create a good image in the minds of customers in this area is important. In addition, various aspects of a restaurant services, including p7 services (Product, Price, Place, Promotion, People, Process and

Physical Assets) may directly affect the inferred image of the organization. So it is vital to manage the seven marketing variables (p7) corresponding to the image of the customer's mind and in line with the improvement of the restaurant image. For example, reduction of the prices may attract a certain class of customers, and for some others it can be a determining factor of the restaurant image. So attracting new customers that affect the restaurant image may negatively affect the loyalty of existing customers. The results of this research showed that all aspects of restaurant service are not equally important to the customer. As it was extracted from Friedman test results the image of the restaurant that featured items such as quality and price of services, good location, employee's relationship management, its reputation ... was rated the highest and it was an important factor in determining the customer loyalty. Employees' relationship management with customers and the manner of answering their problems and complaints are decisive factors in customer loyalty. So restaurants need to place great importance on suitable employees' relationship management with the customer, management of customer complaints about the quality or food price.

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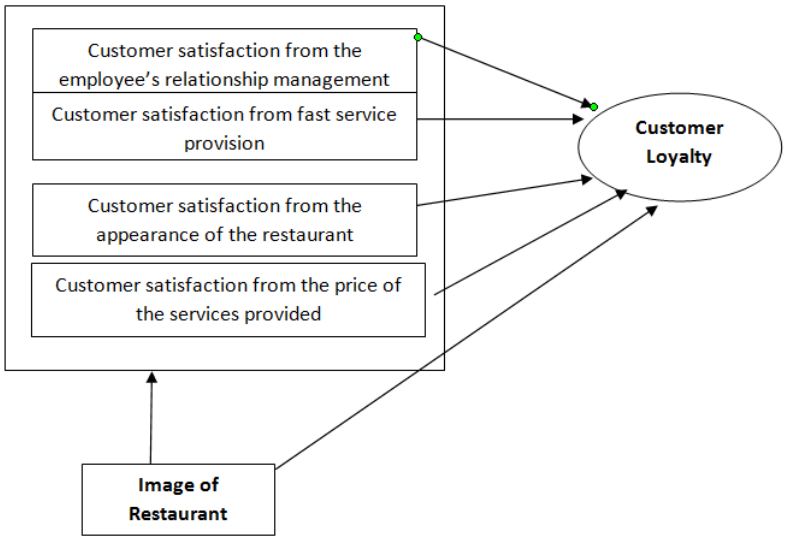

Figure 1: Conceptual Model of the Research

Table 1 - Descriptive statistics of Research variables

Statistics	Customer Loyalty	Image of Restaurant	Customer satisfaction from the employee's relationship management	Customer satisfaction from fast service provision	Customer satisfaction from the appearance of the restaurant	Customer satisfaction from the price of the services provided
Mean	2.59	2.68	2.62	2.51	1.95	2.6
Median	2	2.6	2.5	2.37	1.8	2.5
SD	1.2	0.9	0.93	0.87	0.73	1.09

Variance	1.45	0.82	0.88	0.77	0.54	1.2
Elongation	0.308	0.257	0.369	0.354	0.79	0.41
Skewness	-1.002	-0.719	-0.354	-0.778	-0.66	-1.07
Minimum	1	1	1	1	1	1
Maximum	5	5	5	4.5	3.8	5

Table 2. The results of Kolmogorov-Smirnov

	Customer loyalty	**Restaurant Image**	**Customer satisfaction from the employee's relationship management**	**Customer satisfaction from fast service provision**	**Customer satisfaction from the appearance of the restaurant**	**Customer satisfaction from the price of the services provided**
Kolmogrov-Smirnov test statistic	3.2	1.5	2.53	2.63	2.58	3.36
Significance level	0.000	0.014	0.000	0.000	0.000	0.000

Table 3. Examining the relationship between customer satisfaction and customer loyalty

	Spearman correlation test	**Significance level**	**Number of data**
Customer satisfaction-Customer loyalty	0.884	**0.000**	280

Table 4. Examining the Relationship between customer satisfaction of the employee's relationship management and customer loyalty

	Spearman correlation test	**Significance level**	**Number of data**
customer satisfaction of the employee's relationship management and customer loyalty	0.842	**0.000**	280

Table 5. Examining the relationship between customer satisfaction restaurant appearance and customer loyalty.

	Spearman correlation test	Significance level	Number of data
customer satisfaction of restaurant appearance	0.695	**0.000**	280

Table 6. Examining the relationship between customer satisfaction of fast service provision and customer loyalty

	Spearman correlation test	Significance level	Number of data
customer satisfaction of fast service provision and customer loyalty	0.827	**0.000**	280

Table 7. Examining the relationship between customer satisfaction of the price of services and customer loyalty

	Spearman correlation test	Significance level	Number of data
customer satisfaction of the price of services -customer loyalty	**0.855**	**0.000**	**280**

Table 8. The relationship between image of restaurant and customer loyalty

	Spearman correlation test	Significance level	Number of data
Image of restaurant - customer loyalty	**0.855**	**0.000**	**280**

Table 9- Friedman test Results

Variables	Mean Scores
Customer Loyalty	3.64
Customer satisfaction from the employee's relationship management	3.95
Customer satisfaction from the appearance of the restaurant	1.97
Customer satisfaction from fast service provision	3.53
Customer satisfaction from the price of the services provided	3.81
Restaurant Image	4.11

Table 10- Friedman test Results

Significance level	DOF	Chi-Square	Number of Data
0.000	5	273.307	280

Table 11. Chi-square test results

	Customer loyalty	Restaurant Image	Customer satisfaction from the employee's relationship management	Customer satisfaction from fast service provision	Customer satisfaction from the appearance of the restaurant	Customer satisfaction from the price of the services provided
Chi-square	102.693	81.286	275.171	124.036	130.036	94.529
DOF	8	35	16	14	14	8
Significance level	0.000	0.000	0.000	0.000	0.000	0.000

Table 12. Ranking of customer satisfaction factors on customer loyalty

The effect of customer satisfaction factors on customer loyalty	Mean rank	Significance level	Rank
employee's relationship management	2.99	0.000	first
fast service provision	2.68	0.000	third
appearance of the restaurant	1.52	0.000	fourth
Price of services	2.81	0.000	second

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RESEARCH ARTICLE

Development of a Model for Assessing the Maturity of Customer Knowledge Management in Organizations

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ABSTRACT

An asset that has lately attracted so many attention, it is the customer's knowledge. Customer knowledge is an important source of information. Many companies, approach to knowledge management to enjoying the benefits of knowledge management. In this paper we are looking to extend a maturity model so it can be used to assess the maturity level of organizations CKM maturity model and to develop their potentials, abilities and weaknesses in customer knowledge management. Unlike previous models and approaches to achieve this objective, the method is based on the proximity of the organization to the customer and how much a customer is involved in the organization or companies processes. In order to reach to a current result the approach that has been used in this paper is based on different methods of communication with customer and the tools and techniques of collecting customers knowledge and has been divided to 5 levels (Survey, Trust, Consultation, Experience Documentation, Learning), based on the opinions of experts in 12 companies that have been studied in this paper, and the status of knowledge management and customer knowledge management components and other effective components have been specified in each level.

Key words: Customer Knowledge Management, Knowledge Management, maturity, knowledge, Customer Relationship Management.

INTRODUCTION

With the development of the internet and budding of dotcoms, knowledge management in e-commerce is becoming increasingly important. With emphasis on knowledge as a key asset and only sustainable source of competitive

advantage in the knowledge economy, businesses have come to realize the critical importance of organizational knowledge, but may be overlooking Customer Knowledge (CK) as a brilliant element. Customer knowledge is at the origin of most improvements in customer value. In order for organization to be more efficient and effective in delivering products or services to customers, and thus creating customer delight, knowledge on customers will have to be managed to ensure that the services organizations provide are those that will address customer needs . Although Customer Knowledge Management (CKM) has been discussed in various circles we still face considerable questions that are not yet answered, or enough attention has not been paid in the CKM literature regarding some fundamental issues. For instance we may still be asking: "What is the exact definition of CK and CKM? How does customer knowledge form? What are our suppositions in relation to the various kinds of customer knowledge? Should all kinds of customer knowledge be manageable by businesses?"

Information systems literature makes a difference between data, information and knowledge. Companies recognize knowledge as a crucial resource in the competition and the importance of utilizing knowledge to gain a competitive advantage, but many of them still ignore customer knowledge. In order to have a good relationship with their customers, customer-focused companies specifically e-companies have to communicate and interact with them in a satisfactory manner, and continuously meet customers' changing needs. This requires the management of 'customer knowledge'. A. Data, Information and Knowledge Information systems literature makes a difference between data, information and knowledge elaborated on the disparities:

"Data is a set of discrete, objective facts about events. In an organization context, data is described as structured records of transactions. Information is data endowed with relevance and purpose. It is a message with a sender and a receiver. Information is meant to change the way the receiver perceives something, to have an impact on his judgment and behavior. It must inform. Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.". Proposing a Conceptual Model of Customer Knowledge Management:

Subsequently companies have come to use knowledge management.

Knowledge management systems are now essential to ensure that value is extracted from knowledge internal and external to the organization. Knowledge management is the conscious and active management of creating, disseminating, and applying knowledge to strategic ends. Knowledge management spans product and service Knowledge, industry knowledge, competitor knowledge, methods and process knowledge and customer knowledge. To date, most companies have focused on collecting massive amounts of data about their customers but they don't know how to cope with them. We have identified two key articles in customer knowledge management: the Customer Knowledge Management Concept (University of St. Galen) and Five Style of Customer Knowledge Management. The point of view from the University of St.Gallen derives from reflections about customer relationship management (CRM). An essential idea is to use knowledge gathered to encounter with customers in order to support business processes. In accordance with authors of St. Gallen conception, the task of customer knowledge management is to design knowledge flow inside and between the CRM processes. A further task is to allocate relevant knowledge gained from customer related processes to others. The authors of "Five Style of Customer Knowledge Management" proposed five style of CKM and exemplify them. Their research shows that by managing the knowledge of their customers, corporations are more likely to sense emerging market opportunities before their competitors, to constructively challenge the established wisdom of "doing things around here", and to more rapidly create economic value for the corporation, its shareholders, and last, but not least, its customers. In their approach CKM refers to the management of knowledge from the customer i.e. knowledge residing in the customer, in contrast to knowledge about customers. Moreover they discuss that their approach is different from traditional Knowledge management in the objective followed. "Whereas traditional knowledge management is about efficiently gains (avoiding of re-inventing the wheel), CKM is about innovation and growth".

In order to acquire and monitor customer knowledge, a number of practices, instruments and measures have been suggested in the knowledge management literature. Beijerse proposes the following:

- Assess customers
- Carry out customer satisfaction research
- Obtain knowledge from customers
- Interview customers

We define Customer knowledge as a kind of knowledge in the area of customer relationship, which has direct or indirect effect on our organizational performance (The proposed CK formation model is shown in the fig. 1).

According to our point of view, Customer knowledge management is a process of planning, organizing, leading and controlling manageable customer knowledge which has direct or indirect effect on our organizational performance. When we talk about customer knowledge, we mean knowledge of our customer. One of the most important messages of the paper is that customer knowledge can be formed by informational interaction between customers and diverse entities like: our company, our other customers, our competitors and information consulting institutes. It is important to know that we cannot manage all of these interactions. For example, our customers' knowledge may be affected and formed by interactions between them and our competitors, but we cannot have considerable control over it. In CKM, it seems that we have to focus on managing informational interaction between ourselves and our customer or between our customers. Although, CKM is mainly about knowledge, it is also about data and information that can be analyzed, interpreted and eventually converted to knowledge. Below we explain our attitude and definition of three types of CK.

Knowledge for Customer

Knowledge for customer is a kind of knowledge (also data or information which can be analyzed, interpreted and eventually converted to knowledge) that our targeted customer attains in order to know us better. Often in the literatures, sources that provide knowledge for customer are overlooked. Data, information or knowledge for customers Can be gained from our other customers, information Consulting institutes, our competitors and the company itself to provide information needs of customer (as shown in fig. 1).We should bear in mind that a company isn't able to manage all of these knowledge flows (e.g. knowledge that is streamed from competitors). We tend to mention that all arrows of knowledge for customer, as it is shown in CK model, lead to our targeted customer.

Knowledge from Customer

Knowledge from customer is a kind of knowledge (also data or information which can be analyzed, interpreted and eventually converted to knowledge) that the company attains in order to enhance its products and services [9], [16].

Knowledge about Customer

Knowledge about customer is a kind of knowledge (also data or information which can be analyzed, interpreted and World Academy of Science, Engineering and Technology in order to know its targeted customer better. Companies not only capture knowledge about customers but also purchase data, information and knowledge about customers.

CKM Model

According to CKM model of Garcia-Murillo and Annabi in 2002, the stages of CMK model can be presented as follows:

Step 1: Knowledge revealing

When the customer and salesperson come together, they both bring their knowledge and experiences to the interaction. In this face-to-face encounter the customer seeks to satisfy a need. The need can be for a product or service. On some occasions the customer knows well what he intends to buy but in other circumstances, the customer may not be oriented and hopes to find information at the store. Although the customer does not expect to be educated about a particular product, since this has not generally been a store practice, he could learn something [9]. On some occasions he may be lucky and find a helpful salesperson that is willing to offer some advice. In CKM the role of the salesperson changes considerably and, instead of just providing basic information about a location or availability of a product, he becomes inattentive listener who is trying to understand the customer's needs. In addition to informing, the salesperson can gather knowledge from the customer about :(1)Preferences with respect to the product or service, such as color, size, shape, textures, style for products and requirements for services ;(2)Competing products and in particular the attributes that are appealing about them; and even (3)Industry trends such as incoming products or services. At the initial part of this step, the customer and the salesperson identify the objective of their interaction. This is an important requirement. Otherwise two-way learning would be difficult.

The customer's sharing of what he/she knows can be characterized as knowledge revealing in this first step of the interaction. The customer reveals his/her preferences and prior knowledge; this is what Yoon and Nolan refer to as certainty, as opposed to the information need, which they refer to as uncertainty.

Step 2: knowledge sorting

While the customer displays what he/she knows and his/her preferences, the salesperson begins to create a mental map of user needs. Based on customer needs, the salesperson will begin to identify the pieces of knowledge that can help the consumer in his/her particular situation. To help a customer make a decision, the salesperson sorts knowledge relevant to that particular individual regarding product characteristics, functional attributes, information about common problems, substitute products, maintenance information, quality records, competitive products, and options. The knowledge identified by the salesperson should be articulated and presented to the customer not necessarily as pressure for a sale but as genuine effort to assist in the decision-making process. The customer in turn feels more comfortable making a decision that satisfies his/her needs and returns to the store to satisfy future needs.

mechanism, are the customer's knowledge of the product and firm, the amount of information the customer needs, the type of information appropriate to meet the customer's needs, and the time available for the interaction. Once the factors have been initially determined, the salesperson presents the pieces of knowledge he has identified to the customer. This facilitates the process of creating long-term partnership with the customer.

Step 3: knowledge leveling

At this point of the interaction, the customer has obtained general information about the products and services. Similarly the salesperson has an idea of customer preferences and needs. Because complete understanding might not have been achieved initially and because preferences change over the course of the interaction, this third step in the process involves reaching an understanding of the needs and perspectives of both parties. It is important for the sales-person to have a clear idea of customer needs after exchange of knowledge has taken place and for the customer

to realize the type of information that he requires to make a decision. Although this step is necessary to satisfy the user, the company benefits the most from the initial encounter. This is because once the customer is aware of the options available at the store he will have to adjust his preferences to what is actually available. It may be useful then for a company to make a distinction in the company's knowledge base between actual and modified preferences.

The logic of CKM seems counterintuitive: the challenges of getting employees to share their knowledge with one another are daunting enough. Why would customers, of all people, want to sharetheir knowledge to create value for the company and then pay for their own knowledge once it is deployed in the company's products? This is further exacerbated because customers, like employees, are often notable to make knowledge, i.e. their experiences with the company's products, their skills, and reflections explicit, and thereby easily transferable and shareable. The answer to these questions is customer knowledge managers put themselves in the shoes of corporate customers, kindling customers 'intrinsic, rather than extrinsic motivation to share their knowledge for the benefit of the company. There are several sources of customer knowledge. Some pertain to structured data that is gathered from transactions. Others come from interactions with customers. Customer knowledge in this paper refers to two different aspects of knowledge: (a) the knowledge that the customer has about the issues that are related to the product or services that he is interested in buying; and (b) the knowledge that the firm should have that can be used to assist the customer in making a purchase decision. The reason why we make this distinction is because we are assuming an interactive process of knowledge exchange between the firm and the customer where sometimes the customer provides information while other times the firm does.

CKM collects large amounts of data about customers and their transactions to help companies understand the behavior of their customers through Advocates of CRM argue that that it improves customer retention and satisfaction by providing customer-tailored services. KM enables CRM to expand from its current 'mechanistic, technology-driven, data-oriented approach' towards more 'holistic, complex, and insightful ways of developing and using CK.

CKM tools and Techniques for collecting knowledge

Registration

A register is a depository of information on individual or companies. It can be used to obtain complete enumeration through a legal requirement. Registers are implemented when there is a need for accurate knowledge of the customer and for closer monitoring of customer activities. Although registers are usually implemented for purposes other than to collect data, they can be very useful in the design and implementation of a statistical system, provided that the data they contain are reliable, timely and complete. Registry has a different types for collecting knowledge from customer such as contact us forms, data base, and data flow program.

Questionnaires

In contrast with interviews, where an enumerator poses questions directly, questionnaires refer to forms filled in by respondents alone. Questionnaires can be handed out or sent by mail and later collected or returned by stamped addressed envelope. This method can be adopted for the entire population or sampled sectors. Questionnaires may be used to collect regular or infrequent routine data, and data for specialized studies. While the information in this section applies to questionnaires for all these uses. In order to maximize return rates, questionnaires should be designed to be as simple and clear as possible, with targeted sections and questions. Most importantly, questionnaires should also be as short as possible. Questionnaires, like interviews, can contain either structured questions with blanks to be filled in, multiple choice questions, or they can contain open-ended questions where the

respondent is encouraged to reply at length and choose their own focus to some extent. There are some famous tools and techniques in this category such as media room, online news, search engine and blogs.

Interviews

In interviews information is obtained through inquiry and recorded by enumerators. Structured interviews are performed by using survey forms, whereas open interviews are notes taken while talking with respondents. The notes are subsequently structured (interpreted) for further analysis. Open-ended interviews, which need to be interpreted and analyzed even during the interview, have to be carried out by well-trained observers and/or enumerators. Open-ended interviews like: groups, Panel surveys, QFD and structured interview like chat rooms.

Direct observations

Observers can make direct measurements on the production process. In practice, observers do not only make direct measurements (observations), but also conduct interviews and surveys using questionnaires. They might also be involved in data processing and analysis. The tasks of an observer are difficult and adequate training and supervision are therefore essential. Preferably, observers should only collect data, not carry out other activities, such as enforcement, licensing or tax collection. This should help to minimize bias by reducing the incentives to lie. Problems in terms of conflicts between data collection and law enforcement, for example, can be reduced by clear demarcation, separating activities by location or time. Different tools and techniques in this category are customer related blogs, mystery shopper.

Reporting

In most complete enumeration approaches, staff do not directly undertake data collection, but use external data sources. Most commonly, these sources are data forms completed by the companies themselves, customers, market operators, processors and even trading companies and custom offices. Such methods are almost exclusively used for semi-industrial institutions. Some famous tools are CRM, suggestion management, wikis and feedback.

Research Methodology

The research described in this paper aims to concentrate on providing a maturity model for customer knowledge management. The purpose of this study is, functional and Data gathering method is descriptive Survey. The collected information given in any the research must be based on objectives, Research methodology and sample characteristics. Therefore, in order to collect Data, methods of library and non-library (business expert's opinion and measure of performance enhance in the organization) is used. The under study population were 12 company in Esfahan city, which their filed of work was as follow, 5 company in computer and information technology services, 4 company in instruction and 3 of them were production companies with total 148 expert, using random selection method left us with total 108 expert and they all have participated in the booth phases and the both questionnaires were corrected based on their opinion. In bothquestionaries'5-point Likert scale range has been used and the Cronbach's alpha reliability test results have been measured, in the first questionnaire reliability was0.86and0.82for the second survey questionnaire which both are considered to be reliable.

To achieve our main research goal, we used a two-phase research strategy in this paper.

At first forthispurpose, alist of all effective components on customer knowledge managementmentioned inearlierresearch has been extractedand they can beclassifiedinto 10maincategories as shown in table 1.

Developing CKM Maturity Model

The result for the first survey has shown in table 2, according to this results the items with above 2.5 rate are effective on CKM, and we have used this items in our secondquestioner to determine the value, the magnitude and the statusofeach ofthese itemsin ourcustomer knowledgemanagement maturitylevel.

The second survey consisting of 46 questions according to the effective components on CKM identified in the first phase was given to the experts.The results ofcustomer knowledgemanagementmaturity levelin terms ofuserinvolvement are asoutlinedbelow in tables 3 to 7, according to the results Customer Knowledge Management Maturity based on customer involves can be divided in to 5 levels, in these tables the tools and technology's based on rank and function similarity classified in one item.The first questionnaireto assessfactors affectingcustomer knowledge management based on a questionnairethatwasextractedfromTable2were designed.In this paper the main focus is on the amount of customer involvedness in the company's process and the customer'sengagement in the organization. So, according to the knowledge collecting methods and techniques and the selected components a survey containing 50 questions was answered by the experts and the result are 5 different but connected maturity levels in the way that any of them contains all the features and the methods of those before.

CONCLUSION

Customer knowledge management maturity assessment in terms of customer participation, identifying the makers of the spectrum and even step up in this way requires a framework that includes components and key indicators of performance and success of Customer knowledge management.

A maturity model can represent a situation in which the organization is located. Meanwhile, a leading organization in the implementation and evaluation of their performance will definitely have more satisfied customers. One of important result of this study which is the main objective of this research was to develop a comprehensive model for Customer Knowledge Management maturity and identifying the components and indicators. Strategic indicators, Technology and Tools, CKM process, KM process, CKM process and etc. In this paper the direct relevance between KM and CRM can be noticed. According to a comprehensive model that we developed for the customer knowledge management maturity, the roadmap for organizations that are implementing customer-centric knowledge-based systems, or are planning to walk in this way, we provide. This model can help organizations plan and implement customer-centric, knowledge-based systems to design and implement the systems as efficiency as possible. The extended model in fact is an incentive for providing infrastructures, strategies, technologies, process and human resources needed in order for involving customers more and more. So, customer can feel like an actual part of the organization and be loyal to it, in this way companies and organizations can use the valuable hidden knowledge's inside the customer after all the products and services are for the end users and who knows their needs and demands more than themselves?. At the end we suggest that organizations assess their CKM maturity level with this model and start moving toward reaching the final level of maturity model and gaining its magnificent advantages.

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Figure (1) CK Formation Model

Table 1- Identified components of CKM

Main category	subcategories	number
Strategy	Strategy, Vision, Mission, Goal	1
Human resource	Employee, Human resource, People, education, Promote and strengthen, Recruitment, Motivation	2
Culture	Culture	3
Technology	Technology	4
Tools	Tools	5
Infrastructure	Infrastructure	6
CRM Process	Management of, discontent, Ongoing, management, Targeting, Process, integration, Welcoming, Business, acquaintance	7
KM Process	Identify, create, store, share, learn, use, documentation, and integration	8
CKM Process	Identification of Knowledge capture, knowledge selection, storing knowledge, knowledge sharing, knowledge application, knowledge creation and sale of knowledge	9
Other Components	Conflict management, collaboration, assessment and participation, the	10

Table 2-CKM components

Component	Rate
Strategy	4.8
Human resource	4.5
Culture	2.4
Technology	3.7
Tools	4.0
Infrastructure	2.2
CRM Process	4.9
KM Process	4.9
CKM Process	4.9
Other Components	2.1

First level: Survey

Large companies often contract with survey organizations to collect the opinions of customers. An increasingly popular technique to grow the response rate for retailbusinesses is to give the customer a discount coupon at the point of sale that she can redeem at her next trip tothe store -- inexchange for calling a number on the sales receipt and participating in the survey. Small businesses can do the same thing without having a third-party service organization involved. Hand out the survey card to the customer and tell her that if she brings it back, she will receive a discount and make it a meaningful one such as 10 percent on her next purchase. In this level which calls survey minimum elements of customer knowledge management are being applied and organization the organization has a little amount of customer knowledge and it benefits. All of the organizations in the worst case will belong into this level. Organization's knowledge management components in this level are as table 3.

Table 3 -First maturity level of CKM

First level	
Strategy	There are no strategy or plans for implementing customer knowledge management, but there organization is welling to have some strategies for this matter in the future.
Human resource	Nearly there are not any human resource process or methods to implement customer Knowledge management in the organization.
Process	In this level there are some process such as survey that are being documented, but none of them are practically implemented.
Technology and tools	The methods and the tools that are being used are mainly for extracting knowledge from customer are mostly implemented manually like survey, observation and there are no formal and documented tools at this level.
Knowledge management Process	At this level awareness and recognition of customer knowledge is very weak and there are some minimum effort for capturing this knowledge.
Customer Knowledge Management Process	Organization has almost no manage over its customers knowledge
Customer Relationship Management Process	At this level the organization payees the minimum attention to its relationship with customers

Second level: Trust

At times it might be beneficial to hire a specialized customer survey organization to collect and interpret the data for you. You might be making a critical decision such as whether to expand into a new geographic area where you currently have no customers that you could survey directly. Your goal could be to find out whether your company has any brand recognition there among prospective customers, or even more basically whether a significant number of customers have a need for your products or services. The survey organization can create targeted lists of individuals to contact. Work closely with the company you engage so you can craft a survey that goes after the specific information for which you are looking -- the most critical questions you need answered.The organization in this level is paying special attention to know its potential and current customers. And the customers are being involved in this level customers have some awareness of organization and their needs are being valued. In this level limited knowledge transition to customer and capturing general knowledge about the customer are considered. Knowledge management components in this level are as table 4.

Table 4-Secound maturity level of CKM

Second level	
Strategy	Some Strategies and goals for managing the customers Knowledge are being set.
Human resource	Some Human resource related process such as education, motivation and admiration are being used.
Process	Survey process is being implemented in this level and the and the organization has access to customers opinions and tries to make an image of its brand in customers mind by feeding the customer by providing the information for customer to trust its brand, but all of this is just in theory and it process is not complete.
Technology and tools	Through some tools like Internet, website, database, interviews and document ware house, information and knowledge about the organization and its current products and services are being posted on the website, and the customers and employees have access to them. Also with these tools customers can gain some information.
Knowledge management process	At this level customers knowledge and needs has been totally identified and captured, there is a good effort and tools but yet not enough for saving this captured knowledge.
Customer Knowledge Management Process	In the second level of maturity organization is in the progress to identify the its customers
Customer Relationship Management Process	Organization is handling and managing the discontents.

Third level: Consultation

After gathering customer's information, identifying their needs and using semi appropriate technologies and tools, organization involves the customer more in the process after all the service and products are being made for the end user which is customer. Quality factor development or QFD is a structured approach to defining customer needs or requirements and translating them into specific plans to produce products to meet those needs. The "voice of the customer" is the term to describe these stated and unstated customer needs or requirements. And QFD and panel survey methods allow organization to relate customer directly to quality. In this level organization provides some information about market, provisions and also markets service and products for customers and takes their opinion and point of view for its product plans. In this level product and services are nearly based on customers taste.

Forth level: experience documentation

Customer's knowledge has improved, organization has a total awareness about importance of gaining customer knowledge's, and always seeks to capture more knowledge about itself and its competitors. Customer's experiences are being documented and used. Some special tools and techniques like mystery shoppers can help understanding the full experience of different customers. In this level managements support, sharing attitude and knowledge based culture can be noticed in the organization. The shared information from previous level is being used.

Knowledge management components in this level are as table 5.

Table5- third level of maturity

Third level	
Strategy	Customer strategies and knowledge management strategies are being integrated and aligned with organizations general strategies.
Human resource	Structural and cultural mechanisms are being used for employees Cooperationand Collaboration.
Process	In addition to complete implementation of survey and creating mental picture some knowledge sharing and Consultation methods such as open ended survey, customer feedback and focus groups are being almost performed.
Technology and tools	At this level of customer knowledge management, organization tries to use some tools such as websites, short messages and email to inform its customers of the new product and services and production steps.
Knowledge management process	Organizations that are in this maturity level of customer knowledge management, the identified and stored customer knowledge is being shared with organization to improve its activities in a way that are more satisfying for the customers.
Customer Knowledge Management Process	Organization has identified the it's customers and their knowledge and uses some tools to select the useful knowledge from captured ones and stores them.
Customer Relationship Management Process	In addition to managing of discontent the organization set the targets for implementing CEM and uses ongoing management.

Forth level: experience documentation

Table6- forth level of maturity

Customer's knowledge has improved, organization has a total awareness about importance of gaining customer knowledge's, and always seeks to capture more knowledge about itself and its competitors. Customer's experiences are being documented and used. Some special tools and techniques like mystery shoppers can help understanding the full experience of different customers. In this level managements support, sharing attitude and knowledge based culture can be noticed in the organization. The shared information from previous level is being used in the organization.Knowledge management components in this level are as table 6.

Forth level

Strategy	The whole knowledge management strategy is being implemented and Knowledge management goals achieved.
Human resource	Organization's employees has reached to a vast awareness of importance of managing customer's knowledge and in this organizations there are educational courses can be found.
Process	In addition to complete implementation of survey, creating mental picture and consultation methods, customer experience process are being well documented and semi implemented.
Technology and tools	Technic and tools used in level are mainly aiming at getting clear view of customer experience while using organizations services and products even before and after that, the whole Buying process from the beginning since the organization and the customers making first contact until the organization provides any kind of after sale services.
Knowledge management process	At this level customer Knowledge management process is almost complete. Now is the time for the customer Knowledge to increase by taking part in the whole production process and sharing its information with other customers in chat rooms, groups, wikis and etc.
Customer Knowledge Management Process	organization provides needed tools and technologies for the customer and the employees to share and applies the stored knowledge
Customer Relationship Management Process	At this level organization in addition to previous actions is integrating the CRM process

Fifth level: learning

At this level customers have an active part in value creating process and they are considered to be organizations partners. Only when a company or organization has engaged the customer at the maximum and as a part of the company in all of its process, it can claim that it has reached the final customer Knowledge management maturity level. At this level organization puts a special effort to make and use new Knowledge in the all of its parts and expects all the departments to innovate, extend new product and services and also making long term relationships with the customers. The only way to achieve these goals is by sharing new knowledge in all of the organization and to engaging the customer in development process. Innovation and learning culture makes the organization to commit to the constant improvement and to identify the tag lines and uses the innovation mostly in those areas. Knowledge management components in this level are as table 7.

Table 7-Fifth maturity level of CKM

Fifth level	
Strategy	At this level knowledge management strategy is completely aligned with the organization strategy and the customer Knowledge management strategy. Organizations Mission, vision, task and functions are related to the customer's knowledge management strategy.
Human resource	All kind of human resource for supporting CKM in the organization are being implemented like interest and incentive systems, staff training, personnel guardianship, personnel cooperation and strengthening the personnel.
Process	All of the previous process are implemented and the learning from customer process is complete, in this level relationship with profitable customers extends in order to granite their loyalty.
Technology and tools	At this level in addition to all of mentioned tools and technologies such as website, data warehouse, SMS, Searching tools, blogs, database, cookies, contact us, etc., some new tools for maximum involvedness are being used like online forums, complains management, suggestion management, feedback, registration data's.
Knowledge management process	All of knowledge management components are available and the knowledge management process is completely implemented, revealing the hidden knowledge and using it business and communication with customer is ideal.
Customer Knowledge Management Process	At the final level of CKM maturity level organization can have all the benefits by helping the customer to create and extend and use it for creating the products.
Customer Relationship Management Process	All of the CRM process in this level have been totally implemented.

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RESEARCH ARTICLE

Systematic and Distribution of Geckos in Iraq Systematic and Distribution of the Gekkonidae in Some Provinces of Central and Southern Iraq

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ABSTRACT

Iraq possesses varied climatic and geographical conditions that led to rich biodiversity but a comprehensive ecological and biological diversity survey work is still not possible in all areas of Iraq due to security concerns over much of the country, therefore an investigation on the occurrence of geckos in some provinces in Central and Southern Iraq was carried out for the period from September 2013 to October 2014. A total of 111 adults and sub adults specimens were collected and identified. The collected specimens represented three genera and six species as: one *Hemidactylus turcicus*, two *Hemidactylus persicus,* 15 *Hemidactylus flaviviridis,* 53 *Cyrtopodion scabrum*, 16 *Stenodactylus affinis* and 24 *Stenodactylus doriae*. This study was carried out in five provinces throughout central and southern Iraq, they are: Najaf, Babil, DhiQar, AL-Muthana and Basra.

Key words: Geckos, Hemidactylus, Cyrtopodion, Stenodactylus, Iraq.

INTRODUCTION

Little information is available in the international literature on the amphibians and reptiles of Iraq, and these are considered to be the least well known of the vertebrate groups. Some basic collecting has been carried out and check-lists of species are available (*e.g.* Schmidt, 1939; Allouse, 1955; Khalaf, 1959). The Biological Research Centre collected and studied reptiles, and published a monograph on the Gekkonidae of Iraq, but few other studies have been undertaken, and the status, distribution and habits of most species are poorly known.

More than 25% of all living genera and species of lizards are placed in the Gekkonidae, and much has been written in the last 30 years about their phylogenetic relationships. The genus *Hemidactylus* Oken, 1817, is a genus of the family of common geckos, also is one of the most speciose and a widespread group of geckos, distributed throughout much of the Old World tropics and subtropics as well as in the Mediterranean region and in the Americas. It has over 122 described species, newfound ones being described every few years (Uetz *et al*., 2013). Some species of *Hemidactylus* have undergone natural and anthropgenic long distance dispersal, followed by colonization of new areas, and among of them are among the most human commensal of all lizards. Human related translocations have resulted in some of these invasive lizards having an almost cosmopolitan distribution in tropical and warm temperature regions (Bauer *et al.,* 2006; Carranza and Arnold, 2006; 2012).

Gekkonid lizards of the genus *Stenodactylus* Fitzinger, 1826 are one of the most characteristic and abundant elements of the fauna of the arid and hyper-arid regions of Arabia and North Africa (Arnold, 1980). The genus comprises twelve species that are distributed in a more or less continuous range across northern Africa and Arabia, with an apparently isolated population in northern Kenya and extending around the Arabian Gulf to coastal southwestern Iran (Arnold, 1975; Sindaco,1984). Up to three species may occur at a single locality and, where such sympatry exists, resource partitioning is largely achieved by microhabitat segregation, with species occupying different soil types (Arnold, 1984). Gravel plains, hard sand and Aeolian soft sand all have their characteristic species that show specialized morphological adaptations. These include the presence of depressed and fringed toes, which increase the surface area and improve grip in the Aeolian sand dune specialists Stenodactylus doriae Blanford, 1874(Anderson,1999).Cyrtopodion scabrum (Heyden, 1827) rough scaled gecko, is the most widely distributed species in the genus, ranging from the African coastal side of the Red Sea, through the Arabian Peninsula, Iraq, Syria, southern Turkey, Iran, Afghanistan, Pakistan and localities in Rajasthan Desert, and India (Leviton *et al.,*1992).

MATERIALS AND METHODS

Geckos were collected at different localities in some central and southern provinces of Iraq, from 19th September 2013 to 16th October 2014. The locality data and habitat features were recorded for all the studied species. Most specimens were fixed by injection of 96% ethanol, and then preserved in 70% ethanol, the voucher specimens are deposited in the Razi University Zoological Museum (RUZM) in Kermanshah Province of Iran. Specimens were identified according to Khalaf (1959), Leviton *et al.* (1992), Anderson (1999), Rastegar-Pouyani *et al.* (2006; 2008) and using morphometric measurements, coloration, and pholidosis features (including number, structure, and range of scales and shields).

Statistical Analysis – The data were analyzed statistically by using SPSS version 14.0 and the maximum, minimum and mean were measured for all the specimens.

RESULTS AND DISCUSSION

A total of 111 specimens were collected in the study area including six species and subspecies belonging to three genera from the most diverse family Gekkonidae "Table 1", "Table 2". The distribution map of the studied areas, species and their photos are presented in Plates (1-3).

***Hemidactylus* sp.**

***H. flaviviridis* Ruppel, 1840** Yellow–bellied house gecko

15 adult male and females were collected from AL- Basra \ AL- Muftia ; AL-Salhia- Shatt el Arab- Kut el guam "Plate-2, Fig.-A", AL-Najaf \ AL-Kufa ; AL-Mishkhab "Plate-2, Fig.`s-E,F", Hilla\Showmali–Khagan , AL-Muthana – AL-Batthaa –AL-Bedoor and Dhi-Qar\ AL-Nasiriya "Plate- 2, Fig.`s -B,D". Apparently this species is strictly a house gecko in Iraq, found on both outside and inside walls and ceilings of inhabited and abandoned buildings. The mean, minimum and maximum of snout-vent length and tail length for male and female are 61.76, 55.26, 71.13; 45.61, 45.61, 45.61 for males and 58.85, 46.81, 72.00; 56.34, 47.42 and 74.65 for females. "Plate -3, Fig.-A".

***H. turcicus* (Linnaeus, 1758) Mediterranean gecko, Turkish warty gecko**

Single male was collected from one locality AL-Najaf \ AL-Kufa city, this small species is found on walls and ceilings in both inhabited and abandoned buildings .Snout vent of adult male is 32.42 mm , tail is cutten, and with 15 longitudinal series of dorsal white; venter white tubercles. Coloration is pinkish brown, light brown, sandy gray or sandy yellow dorsally; an indistinct dark streak from nostril to temporal region "Plate-3, Fig.-B".

***H. persicus* Anderson, 1872 Persian gecko**

Two female of *Hemidactylus persicus* was only collected from AL-Najaf\ AL-Kufa city and AL-Muthana\ AL-Batthaa – AL-Bdoor, were collected at night during the period when the rocky hills are almost completely denuded of vegetation and the seasonal streams long since dry, although some water remains in sinkholes and small caverns in gypsum formations. Mean of Snout –vent length is 64.12 mm and TL is 55.92mm. "Plate-3, Fig.-C".

If there is, little recent information about the herpetofauna of Iraq in general, then this is particularly true for the Marshes (Garstecki and Amr, 2011). Nader and Jawdat (1976) reported seven gecko species from southern Iraq (*Cyrtopodion scaber*, *Cyrtopodion heterocercum*, *Stenodactylus doriae* , *Stenodactylus sleveni* , *Bunopus tuberculatus* , *Asaccus elisae*, *Hemidactylus flaviviridis*, *Hemidactylus persicus*) .Two of these (*H. flaviviridis* and *H. persicus*) were also found by Al-Bawari and Saeed (2007) in the same region. To what extent any of these species occurred within the Marshes – as opposed to merely near them- was not reported.

***Cyrtopodion scabrum* (Heyden, 1827) Keeled gecko, rough scaled gecko**

Is a small, nocturnal ground gecko which is belonging to one of the most diverse family of lizards (Gekkonidae). The results showed that *Cyrtopodion scabrum* is widely distributed in Al Basra \ Al- Jubaila ; AL-Salhia -Shatt el Arab –Kut el guam, Al -Najaf in two cities: AL-Kufa and AL-Mishkab, Hilla\Showmali–Khagan and Thi-Qar\ AL-Nasiriya– Said Dekheel AlbuYosif village.

19 adult males , 26 females and 8 sub adults were collected from AL- Basra \ AL- Muftia ; AL-Salhia- Shatt el Arab- Kut el guam, AL-Najaf \ AL-Kufa ; AL-Mishkab, Hilla\Showmali–Khagan , AL-Muthana –AL-Batthaa –AL-Bedoor and Dhi-Qar\ AL-Nasiriya "Plate- 2, Fig.`s-A,C,D,E", from both inside and outside walls of inhabited and abandoned buildings and gardens, also *Cyrtopodion scabrum* found in the same building with *Hemidactylus turcicus* on the outdoor and indoor surfaces of both urban and rural houses as well as under bridges. Dorsal coloration is sandy gray with regular longitudinally arranged spots; The maximum, minimum and mean of SVL and TL of an adult male are 43.11mm, 35.35mm, 48.47mm; 54.53mm, 47.33mm, 68.21mm and 37.73mm, 21.83mm, 48.28mm; 47.47mm, 27.60mm, 60.01mm for female and 26.41mm, 20.25mm, 34.47mm; 34.89mm, 23.10mm, 46.68mm for sub adults respectively.

"Plate-3, Fig.-D". *Cyrtopodion* geckos are ecosympatric, primarily inhabiting crevices in arid badland mudflats, overgrown with sparse grasses etc., which support a variety of insect prey. These geckos are solitary and strongly territorial, occupying a particular hole, leaving it at dusk and returning at dawn. The hole is defended against intruders. The gecko usually stays close to the opening during the day, picking up occasional passing insects and retreating deep inside when disturbed. These geckos secondarily invade rocks and houses if available in the vicinity; however, *Cyrtopodion scabrum* is house gecko in small settlements of thatched stone huts, while other species invade inhabited houses, where are confined to the boundary walls, away from *Hemidactylus flaviviridis*, the dominant house gecko in the buildings. are inhabited by *scabrum* and along with sympatric *Hemidactylus* species *H. flaviviridis* and *H. persicus*.

***Stenodactylus* sp.**

16 adult males and females *Stenodactylus affinis* (Murray, 1884) are widely distributed in Al -Najaf \ Bahr Al- Najaf and Thi Qar \ AL-Nassirya – Said Dekheel Albuhbail village "Plate-2, Fig.`s-C,D), and 24 adult males and females of *S. doriae* (Blanford,1874) were collected just from Al -Najaf \ Bahr Al- Najaf. They were collected by using torch light at night. Bahr Al-Najaf is considered as a closed topographic depression at the eastern edge of the Western Desert. It has a total area of about (1200km²) with simple relives of low hills , it consists of two types of regions represent a low land covered with thick soil useful in growing the certain plants, and the other parts of the area are stony, which are utilized as sources of some building materials. The mean, minimum and maximum values of snout-vent length and tail length of *Stenodactylus affinis* are 45.82mm, 31.70mm, 58.55mm; 27.90mm, 18.04mm, and 35.07mm for males and 48.72mm, 40.36mm, 56.61mm; 32.62mm, 23.87mm, and 49.77mm for females respectively "Plate-3, Fig.-E). *Stenodactylus doriae* were collected just from Bahr Al-Najaf were a small plants were occur there .The mean, minimum and maximum of snout-vent length and tail length for males are 56.1mm, 50.5mm, 68.1mm; 53.02mm, 47.78mm, 61.58mm, and 56.3mm, 43.9mm, 66.2mm; 50.01mm, 40.78mm, and 58mm for females "Plate-3, Fig.-F".

Afrasiab (1987) collected a specimen of *S. affinis* for the first time in May 1979 from Kahla town, 20 km south of Amara (31□ 5□ N, 47□ 09□ E) altitude 10m where Tigris flows into the marshes. The identification of species was verified after being compared by the author with specimens of the collection of the California Academy of Sciences and Dr. Arnold of British Museum with the type specimens of the British Museum collection. He was also collected Specimens in Sept. 1985 from Aintamor (33□ 33□ N,43□ 29□ E) Altitude 30 m, 50 km west of Karbala, where their occurrence is of some significance in that the area located between the area of distribution of *S. grandiceps* to the west and the north, and that of *S. slevinii* to the east and the south of Aintamor. Disi (2011) find that Geckos inhabiting the Badia and south of Jordan and Wadi Araba are mostly nocturnal or active in late afternoons in order to avoid the most desiccating period or intense solar radiation *Stenodactylus doriae* . Some habitats are inhabited by several species which may be an evidence for resource partitioning and niche selection. Competition among species living in the same area may be reduced among them by size differences, behavioral changes and habitat utilization.

Most species in the family Gekkonidae are active (out of cover) nocturnally. Although a few species thermoregulation at night using rock crevices or human made heat source), the opportunity for heat gain during night time activity is limited. Thus the availability of suitable microclimates plays a large role in determining the onset and cessation of foraging (Angilletta, *et al.,* 1999). Another parameter affecting the distribution of lizards is vegetation. Types of vegetation are affected by several abiotic parameters: rainfall, type of soil, temperature, solar radiation, dew, altitude, etc. Vegetation cover is an important factor that influences the habitat microclimate. Moreover, vegetation may be utilized as a refuge or foraging site. Abundance and presence of certain species of lizards are mainly related to the availability of vegetation. Also, the following parameters affecting lizard distribution in Iraq are: dew, rainfall, mean daily range of temperature, and mean annual solar radiation.

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Table1. Summary of Localities and species occurrences.

Locality		*Hemidactylus* sp.			*Cyrtopodion scabrum*	*Stenodactylus* sp.		**Total Number**
		H.f	*H.p.*	*H.t.*		*S. affinis*	*S. doriae*	
Najaf	Bahr AL-Najaf				4	7	24	
	Kufa	2	1	1	15			
	Mishkhab	2			13			
Babil	Hilla	4			1			
	Showmali-Khegan				15			
Basra	AL-Muftia AL-Salhia- Shatt-al arab Kut-el-guwam	2 3	1		2			
AL-Muthana	AL-Bathaa\ AL-Bedoor \fahad bridge	2						
Dhi-Qar	AL-Nassiriya- Said Dekheel, Albu-Yosif village Said Dekheel, Albu-hbail village				3	9		
Sum of specimens		15	2	1	53	16	24	**111**

H.f: Hemidactylusflaviviridis, Hp: Hemidactyluspersicus, H.t.: Hemidactylusturcicus.

Table2. List of the localities of the collected species.

Locality	Species	Coordinates		
		N	E	Altitude\m
Al Basra - Al- Muftia	*Hemidactylus flaviviridis* *Cyrtopodion scabrum*	30□ 32' 27.7"	47□ 48' 56.5"	0 - 1
Al Basra -AL-Salhia- Shatt-al-arab Kut- el-guwam	*Hemidactylus flaviviridis* *Hemidactylus persicus* *Cyrtopodion scabrum*	30□ 30' 33.6"	47 □ 53' 12"	4
Al -Najaf \ AL-Kufa	*Hemidactylus flaviviridis* *Hemidactylus persicus* *Hemidactylus turcicus* *Cyrtopodion scabrum*	32□ 8' 05.7"	044□ 22' 17.3"	27
Al -Najaf \ Bahr Al- Najaf	*Stenodactylus affinis* *Stenodactylus doria*	31□ 53' 37.6"	044□ 16' 25.4"	15
Al -Najaf \ AL- Mishkhab	*Hemidactylus flaviviridis* *Cyrtopodion scabrum*	31□ 50' 28.4"	044□ 30' 13.7"	22
AL-Muthana Al-Bathaa\ AL-Bdoor \ fahad bridge	*Hemidactylus flaviviridis*	31□ 8' 50.8 "	45□ 59' 09.8□	20
Babil \ Hilla	*Hemidactylus flaviviridis* *Cyrtopodion scabrum*	32° 28' 43.2"	044° 24' 59.2"	159
Babil \ Showmali - Khegan	*Hemidactylus flaviviridis* *Cyrtopodion scabrum*	32 □ 22' 00.3"	044□ 46' 07.4"	148
Dhi-Qar\ AL-Nasiriya Al-Mutanazah	*Hemidactylus flaviviridis*	31□ 2 ' 52 "	046□ 14' 01.4"	9
Thi-Qar\ AL-Nasiriya Said Dekheel, Albu-hbail village	*Stenodactylus affinis*	31 □ 10' 40.1"	046□ 19' 39.2"	8
Thi-Qar\ AL-Nassiriya-Said Dekheel, Albu-Yosif village	*Cyrtopodion scabrum*	31□ 09' 29.3"	046□ 17' 23.5"	10

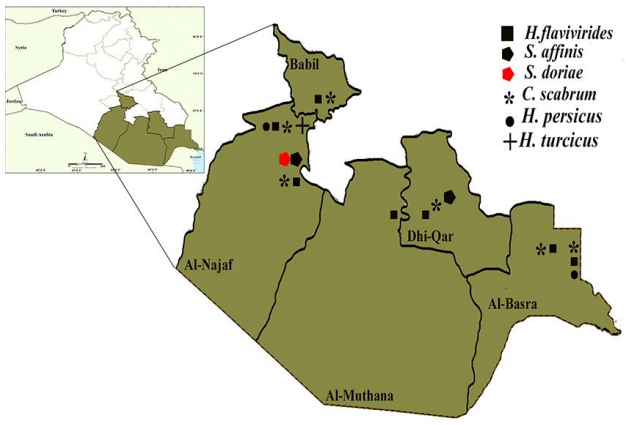

PLATE 1. Map of Iraq showing localities from which materials were collected.

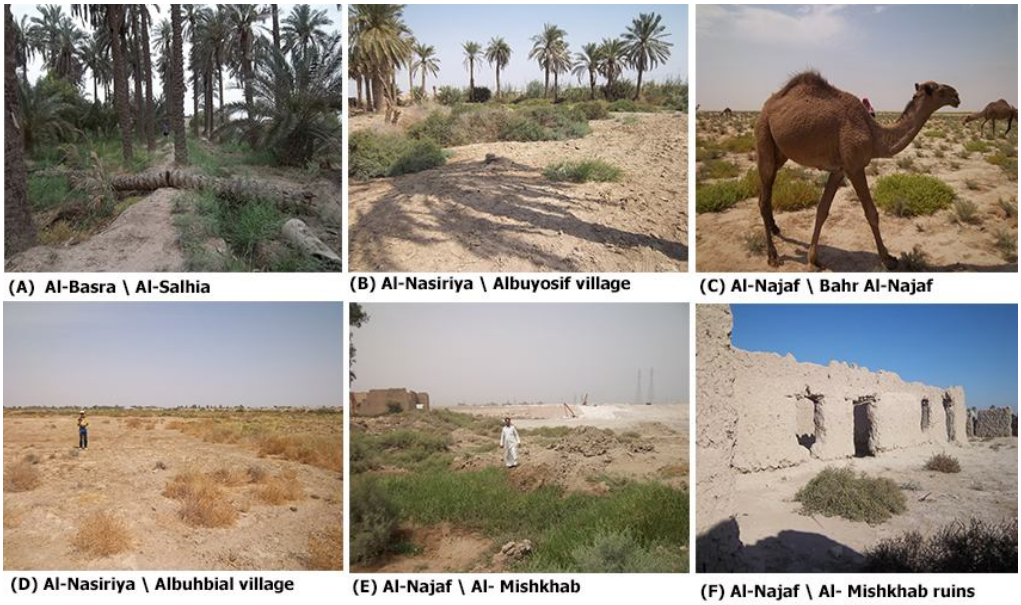

PLATE 2. Habitats of collected materials: Fig. (A) AL-Basra \AL-Salhia, Fig. (B) Dhi-Qar\AL-Nassiriya Said Dekheel ALbu-Yosif village, Fig. (C) AL-Najaf\Bahr AL-Najaf, Fig. (D) Dhi-Qar\AL-Nassiriya Said Dekheel ALbu-hbail village, Fig. (E) AL-Najaf\ AL-Mishkhab, Fig. (F) AL-Najaf\ AL-Mishkhab ruins.

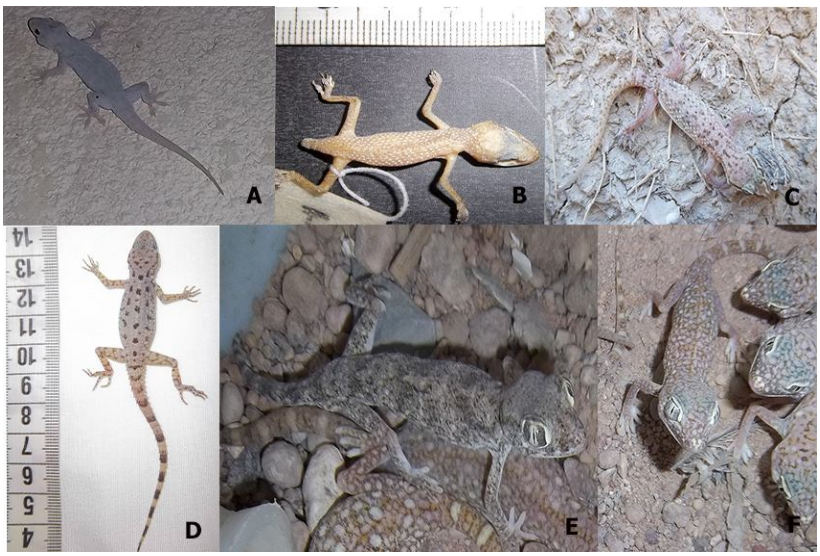

PLATE 3. Fig. (G) *Hemidactylus flaviviridis*, Fig. (H) *Hemidactylus turcicus*, Fig. (I) *Hemidactylus persicus*, Fig. (J) *Cyrtopodion scabrum*, Fig. (K) *Stenodactylus affinis*, Fig. (L) *Stenodactylus doriae*.

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RESEARCH ARTICLE

Discussing the Effect of Complexity of Supply Chain on the Performance of Iran's Automotive Industries

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ABSTRACT

Since the complexity of supply chain is one of the most important concerns for managers, exact and appropriate comprehension of complexity patterns and optimized realization of their effects on an organizations' performance can provide the context for development of the whole societies' growth, industries, economy and business. In this paper, the effects of these complexities on the performance of Iran's major automotive production companies are assessed through implementation of supply chain complexity model in addition to field studies. The results indicate that all initial, internal production and the final complexities of the supply chain have meaningful negative effects on the performance of the subject industrial factories. This research has established a connection between the literature of systems complexity and rules of supply chain in order to provide a definition of supply chain complexity and to provide a field test for its assessment. The final section of the research includes suggestions for future researches.

Key words: Supply chain management, system complexity, supply chain complexity.

INTRODUCTION

During the past few years there have been significant changes in comprehension of optimization of environmental and social performance in firms. The growing procedure of globalization has intensified business competitions and has led to decline in global gross profits of many industries. In global economics, the managers of supply chains should be quiet expert in controlling interrelated relations which bonds the supply chain. According to SCM, it's not suitable for different businesses to implement domains of operational management, source finding and patronage separately or in weak bonds as an advantage. They should manage and develop information, physical flows and relations which bond these domains and also relates them to upstream and downstream associates. For instance, life cycle of the products has become shorter, level of diversity of products has increased based on costumers' orders and supply chain associates have been more disperse in terms of geographic distances. As a result, firms are after establishing mutual relations with their associates in supply chain in order to have more competitive advantages, flexibility and better efficiency. It is obvious that management of supply chain is a rather challenging mission and most experts believe that supply chain is a complex system. Although there have been much attention paid to reasons for necessity of deployment of gamut and depth of supply chain activities in companies, it was just recently that scholars and firms' managers noticed the losses resulting from increase of complexity in supply chain .

Supply chain complexities have always been a matter of concern for managers; as a result we can deploy the necessary contexts for growth and development of economic development of our society through appropriate comprehension of complexity patterns and optimized realization of their effects on firms' performance. Full and exact comprehension of research findings seems extremely necessary.

In this research, some concepts and terms of systems' sciences are implemented in order to define the complexity of supply chain and its different dimensions which make it a truly complex system. For field defining of supply chain complexity, the effects of different sources of complexity including initial complexities of the chain, internal production and final complexities of the chain on Iran's automotive industries' performance are discussed. Obtained results will define the influence of complexity sources on the performance of Iran's automotive production industries.

Literature

Initially, a brief definition of supply chain and its management is provided for the purpose of understanding these concepts and next, the system's complexity literature and its implementation in supply chain's complexity literature are provided.

Supply chain and its management

Producers have always been after establishing long term connections with their suppliers in order to supply their required technologies and valuable sources, benefit from suppliers' expertise and capabilities, and control them and to increase the quality and optimization of their products. Companies who have mutual relations will benefit the advantages of higher service quality, better visibility, more flexibility, more customer satisfaction and reduction of supply cycles.

Nowadays, in dynamic economic environments, many companies have noticed that traditional business models require reassessing which could be carried out through increased partnership among associates and sharing more information in associates' businesses for the purpose of preventing the supply flows from collapsing. It is obvious that associate companies are more successful compared to sole companies. Taylor vindicates the theory that competition have moved towards supply chains in new economy. Supply chain is a network consisted of processes

and activities which create value for the final consumer as products and services [9]. In order to obtain competitive advantages, companies require supply chain management in existing dynamic economic environments. Supply chain management is a concept emerged from manufacturing industries. This concept is developed from innovations such as JIT and TQM. Supply chain management is a holistic and strategic approach for management of demand, purchase operation and provisions processes.

System complexity

Complexity is discussed in wide range of sciences including philosophy, physics, engineering and management. In addition to this, many questions remain regarding the different definitions of constituents of a complex system. Results obtained from aforementioned discussions are mostly implemented in studying, researching, predicting and controlling amorphous systems and organizational theory literature. Such discussions have also found a way in the domain of supply chain management.

Supply chain managers must acknowledge that complexity is a key managerial issue and since its related definitions have been discussed by numerous authors, there is a wide range of definitions available for this issue. Several basic researches are mentioned in organizational theory literature with concentration on studying, predicting and controlling amorphous systems.

By a complex system, we generally mean a system which is consisted of several constituents which interact in a complex manner. This complexity-countless constituents two dimensional schema can also be found in another definition. Complexity refers to two dimensions of the system: A) mathematical construction of irresolvable elements of processes' sub systems and B) the manner in which elements are connected to form a system.

A complex system is a system which includes one or more than one of the following properties

1) Meaningful interactions 2) Numerous elements 3) Non-linearity 4) Convergence and fragile relativity and 5) Heterogeneous and antithetical limitations. The last three elements are related to high level of complexity since these properties make prediction more difficult over time. The non-linearity property is emerged when system response is irrelevant to the input. The two last properties emerge when some parts of the system are unreachable by other parts. This phenomenon could be a result of lack of convergence or existence of heterogeneous limitations which itself is developed through transpiration of one or some parts of the system out of the central control.

Complexity of supply chain

Supply chain is highly complex. Even with existence of such a high complexity to the supply chain, it can still be operated by means of three distinct parties: supply chain processes, supply chain network structure and management components.

Complexity of supply chain is a level of dynamic and detailed complexities (detailed complexity is defined as a number of distinct elements or components which make up a system, while dynamic complexity refers to lack of ability to predict the reaction of the system towards a set of input and interrelations between countless parts that make up a system) which is shown by products, processes and relations which create a supply chain.

Wide distribution networks can be regarded as a type of supply chain management. This type of complexity is a by-product of wide internal relations of supply networks. In this location, most suppliers are connected to multiple

supply chains which finally lead to production of several distinct good which are most often unpredictable, to be consumed by the end users.

Supply chain complexity may also emergewithin factories (what is referred to as internal complexity), or even through relationship of factory with associates at the beginning or the end of the chain (initial and final complexity of the chain).

Complexity of the end of the chain

Complexity of the end of chain is a level of dynamic and detailed complexity which is originated from industrial facilities of factories at the end of the chain. Its potential causes include number of costumers, heterogeneity of customer needs, products' average life cycle and demands' variability.

Complexity of the outset of the chain

Complexity of the outset of chain is defined by a level of dynamic and detailed complexities caused by industrial facilities in supply layer. Its potential causes include: number of connections with the supplier to be managed, delivery time, possibility to trust suppliers and source finding range.

Complexity of internal production

Complexity of internal production is defined as a level of dynamic and detailed complexities which are evident within products', services' and control and programming systems' industrial facilities. Its potential causes include number of covered sections and products, all types of industrial processes and stability of industrial programs' timing in different periods.

Supply chain and performance

Performance of supply chain management is known as the main stimulus for the performance of the entire factory. Many studies indicate that there is a direct relation between relations and partnership in supply chain and performance optimization. Companies which have long term relations depend on relation oriented exchanges and trades which lead to increase in profits in trades and maximizes their profits.

Measurement of performance for the company means optimization of effectiveness of supply chain and critical efficiency. There are several factors for measuring performance of a company among which it can be referred to level of profitability, customer satisfaction, market performance condition, products and services quality, evolution in companies' physical and incorporeal capitals and etc. each researcher choses his or her desired factors depending on the type of their research. Since our purpose is to discuss the effect of supply chains' complexity on Iran's major automotive manufacturing companies, we have chosen factors of accessing timing schedule, customer satisfaction level and factories' competitive performance in market.

Research hypotheses

1. Complexity of the onset of supply chain has negative effects on performance of automotive manufacturing factories.
2. Complexity of internal production has a negative effect on performance of automotive manufacturing factories.
3. Complexity of the end of supply chain has a negative effect on performance of automotive manufacturing factories.

Research Methods

In order to discuss the effect of complexity of supply chain on industrial factories' performance, we selected a society which features both dimensions of industrial factories and factories with advantageous technologies. Since the engine for every countries industry is its automotive manufacturing industry, we decided to select the large automotive manufacturing industry of Iran in order to verify existence of complex supply chains among them. This sample includes six automotive manufacturing companies (IKCO, SAIPA, Bahman Group, ZAMIYAD, IKCO DIESEL and KERMAN Motors) which are randomly selected from the list of automobile manufacturing factories.

With respect to essence of the subject, questionnaires are used in this research. This questionnaire is based on Likert scale in a way that options are respectively arranged from 1(very low / least importance) to 9(very high / most necessary). The questionnaire was exposed to some CEO's of aforementioned companies in order to approve the validity. Also for the purpose of scrutiny of questionnaires' stability, prior to distributing the questionnaires among subject factories, a number of these questionnaires were distributed among smaller factories (Rafsanjan Industrial Park) and the results indicated high stability of the questionnaire (table.1)

The questionnaire includes 39 questions five of which are related to the complexity of the onset of the supply chain, eight related to complexity of internal production, five related to complexity of the end of supply chain and 21 are related to performance (4 questions are related to accessing timing schedule, 12 are related to level of competitive performance and five related to customer satisfaction level).

12 questionnaires were distributed among different managers and authorities of each company. Ultimately after distributing 72 questionnaires among six aforementioned automobile manufacturing companies, unfortunately only 57 of these questionnaires were collected back due to lack of cooperation of a number of managers (8 from IKCO, 10 from SAIPA, 11 from BAHMAN Group, 9 from ZAMIYAD, 8 from IKCO DIESEL and 11 from KERMAN Motors).

Since in this research the effect of one element on the other is proposed and the relation is one way, regression and correlation analyses are implemented for data analysis (SPSS).

Data analysis

In this section, first we try to analyze correlation between variables and then we will try to analyze research assumptions through regression analysis separately. With respect to results of table 2. Negative correlation is obviously evident between each of the three parts of complexity (complexity of the onset of chain, internal production and end of the chain) and performance.

Analysis of first hypothesis

First hypothesis suggests that high levels of complexity of supply chain's onset, has a negative effect of automobile manufacturing factories. With respect to significance level of the test (subjects' significance level is less than 0.01) the first hypothesis which suggests negative effect of complexity of the onset of chain on performance of automobile manufacturing factories is approved and accepted (Table 3.)

Since populations' regression line function is $y = \alpha + \beta x$, it is obvious that β indicates the type of relation between dependent and independent variables. As we can see in table 3, it is the coefficient of independent variable which means that the more level of complexity in the onset of the chain increases, the more declines in Iran's automobile manufacturing factories' performance are suffered.

With increase in the number of suppliers, physical and information processes and relations which must be managed by the factory also increase. Change in the number of suppliers and products' delivery time leads to collapse of timing schedules for required material. This issue has effects on cohesion of process of production. In automobile manufacturing factories, all sections are connected to each other like chain loops. In case of emergence of problems in raw material supplication section, production lines suffer from delays, work force is wasted and factory bears losses. As a result, efficiency is declined and the factory will no longer be accountable for its customer demands.

It is obvious that with deployment of source finding range and dispersion of suppliers on one hand and decline in trust in on time delivery of goods on the other hand lead to increase in uncertainty in programming and makes it difficult to manage such complex relations.

Analysis of second hypothesis

The second hypothesis suggests that high level of complexity in internal production leaves a negative effect on automobile manufacturing companies' performance.as we can see in table 4; significance level is less than 0.01. This information approves the second hypothesis suggesting a negative effect of complexity of internal production on performance of automobile manufacturing factories. With respect to table 4; after doing calculations, the coefficient of independent variable is obtained as negative which means that as the level of complexity in internal production increases, Iran's automobile manufacturing factories' performance declines?

The reason for negative effect of internal production complexity on performance is that with increase of sections and covered products, the variety of relations and activities to be managed increases. A brief look at organizational diagram of subject factories before and after introduction of a new product reveals everything. Clearly, as more complex the products and their related production process becomes, the complexity of relations among them also increases and it becomes more difficult to manage this relation. Our results indicate that also the performance of industrial unit declines.

Analysis of third hypothesis

Third hypothesis suggests that high level of complexity at the end of supply chain has a negative effect on automobile manufacturing factories. With a brief look at table 5; it can be seen that third hypothesis suggesting a negative effect of complexity of the end of supply chain on automobile manufacturing industries, is approved and accepted.

In nowadays' competitive world, customers are considered as highly important parts of supply chain. End users of all goods and products are sources of benefits for all the chain, as a result customer relations management becomes significantly important. Firms which are faced with several costumer demands due to type of activity or market condition, have already noticed the effect of variety in their needs and heterogeneity of these needs and requirements. According to bullwhip effect of demand fluctuations, with moving from the end towards the beginning of the supply chain, severe changes are carried out in the chain. As result, with increase of changes in demands, number of customers and heterogeneity of their needs, efficiency of factories is declined and on the other hand, decline in average life cycle of the products also intensifies this complexity. Our research findings approve these statements.

CONCLUSION

In today's' economy, competition has moved toward supply chain. Companies which are able to manage supply chain well are considered as successful companies. Industrial factories must preserve their relations with their customers and suppliers in order to stay competitive. This fact leads to decrease in complexity of their supply chain and as a result, their industrial performance and competitiveness increases.

High complexity in supply chain is like activity in a chamber filled with smoke and prohibits effective activity and adds uncertainty to obtained results. Some company might have a high capacity but as a result of its intertwined confusing relations with its customers and suppliers, is not able to improve its working efficiency.

In this research we have tried to show the negative effect of complexity on automobile manufacturing industrial factories in Iran. Results have verified this fact and opened the way for future researches. In the following there are recommendations in this context: 1) with respect to possibility of diversity of complexity in different industries, it is recommended that future researches focus on differences between complexity in different industries and effect of these differences on industrial factories' performance. 2) it is obvious that activity in uncertain environments requires appropriate strategic decisions to be made, and since uncertainty increases complexity, it is recommended to discuss the effect of making different strategic decisions by companies on their related supply chains' complexity. 3) to what extent factories' decision makers are familiar with complexity of the supply chain? Future researches can be focused on the effect of managers' decisions on complexity of the supply chain and also effects of their unawareness from results of such decisions. 4) It is recommended to discuss the effect of geographical dispersion, different cultures and macro economics' different policies on complexity of supply chain and performance of industrial units.

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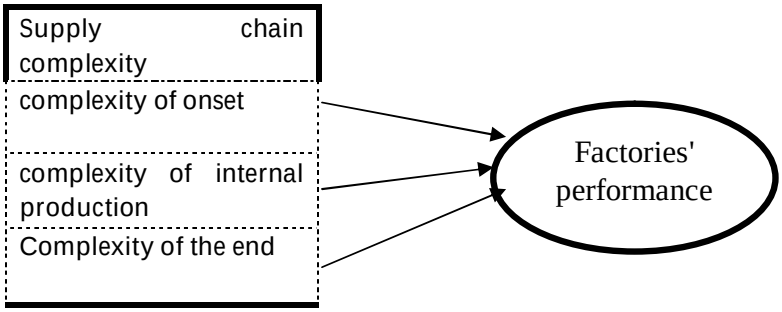

Fig 1: Conceptual model: effect of supply chain's complexity on factories' performance

Table 1. Questionnaires' stability

performance	Complexity of supply chain	Complexity of the end of supply chain	Complexity of internal production	Complexity of onset of supply chain	Elements
0.809	0.907	0.710	0.797	0.777	Stability

Table 2. Correlation among research variables

		X_1	X2	X3	
X1	Pearson Correlation	1	.822**	.737**	-.671**
	Sig. (1-tailed)		.000	.000	.000
	N	57	57	57	57
X2	Pearson Correlation	.822**	1	.750**	-.699**
	Sig. (1-tailed)	.000		.000	.000
	N	57	57	57	57
X3	Pearson Correlation	.737**	.750**	1	-.645**
	Sig. (1-tailed)	.000	.000		.000
	N	57	57	57	57
Y	Pearson Correlation	-.671**	-.699**	-.645**	1
	Sig. (1-tailed)	.000	.000	.000	
	N	57	57	57	57

X1: Complexity of the onset of chain (independent variable)
X2: Complexity of internal production (independent variable)
X3: Complexity of the end of chain (independent variable)
Y: Performance (dependent variable)

Table 3. Regression model of the first hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.396	.420		19.973	.000
	X_1	-.509	.076	-.671	-6.711	.000

Table 4. Regression model of second hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.125	.354		22.943	.000
	X_2	-.551	.076	-.699	-7.254	.000

Table 5. Regression model of third hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.259	.428		19.296	.000
	X_3	-.481	.077	-.645	-6.266	.000

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RESEARCH ARTICLE

On the Occurrence of the Species Group of Whip Snakes: *Coluber jugularis* Linnaeus, 1758, *C.caspius* Gmelin, 1789 and *C. schmidti* Nikolsky, 1909 (Serpentes: Colubridae) in Southern Iraq

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ABSTRACT

The occurrence of the whip snake complex: *Coluber jugularis* Linnaeus, 1758, *Coluber* cf *caspius* Gmelin, 1789, and *Coluber* cf *schmidti* Nikolsky 1909 have been reported from AL-Mashkhab district, Najaf Province, Iraq. In this study new distribution locality and morphological characters are reviewed. Ten of the pholidotic characters and 11 morphometric measurements were studied in 20 specimens of whip snakes. According to the result, and considering the principle of priority, we concluded that the populations of whip snake in the study area are *Coluber* cf. *jugularis* Linnaeus, 1758, *Coluber* cf. *caspius* Gmelin, 1789 and *Coluber* cf. *schmidti* Nikolsky, 1908. These specimens need more comprehensive study to clarify their exact taxonomic status and phylogenetic relationship using more detailed morphological traits, ecology, and molecular studies.

Key words: Whip snake, *Coluber jugularis*, AL-Mashkhab district.

INTRODUCTION

Iraq is an area of diverse physical features such as desert marsh and mountain, and also a faunal rendezvous (Corkill, 1932). Three natural physiographic regions are recognized in Iraq: (1) the eastern section of the Arabian plateau which forms the deserts of the west and south, (2) the valleys of the Euphrates and Tigris which, between the Arabian and Iranian plateaus, extend from the highland of Asia Minor to the Persian Gulf, and (3) the arc of the Zagros Mountains through which the Turkish and Iranian boundaries are marked (Hatt, 1959).

Because of this considerable ecological diversity, the fauna of Iraq including its reptiles is of great interest. Species that are typically European, African, and Asiatic are all found, and in the water of the Persian Gulf species occur that range to the far East and Australia (Corkill, 1932), and few forms are reported from neighboring countries, in the close vicinity of the Iraqi borders, and may still be of doubtful occurrence in our own area (Khalaf, 1959).

The information on the biodiversity of the terrestrial ecoregions of Iraq comes from WWF (2006), UNEP-WCMC (2009), Burnham and Bachmann (2009), with little current information about mammals, as well as insects, amphibians, and reptiles, that remain poorly studied. The available compilations of snakes occurring in Iraq are that of Boulenger (1920), Corkill (1932), Khalaf (1959), Reed and Marx (1959), Mahdi and Georg (1969), Joger (1984), Leviton *et al.* (1992), Afrasiab *et al.* (2012), Lahony *et al.* (2013), Mohammad *et al*. (2013).

Detailed descriptions are available for the genus *Coluber* (senso lato). Adults are long and stout; species of this genus are reaching more than 2 m in long, with robust bodies. Head distinct from neck, covered by large, symmetrical shields above; snout projecting; eyes large with rounded red pupils; loreal as long as deep; eight supralabials, fourth and fifth entering the eye, and nine to ten lower labials. At least one (occasionally two) large preocular and one small subpreocular, the latter partially inserted between two upper labials; two postoculars; posterior chin shields as long as or longer than anterior shields; apical pits present; ventral plate large, extending across belly, dorsal scales in 19-33 longitudinal rows at midbody, subcaudals paired; anal plate usually divided; maxillary teeth 12-20 (for southwest Asian and Asian species), increasing in size posteriorly, the last two enlarged and separated from the rest by a small space, teeth without grooves (Latifi, 1991; Leviton *et al.,* 1992; Amr and Disi, 2011).

Coluber jugularis Linnaeus 1785 with Synonym Zamenis gemonensis, var. asianus, Boettger 1880 (Boulenger, 1920), is distributed in southwest Asia. This exceedingly handsome snake is found almost exclusively in the palm groves edging the rivers. It does not appear to acquire its pure black coloration until over 4 feet in length. It is a swiftly moving creature, climbing palm trees with ease and biting with accuracy and animus when handled. They are thirsty creatures drinking often and copiously from a saucer, occasionally immersing the whole mouth in the process (Boulenger, 1920). Leviton et al. (1992) refrained to split the genus Coluber. Schätti (1988) removed C. jugularis, C. caspius, and C. schmidti and placed them in the genus Hierophis along with C. gyarosensis, C. laurenti, C. spinalis, and C. viridiflavus. Coluber jugularis is included in *Dolichophis* following Nagy *et al*. (2004), rather than *Hierophis. The population from Iraq is referred to C. j. asianus.* (Corkill, 1932; Khalaf, 1959). *Currently the genus Dolichophis has been accepted by numerous herpetologists in the Middle East as a valid name (*Göçmen *et al., 2008).* In his treatment, Latifi (1991) considered C. schmidti and C. caspius as subspecies of C. jugularis. Disi (1985) reported on a specimen referred to as Coluber caspius schmidti collected from Jawa northeastern Jordan. However, Baran (1976), Ščerbak and Bohme (1993) considered them as separate species as do the current authors. Abu Baker et al. (2002) provide molecular evidence that confirmed the separate identity of C. jugularis compared to C. caspius. In this paper, we present new locality for two snake species (*Coluber* cf *schmidti* and *Coluber* cf *caspius*) with their morphological features.

MATERIALS AND METHODS

Our field work carried out from 13th of August to 17th of October 2014. The study area is located in AL-Mashkhab district, Najaf Province, Iraq, 150 km south of Baghdad, (44°30' 13.7'' E and 31°50' 28.4□□'' N) with and elevation of 22m above sea level (Fig. 1). A total of 20 specimens were collected in the study area encompassing 12 *Coluber schmidti* Nikolsky, 1909, six C. *caspius* Gmelin, 1789 and two *Coluber jugularis* Linnaeus, 1758. All the specimens were found from the same area, AL-Mashkhab district an arable lands which have been under cultivation (Matar, 2013; Al-kazaz, 2014). We also collected three specimens of *Malpolon monspesulanus insignitus* and observed the following lizards in the same area as sympatric: *Trachylepis, Cyrtopodion,* and *Hemidactylus.*

Collection of specimens: Most snakes were captured by using snake catcher stick and by pinning the neck with a forked stick. All specimens were collected while they were actively moving and placed within a special sack, and transferred to the laboratory of Animal Biosystematics, Department of Biology, Razi University for identification and complementary studies.

Fixation, preservation and identification of samples: Four specimens still alive and the remainder were fixed with 96% ethanol and later preserved in 70% ethanol and kept in the Razi University Zoological Museum (RUZM). Metric measurements and meristic characters were recorded according to the previous literature (Liveton *et al.*, 1992; Latifi, 2000; Ananjeva *et al*., 2006; Amr and Disi, 2011; Disi, 2001) presented in Table 1. The ventral plates were counted. Snout-vent length and tail length were measured to the nearest millimeter using a ruler. Head length was measured as the distance from the back of the skull to the tip of the snout using a digital caliper to the nearest 0.01mm. To record color pattern features, animals were photographed while alive in their natural environment and in the laboratory. The geographical coordinates of the sampled specimens computed with a Garmin GPS device.

Sex determination (Cloacal Popping): By applying pressure to the base of the tail it is often possible to evert the hemipenes of male snakes (Fig. 3B). This method is preferred for sexing small snakes and neonates (Gregory, 1983) as large males are difficult to evert and excess pressure may cause injury.

Statistical analysis: Descriptive statistics of Pholidotic characters and Biometric measurements of all specimens included in the study was performed by using SPSS 20.0

RESULTS AND DISCUSSION

Coluber jugularis Linnaeus, 1758. Adults are long and stout. Eye with rounded pupil. Pholidosis characteristics and morphometric measurements of our specimens are summarized in "Table 2". A photograph of the specimen is given in "Fig. 2A". The dorsum of our specimen is bright black with some red maculations. These maculations are also apparent on the head plates. The first 5 infralabials in contact with anterior chin shield; subcaudals divided "Figs. 2B-E". *This snake has been recorded from Egypt, the Levant, Iraq, and Persia. In Iraq specimens have previously been recorded from Baghdad, Basra,* Amar, and Fallujah. In 1928 and 1929 the following additional recorded were obtained: Baghdad, Nasiriyah. Several more specimens came from the Hinaidi area of Baghdad. The snake appears to be well known all over Iraq, and is generally spoken of as the "urbid" or "arbid". These names have been heard either in reference or application to this snake in Basra, Baghdad, Nasiriya, Baquba, Fallujah, Mosul, Najaf, Deltawa, and Suq –as Shuq (Corkill, 1932).

Disi (1985) stated that *C. j. asianus* is associated with dense vegetation of farming areas. This species was never seen or collected from arid regions, observed after sunset in farms near food storage areas (El-Oran *et al.,* 1994). An adult black *Coluber jugularis* was collected in the Kuwait Desert in May 1996 (Al-Mohanna *et al*., 1997). Thus, it is likely that this species will eventually be found in these arable lands which have been under cultivation.

Our specimen has blood red colored ventrum and sides of neck, spotted with black, gular region and labials yellow. The reddish coloration on dorsal scale and head plate possibly indicate that this color- pattern as part of its geographic variation or that this specimen is a hybrid between *C. j. jugularis and C. schmidti*. This result suggests that this area may be a contact zone between these two species. Leviton *et al.* (1992) mention *C. caspius C. schmidti* the snake's with doubtful occurrence in Iraq.

Coluber caspius Gmelin, 1789. The ventral coloration may range from a whitish-yellow to a deep orange. A photograph of the specimen is given in "Fig. 3A". Its back and sides are covered with 19 rows of scales, the center of each yellow, and the sides dark, because of that it looks like light and dark longitudinal stripes "Fig. 3C". Pholidosis characteristics and morphometric measurements of our specimens are summarized in Table 2. The large Whip Snake *Coluber caspius* Gmelin, 1789 is distributed on the Balkan and in adjacent west Asia (Frank *et* al., 2012).

Incidentally, Sindaco *et al*. (1995) recorded *C. caspius*, based on a road killed specimen collected between Jarash and Mafraq, 6 km E of Rihab (32°19'N, 36° 06'E, Jordan). The Balkan Whip Snake *C. caspius* was sampled at the foot of the Bansko brdo Hill in Croatia on the stations of Zmajevac In addition to this new finding for Croatia, there are also new findings for the area of Montenegro, Serbia and in the vicinity of the border with Albania (Krčmar *et al*., 2007). Our specimens with the ventral coloration may range from a whitish-yellow to a deep orange. Their back and sides are covered with 19 rows of scales, the center of each yellow, and the sides dark, because of that it looks like light and dark longitudinal stripes. The morphological features and color pattern characteristics of our specimens generally agree with literature data (Latifi, 1991). They were closest to *C. caspius* and so we can identify them as *Coluber* cf. *caspius*.

Coluber schmidti Nikolsky, 1909. A photograph of the specimen is given in "Fig. 4A". The most distinctive character of this snake according to Abu Baker *et al*. (2002) is the color and background of the dorsal scales; the scale center is red and dark and the outer borders of dorsal scales are white, giving the appearance of very fine longitudinal stripes "Fig. 4B". Our specimen lacks reddish color, the general dorsal coloration is olive green with small slender dark spots that extend along the entire dorsal sides. Two apical pits, brown in color, are present on each dorsal scale and they are clearly visible. However, only on the posterior part of the body these spots are arranged in longitudinal rows, the ventral side is yellow to orange, with only the underside of the neck and the lateral part of the venter with dark spots. The upper labials are yellow; the preoculars are also yellowish "Fig.`s 4C-E". Pholidosis characteristics and morphometric measurements of our specimens are summarized in "Table 2".

The distribution area of Schmidt's Whip Snake extend from the southern Caucasus and southern Turkmenia over southern and eastern Turkey and northern Iran as far as northern Syria (Ščerbak and Böhme 1993b). In Jordan*, C. schmidti* has been reported only once from Jawa, on the southernmost slopes of Djabal Duruz Jawa overlooks a basalt desert that extends southwards to Saudi Arabia. As this snakes has not been reported from Iraq and there are only two records from North Syria (Disi *et al*., 2001; Abu Baker *et al*., 2002).

Schmidt's Whip Snake occurs sympatrically with *C. ravergieri* in Syria and Jordan, and with *C. (Hierophis.) caspius in* Turkey (Ščerbak and Böhme, 1993b). Our specimen lacks reddish colors; the general dorsal coloration is olive green with small slender dark spots that extend along the entire dorsal sides. Two apical pits, brown in color, are present on each dorsal scale and they are clearly visible. The scale center is dark and the outer borders of dorsal scales are white, giving the appearance of very fine longitudinal stripes. However, only on the posterior part of the body these spots are arranged in longitudinal rows, the ventral side is yellow to orange, with only the underside of the neck and the lateral part of the venter with dark spots. The upper labials are yellowish with reddish brown posterior margins. The preoculars are also yellowish. Morphological features and color pattern characteristics of our specimens generally agree with literature data (Disi *et al*., 2001; Abu Baker *et al*., 2002; Göçmen *et al*., 2008; Amr and Disi, 2011. According to Gruber (1989), Ščerbak and Böhme (1993a) this snakes has variable colors during different stages of its life. The background coloration is often red-brown to brick red. Juvenile specimens bear dark spots. In the anterior

part of the body the spots are arranged forming a pattern of cross bars. These patterns persist among juveniles and young. Adults up to the total length of 140 cm. They were closest to *C. schmidti* and so we can identify them as *Coluber cf. schmidti*

CONCLUSION

In conclusion, we contributed to the knowledge of snake distribution in southern Iraq with new locality records. We have recorded *Coluber* cf. *caspius* and *Coluber* cf. *schmidti* from AL-Mashkhab County, Najaf Province, Iraq, for the first time. Additionally, our new southernmost record of *C.* cf. *caspius* and *C.* cf. *schmidti* extends their distribution and shows a tendency to shift border of distribution southwards representing a considerable range extension. Our findings show that taxonomy and distribution of snakes in Iraq need attention and deserve further studies.

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Table 1. Description of the most informative pholidotic characters and biometric measurements in *Coluber jugularis*, *C. caspius* and *C. schmidti* from AL-Mashkhab district, Najaf province, Iraq, 150 km south of Baghdad.

NO.	Character	Abbreviation
1	Preocular	Pro
2	Postocular	Poo
3	Number of supralabial scales	Suplab
4	Number of sublabial scales	Sublab
5	Temporals	Temp
6	Posttemporals	Potemp
7	Number of ventral scales	VS
8	Number of dorsal scales	DS
9	Number of subcaudal scales	ScdS
10	Loreal scales	LorS
11	Snout-vent legth	SVL
12	Tail length	TL
13	Anal plate width	WAP
14	Caudal base width	WCB
15	Distance between the nostril	NND
16	Eye diameter	ED
17	Loreal length	LorL
18	Head length	HL
19	Head width	HW
20	Anterior inframaxillar (chin shield) length	ACS
21	Posterior inframaxillar (chin shield) length	PCS

Table 2. Descriptive table including minimum, maximum, mean, standard error and standard deviation in 21 morphometric and meristic characters in *Coluber jugularis, Coluber cf. schmidti* and *Coluber cf. caspius* included in this study

Male												Female							
Coluber jugularis (N=2)				*Coluber cf. schmidti* (N=3)				*Coluber cf. caspius* (N=2)				*Coluber cf. schmidti* (N=3)				*Coluber cf. caspius* (N=10)			
Range	Mean	Std. Error	Std. Dev.	Range	Mean	Std. Erro	Std. Dev.	Range	Mean	Std. Erro	Std. Dev.	Range	Mean	Std. Erro	Std. Devi.	Range	Mean	Std. Error	Std. Dev.
8	8	0	0	8	8	0	0	8-9	8.5	0.5	0.7	8	8	0	0	7-8	7.9	0.1	0.3
8	8	0	0	8	8	0	0	8-9	8.5	0.5	0.7	8	8	0	0	7-8	7.9	0.1	0.3
11-12	11.5	0.5	0.7	10	10	0	0	10	10	0	0	10	10	0	0	9-11	9.9	0.1	0.5
10	10	0	0	10	10	0	0	10	10	0	0	10	10	0	0	9-11	9.9	0.1	0.5
19	19	0	0	19	19	0	0	19	19	0	0	19	19	0	0	19	19	0	0
197-200	198.5	1.5	2.12	200-202	201.	0.66	1.15	196-198	197	1	1.41	195-199	196.6	1.2	2	194-206	196.8	1.2	3.8
117-119	118	1	1.41	100-111	107.	3.66	6.35	86-106	96	10	14.1	100-113	72	36.1	62.5	105-111	82.3	13.7	43.5
2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
3	3	0	0	3	3	0	0	3	3	0	0	3	3	0	0	3	3	0	0
1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0
122-128.5	125.25	3.25	4.59	100-102	101.	0.7	1.2	58.5-73	65.8	7.3	10.3	94-110	102	4.61	8	78.5-102	89.9	2.34	7.41
48-50.3	49.15	1.15	1.62	37.2-41	39.7	1.3	2.2	22-23.5	22.8	0.8	1.1	39-40.7	26.96	13.4	23.35	41-44	26.98	4.06	12.8
40.2-47.2	43.72	3.5	4.94	31.5-34.2	32.4	0.9	1.5	24.3	26.5	2.2	3.1	32.3-35.1	34.04	0.86	1.5	26.7-35.7	30.86	0.9	2.86
19.6-21.6	20.65	1	1.41	18.2-20.1	19.4	0.6	1.1	13.5-14.3	13.9	0.4	0.6	16.4-20.8	18.28	1.31	2.27	12.9-16.5	14.7	0.39	1.23
9.3-10.3	9.82	0.5	0.7	7.5-8.5	8.2	0.3	0.6	5.8-6.4	6.1	0.3	0.5	7.5-8.12	7.84	0.18	0.31	6.6-8.0	7.32	0.14	0.46
9.8-10.9	10.43	0.55	0.78	7.5-9.1	8.6	0.5	0.9	5.1-7.2	6.1	1.1	1.5	8.3-8.69	8.56	0.11	0.19	6.4-9.6	7.58	0.31	0.99
17-19	18	1	1.41	13.4-17.1	15.8	1.2	2.1	8.3-9.6	9.0	0.6	0.9	15.5-16.3	15.98	0.24	0.41	8.9-14.3	11.82	0.52	1.66
16.8-18.8	17.83	1	1.41	13.4-17	15.8	1.2	2.1	8.4-10.4	9.4	1.0	1.4	15.2-17.8	16.43	0.77	1.34	10.4-15.4	13.74	0.61	1.94
3.2-3.2	3.25	0.025	0.03	2.9-3.3	3.2	0.2	0.3	2.4-2.9	2.7	0.2	0.3	3-3.76	3.29	0.23	0.4	2.2-3.2	2.69	0.09	0.29
6.4-8.3	421.74	415.26	587.	6.4-6.7	6.6	0.1	0.2	4.2-4.8	4.5	0.3	0.4	5.7-6.2	5.97	0.14	0.24	4.6-6.3	5.5	0.2	0.63
7.4-9.6	8.55	1.11	1.56	5.3-8.4	7.4	1.0	1.8	4.2-4.8	4.5	0.3	0.4	5.1-7.3	6.26	0.62	1.08	4.1-6.5	5.47	0.28	0.89
12.1-14.1	13.17	1.01	1.4	9.3-10.2	9.9	0.3	0.6	6.4-7.7	7.1	0.7	1.0	8.7-9.7	9.33	0.31	0.54	6.3-10.8	8.59	0.45	1.45
4.4-4.9	4.6	0.2	0.3	4.6-5	4.8	0.1	0.28	3.0	3.0	0.0	0.0	4.5-4.8	4.65	0.11	0.19	2.8-3.02	2.95	0.01	0.05

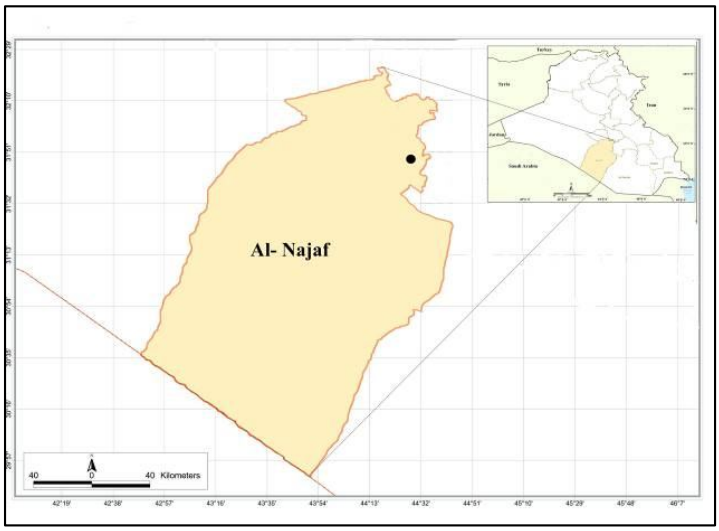


Figure 1. Current locality of *Coluber jugularis C.* cf. *caspius C.* cf. *schmidti* in Al-Najaf province

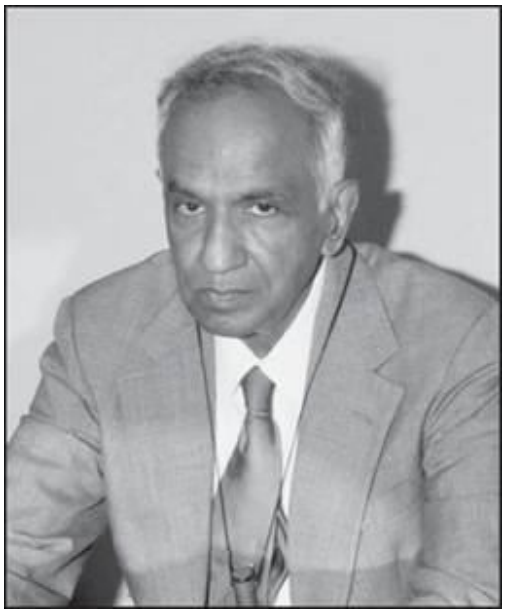
Figure 2. Photographs of live snake collected from AL-Mashkhab district, Najaf province, Iraq. Fig. (A) Adult male *Coluber jugularis,* Fig. (B) Bright black dorsum, Fig. (C) Red maculations apparent on the head plates, Fig. (D) The first 5 infralabials in contact with anterior chin

Figure 3. Photographs of live snake collected from AL-Mashkhab district, Najaf province, Iraq. Fig. (A) Adult male *Coluber caspius,* Fig. (B) The ventral coloration may range from a whitish – yellow to a deep orange and Cloacal Popping technique: By applying pressure to the base of the tail it is often possible to evert the hemipenes of male snakes, Fig. (C) Dark longitudinal stripes, the center of each yellow, and the sides dark.

Figure 4. Photographs of live snake collected from AL-Mashkhab district, Najaf province, Iraq. Fig. (A) Adult male *Coluber schmidti,* Fig. (B) The scale center is dark and the outer borders of dorsal scales are white, giving the appearance of very fine longitudinal stripes, Fig. (C) The general dorsal coloration is olive green with small slender dark spots that extend along the entire dorsal sides, Fig. (D) The ventral side is yellow, with only the underside of the neck and the lateral part of the venter with dark spots, Fig. (E) The upper labials are yellow; the preoculars are also yellowish

BIOGRAPHY OF INDIAN SCIENTISTS

SubramaniamChandrasekhar(1910-1995)



Subramaniam Chandrasekhar, a nephew of Sir C.V. Raman, was born on 19 October 1910 in Lahore, (now in Pakistan). His father was an officer in the Department of Audits and Accounts of the Indian Government Services.Chandrasekhar received his elementary education from his parents and private tutors when he was in Lahore. In 1918 Chandra moved to Chennai where he attended the Hindu High School finishing his secondary school education with honours. He then joined the Presidency College, there taking his Bachelor Science degree in physics with honours.

His first scientific paper, *Compton Scattering and the New Statistics,* was published in the Proceedings of the Royal Society in 1928. On the basis of this paper he was accepted as a research student by R.H. Fowler at theUniversity of Cambridge. On the voyage to England, he developed the theory of white dwarf stars, showing that a star of mass greater than 1.45 times the mass of the sun could not become a white dwarf. This limit is now known as the Chandrasekhar limit.

He obtained his doctorate in 1933. Soon after receiving his doctorate, Chandrasekhar was awarded the Prize Fellowship at Trinity College, Cambridge. In 1937, he accepted the position of Research Associate at the University of Chicago. Chandrasekhar stayed at University of Chicago throughout his career, becoming the Morton D. Hall Distinguished Service Professor in Astronomy and Astrophysics in 1952. In 1952 he established the Astrophysical Journal and was its editor for 19 years, transforming it from a local publication of the University of Chicago into the national journal of the American Astronomical Society. He became a US citizen in 1958.

He was elected Fellow of the Royal Society of London and in 1962 received the Society's Royal Medal. He also received the US National Medal of Science (1966). He was awarded the Nobel prize for Physics in 1983 for his theoretical work on the physical processes of importance to the structure of stars and their evolution. Chandra was a popular teacher who guided over fifty students to their Ph.D.s including some who went on to win the Nobel prize themselves!! His research explored nearly all branches of theoretical astrophysics and he published ten books, each covering a different topic, including one on the relationship between art and science.

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RESEARCH ARTICLE

Discussing the Relation between Knowledge Management Processes and Competitiveness

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ABSTRACT

Uncertainty, which is a result of repetitive evolutions in environmental constituents, has forced several organizations and firms of global competitions to take a different behavior different from what has been stated in management theories; which can be referred to as knowledge management. Knowledge management and its related domains emphasize on the fact that in todays' competitive world, obtaining a sustainable competitive advantage is in debt to organizations' capacity and ability for appropriate implementation of sources which are based on organizations' knowledge. Although, the entire human resources are not of an equal importance for obtaining this competitive advantage. Recently, knowledge has become a main part of industrial sources and also a requirement for success in the context of production. Furthermore, an effective element on obtaining competitive advantages. With respect to mentioned data, in this research, the relation between knowledge management processes and competitiveness in Kerman Provinces' industries is discussed. Results indicate that there is a meaningful relation between knowledge management processes and competitiveness.

Key words: Knowledge Management Processes, Competitiveness, Case study

INTRODUCTION

Nowadays not only knowledge and its intangible attachments have led to locomotion of businesses, but also they are counted as the entire or a part of productions of service and product suppliers. Peter D. in his popular paper named "In search of perfection" considering necessity of implementing new knowledge in organizations, States: Knowledge continuously discards itself, and todays' knowledge is tomorrows' ignorance. He suggests that knowledge management must take place in humans' first attention focuses. In this period, work force, ground and capital are in the second order of importance. Every investing country must pass this period in order to success among modern worlds' accelerated and bold evolutions. Knowledge management techniques and instruments in classic production are gradually corrected but there has been no practical progress in creating expert instruments for knowledge holding management, as a result, organizations usually make little use of their intellectual sources. The obvious is prioritization of attention to the issue of knowledge and its management in 21 centuries' organizations.

Knowledge environment in which organizations should take actions is extremely more complex in terms of construction compared to pre-existing environments. This is mostly due to three related procedures which include explosive growth rate of knowledge, level of knowledge analysis and globalization of the process of knowledge (Probst, 2000). In terms of quantitative measurements, human knowledge has progressively increased. After invention of printing machine by Gutenberg, it took more than three hundred years for the whole globes' knowledge to duplicate and after that time, this knowledge is duplicated every five years. For instance, book production rate was equal to five hundred years after invention of print machine (Badaraco 1991:17 and Arthur Andersen 1996:7).

Now the important question is that how and by whom knowledge management is carried out in organizations. In research literature we have tried to explain knowledge management through providing definitions in order to provide lighting on its relation with competitiveness in organizations. Knowledge management is a wide range of activities applied for management, transaction, creation or promotion of intellectual capitals in an organization. In other words, capability of knowledge management is more than just a canister for information and knowledge. In fact knowledge management is an apparatus for maintenance of information in order to make affairs more efficient.

In the following paragraphs, first we try to provide a brief definition of knowledge and then we discuss different approaches for knowledge management and conclude the paper through discussing the relation between knowledge management and competitiveness in Kerman provinces' industries, in addition to a concise explanation about competitiveness.

Research literature

Knowledge

Knowledge is the only source which increases through implementation. Nowadays knowledge has been extensively focused on as a competitive element.

Firms are forced to benefit from the knowledge which is buried in their staff minds. In many firms, 75 percent of the added value is surrounded by special knowledge (Quinn 1992, 1993). Knowledge is based on data and information but unlike them, it's always restricted to individuals. As a result, knowledge, data and information management should always be synchronized. Knowledge is the set of entire cognitions and skills which are implied by individuals for solving problems (Probst, 2000). Generally, knowledge is information which is shaped inside a human mind (Alavi and Leidner, 2005). In fact, knowledge management is a process through which organizations produce values mediated by intellectual and reasonable properties and their knowledge bases (Santosus and Surmec, 2001).

Knowledge management

First we provide several definitions of knowledge management, and then we count its constituents and finally discuss its processes.

Knowledge management is a deploying process with zigzag movement which manages the knowledge which is produced over time (Nonaka and Kono, 1991), which also known as one of the necessary requirements for investing in competitive environments. Knowledge management is a smart design of processes, apparatus and structures aimed at increasing, renovation and optimization of implementing knowledge which is shown in each of the three elements of intellectual capitals namely as structural, humanities and social capitals (Seemann, 1999).

In another definition of knowledge management, it is considered as a set of processes which result in empowering knowledge in order to play key roles in creating added value and production value (Sinotte, 2004).

Organizations' knowledge management is a basic element in obtaining and preserving the competitive advantages in an organization which means different types of knowledge for supporting organizations' macro strategies, assessment of existing condition of knowledge management, transferring knowledge basics to new bases and correction and compensation of shortcomings in this context.

The APQC which is a training non-profit organization, has defined knowledge management as: "strategies and process of recognition, domination and obtaining power to penetrate knowledge for enhancement of competitive power".

Leonard Burton (1997) has defined knowledge as a sustainable core which includes four elements:

Integrated system, management system, staffs' knowledge and expertise and valorization.in a world by which everything is ambiguous to an organization, only knowledge is considered as a competitive advantage and there are organizations which are able to continuously create new knowledge and wide spread it in the entire organization and also present its real visualization in their new products and services. By knowledge, in addition to transferring information, we refer to innovation, creation and dynamicity. On this basis a knowledge organization implies new ideas and in this way, it is able to obtain a competitive advantage (Alvani, 1999). For effective implication of knowledge management, it is necessary to integrate the following three different aspects of organizational management: General business strategy, information system strategies and human resource management strategies (Kelly, 2004).

Wiig (1997) and Americas' productivity of quality center have identified six strategies for knowledge management in organizations which reflect organizations different essence and capabilities. These strategies include: 1) Knowledge strategy as a business strategy which is a general approach for knowledge management in a place in which knowledge is considered as a product. 2) Intellectual capital management strategy which emphasize on implementing and promoting capitals which are pre-existing in organizations. 3) Responsibility strategy for individual knowledge capital which supports employees and persuades them to develop their skills and knowledge and share them with each other. 4) Knowledge creation strategy which emphasizes on creation of new knowledge through research and development units. 5) knowledge transfer strategy which is considered as the best activity for optimization of quality and organizations' efficiency and 6) Customer oriented knowledge strategy which is implemented with the purpose of understanding customers for exact solving of their demands. In a different categorization, David S. who is a credible author in the context of knowledge management, believes that most of knowledge management programs are focused on seven strategic levels: 1) Customer knowledge which is the most critical knowledge in most organizations, 2) knowledge in processes which is defined as implementation of the best

information while doing tasks, 3) knowledge in products and services which is defined as smart solutions based on customer demands, 4) individuals' knowledge which is defined as training and controlling intellectual powers which is the most valuable capital, 5) Organizational memory which is defined as reference to previous lessons or any other place in organization, 6) knowledge in communications which is defined as deep individual knowledge which supports a successful collaboration and 7) knowledge properties which is defined as measurement and management of intellectual capitals.

Some scholars in the context of knowledge management have divided it into three main constituents of people, processes and technology (Figure 1.) people are the crucial parts of knowledge managements' success. Knowledge is only credible in humanities contexts and is flown among humans rather than machines. Knowledge processes include four functions of obtaining, refining, storing and sharing which are discussed in details in next paragraphs. Technology is consisted of hardware and software which each are consisted of information systems, collaboration instruments, Expert localization instruments, data analysis instruments, research instruments and exploration and Expert deployment instruments.

Regarding main processes of knowledge management, views are tightly close. From one point of view, main processes of knowledge management are categorized as recognition, obtaining, deployment, collaboration (distribution), maintenance and benefiting (Probst, 2000) while from another point of view, knowledge management is consisted of four main processes of creation, storing, recovery (transfer), sharing and knowledge implementation (Massa, 2009). Gorge W. Casey (2008) has divided knowledge management processes into five sections.

As mentioned before, the processes we selected for our research include obtaining, refining, storing and sharing knowledge (Tsai, 2000). Each of which are defined in the following.

Obtaining knowledge: it is defined as the process of producing knowledge inside the company or obtaining knowledge from external sources. It should be noted that effective obtaining of knowledge from external sources depends on recognition of value of the new information and implementing them in order to reach organizational goals.

Refining: it is defined as the process of refining and integrating different knowledge. The goal of refining in accessing sets of knowledge which are entirely relevant to our purposes.

Storing: it is referred to processes which structuralize knowledge with the goal of formalization of knowledge and storing it in knowledge base.

Sharing Knowledge: it refers to processes of transferring, distribution and publication of knowledge in order to make it reachable by who need it.

Competitiveness

During the first years of industrial revolution, organizations increased their effectiveness, efficiency and competitive capabilities through automation of work force and methodicalization of production processes. But nowadays, organizations are faced with additional global competitions and customers far more complex. Organizations must continuously implement innovations in reducing expenses and deployment of their markets in order to preserve their competitiveness. As a result they have tried to increase efficiency of their processes and this is where knowledge management comes up. In the situation of repetitive evolution of markets, discarding old technologies, multiplication of competitors and basic evolutions of products and services, knowledge is the only sustainable competitive advantage for an organization (Nonaka, 1998).

It should be pointed out that satisfied customers are companies' sources of benefits. Companies which fail to satisfy their customers will not have a long term existence in the market. Providing high quality products and excellent services leads to numerous advantages for the company (Roosta, 2008). Some researchers have analyzed four elements of good pricing, high quality, high speed and providing appropriate services for customers for assessing competitiveness level (Akhavan, 2008). As a result we have paid attention to more general elements in order to fully cover all aspects of competitiveness. These indexes include: organizations' prediction ability, sales capability, training capability, information processing ability, renovation capability, financial capability and quality of products and services.

Hypotheses and research model

In this research, our goal is to discuss the relationship between knowledge management processes and competitiveness. On this basis, there have been hypotheses formed which are as follows in addition to figure 2, which shows the relation between research variables.

Hypothesis - There is a meaningful relation between knowledge management processes and competitiveness
There is a meaningful relation between process of obtaining knowledge and competitiveness
There is a meaningful relation between process of refining knowledge and competitiveness
There is a meaningful relation between process of storing knowledge and competitiveness
There is a meaningful relation between process of sharing knowledge and competitiveness

METHODOLOGY

In this research, factories listed in Kerman provinces' industrial parks (400 factories) are selected as the population. Information regarding these factories was obtained from data available in research and development office of this province. Since the number of factories was great we selected a sample for data collection.

As a result, first a number of questionnaires were distributed for assessing populations' standard deviation and next, 70 factories were selected according to the following formula:

$$n = \left[\frac{z_{\alpha/2} s}{e} \right]^2$$

For increasing the similarity between sample and population and increasing sampling accuracy for estimation of population parameters and incorporating sample features in population, group sampling method is implemented in which the population is divided into homogeneous groups and each group is consisted of elements with similar properties (Azar, 2009). The population is divided into two groups of small level with 300 hundred factories and large level including 100 factories based on indexes of organization size, number of staff, capital and sales level. As a result, for ensuring obtaining the defined sample size, 25 questionnaires were distributed randomly in large level and also 75 questionnaires were randomly distributed among small level factories. Anonymous questionnaires were sent during the final days of 2010 summer and 78 questionnaires were collected back three months later. Among these questionnaires, 73 were counted as valid and five as incomplete or ambiguous. It is noteworthy to mention that Likert scale was implemented in design of these questionnaires and measurement range starts with very low and ends with very high. In order to confirm validity of the questionnaires, we exposed them to a number of professors and company managers and after validation; questionnaires were distributed among the sample. In this research, Chi-do test, variance analysis and correlation analysis are implemented for data analysis.

According to complete questionnaires, Cranach's' Alpha coefficient was measured for each respondent. If the least value is considered as 0.8 for basic research and 0.7 for exploratory research, the level of reliability is acceptable (Nunnaly, 1987). Results of each variable's reliability check are shown in table 1.

Data and research findings analysis

Results of chi-do test in table 2 indicate the correlation between competitiveness and knowledge management processes. As we can see, these processes are extremely related to competitiveness

Correlation analysis is a statistic tool through which we can measure the degree of linear relation between one variable and another. In this research, Pearson correlation analysis is implemented for defining correlation between knowledge management and competitiveness. With respect to results of table 3, correlation between knowledge management processes and competitiveness are evident. These results confirm our research hypotheses.

Companies need competitive advantages for preserving their existence. They should focus on updating their product lines and synchronizing their steps with up to date knowledge. Obtaining the knowledge which is unavailable for competitors may lead to a competitive advantage and resulting significant amounts of profits for them. On this basis, obtaining knowledge can have a significant share in competitiveness.In the next level, companies will try to screen their obtained knowledge in a way that the remaining of them is in full compliance with their goals. After passing this level, companies will run the screened knowledge in their working environments and try to stabilize it. They store the stabilized knowledge in their knowledge base and make it available to their staff in order to benefit from its advantages. Companies which have full solidarity in implementing these processes will have obtained a competitive advantage for themselves and remain competitive in the market. Our results also confirm these statements.

CONCLUSION

In todays' knowledge oriented economy, knowledge is considered as most important and significant organizational property which leads to competitive advantage. Also obtaining a competitive advantage is the only index which shows the advantage of organizations compared to each other.Knowledge management includes four main processes of obtaining knowledge, refining knowledge, storing knowledge and sharing knowledge. In this paper the relation between these processes and competitiveness in Kerman's industries is discussed. Results indicated a meaningful relation between knowledge management processes and competitiveness and also it was proved that three variables of organ size namely as sales, capital and number of staff have a meaningful effect of capability to manage knowledge. We assigned equal weighting numbers to each process of knowledge management and after assessing questionnaires, we concluded that each manager regards these elements with a different level of importance. Organizations which tend to increase their competitiveness should first optimize their knowledge management capability and as a result knowledge management advantage allows them to obtain their goals.

In this research we tried to discuss the relation between knowledge management processes and competitiveness, but more work is required for complete exploration of all aspects of this newfound phenomena. As a result, recommendations for future researches are included in the following lines:

- Discussing the effect of organization size on knowledge management and its related processes
- Discussing knowledge obtaining approaches and its effect on sustainable competitiveness
- Discussing the effect of key staff on organizations' knowledge capital
- Discussing the effect of implementing knowledge management in declining expenses and increasing firms' efficiency

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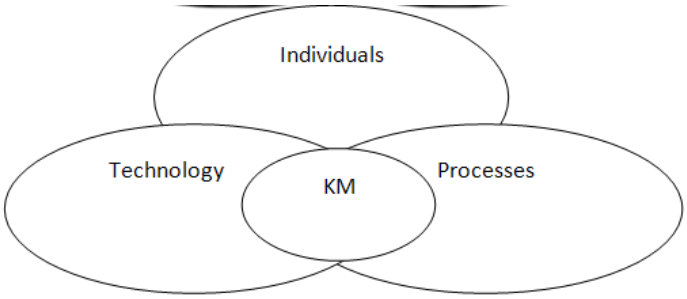

Figure 1. Knowledge management constituents (Casey, 2008)

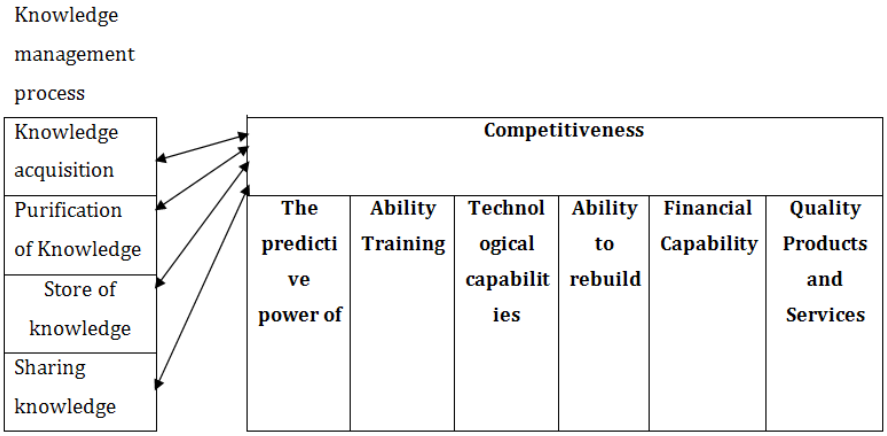

Figure 2. Research Model

Table 1. Questionnaire reliability

Competitiveness	**knowledge management**				**criterion**
	Sharing knowledge	Storing knowledge	Refining knowledge	Obtaining knowledge	Cranbach's alpha
0.8823	0.8502	0.7006	0.7042	0.8473	

Table 2. Chi-do test for knowledge management processes and competitiveness

competitiveness		Knowledge management processes
p-Value	χ^2	
***0.000	673.026	Obtaining knowledge
***0.000	348.712	Refining knowledge
***0.004	395.582	Storing knowledge
***0.000	821.134	Sharing knowledge

Table 3. Correlation coefficients

Competitiv-eness	Sharing	Storing	refining	Obtaining		
0.465 0.000 71	0.382 0.000 71	0.831 0.000 73	0.803 0.000 73	1.000 - 73	Correlation sig number	Obtaining
0.442 0.000 71	0.403 0.000 71	0.802 0.000 73	1.000 - 73	0.803 0.000 73	Correlationsig number	Refining
0.432 0.000 71	0.372 0.000 71	1.000 - 73	0.802 0.000 73	0.831 0.000 73	Correlationsig number	Storing
0.942 0.000 71	1.000 - 71	0.372 0.000 71	0.403 0.000 71	0.382 0.000 71	Correlationsig number	Sharing
1.000 - 71	0.942 0.000 71	0.432 0.000 71	0.442 0.000 71	0.465 0.000 71	Correlationsig number	Competiti veness

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RESEARCH ARTICLE

Costing System Settlement Necessity on the Base of Activity in Operational Budgeting of Governmental Organization in Eastern Azarbaijan.

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ABSTRACT

Purpose of this research is to studying the costing system settlement necessity on the base of activity in operational budgeting of governmental organization in eastern Azarbaijan. For these studying, operational budgeting has been defined in 3 Field of: operation assessment ability ,employees ability and technical ability in shah theory had studied and had regulated according to this one orginal theory (shah) and 3 secondary theory(2). This research statistical community includes 120 employees from 30 governmental organizations in eastern Azarbaijan. That they all are working in the field of: Financial controller, Financial management, auditor and budgeting expert.(4) Information collected by questionnaire sheet in 30 questions and % 95percent of them are reliable(5). According to the results of this research governmental organizations have ability of costing system settlement necessity on the base of activity in operational budgeting.

Key words: budget, operational budgeting, costing according to activity,

INTRODUCTION

One of the common factor in unsuccessful operational budgeting is low capacity of organizations by studying the reports about the using of operational budgeting shows that 3 field of organizations ability are most important and crucial; operation assessment ability, employees ability and technical ability.(5)Operation assessment ability: this factor are most important part of budgeting that effect to the other factors, even if government didn't have the operation assessment ability cause the defeat in operational budgeting.(6)Employees ability: also studying shows that

having the employees by high ability can have useful effects in costing system in operational budgeting and also different effect too in all part of operational budgeting system.(7)Technical ability: government experience shows the relationship between operational budgeting and importance of technical ability. Special technical necessity should use in the part of information collection that by using this information we can find out fast operation in correct shape for efficient usage(7). Also this information should include the financial controller and controlling by reporting in government.

On account of these reasons we explain and define these research topic: costing system settlement necessity on the base of activity in operational budgeting of governmental management(7)

Topic Explain

Operational budgeting makes outstanding changes in governmental budgeting system that can make usefull and important role in developing country. The unique particulars of these system is to emphasis on results and purposes of activities(1). In operational budgeting in addition to validity analysis they focus to functions, programmes, activities, plans volume and costs in executive plans of government by using scientific Methods like financial controlling of final cost are evaluated.(8)

These days on account of don't guarantee the information's for management usage by primitive cost system, public sectors by private sectors are going to use the cost system on the base of ABC activities. Cost system Methods on the base of ABC activities will change the present costing system of public and private sectors, by using this Methods a powerful and use full fool are given to managers and public governmental must reform to change the company polices for reduce the reproduction costs and services costs also change the quality and quantity of services for more relations between reproduction costs and budgeting.

Research Importance

By noticing that operational budgeting and usage methods have been experienced from 1385 in Iran. This research can improve the activities and identity the problems in these way and also can help to find out the efficient way to limpid the reform budgeting condition and have many usages. Also this kind of research can notice the managers and executive sectors managers to find out the problems and use the scientific way for costing system on the base of activities and make right decisions for future costs. By noticing to these important factors knowing the useful factors for performance. The costing system settlement on the base of activities in operational budgeting can give crucial information for financial controller, financial management, auditor in government organizations.

Research Purposes

The purpose of the research is to costing system settlement necessity on the base of activities in operational budgeting of governmental organizations in Easter Azarbaijan then we follow these purposes:
1- studying operational assessment ability in cost system settlement on the base of activity in operational budgeting of governmental organization.(8)
2- studying employees abilities in cost system settlement on the base of activity in operational budgeting of governmental sector
3- studying technical abilities in cost system settlement on the base of activities in operational budgeting of governmental sector
theory frame(9)
recent auspices to the costing system settlement make new ideas about the useful effect of this settlement, therefore a idea collection declare in public sector named (SHAH).(10)

This model involved three dimensions: operation assessment ability, employee's ability and technical ability.
A: **operation assessment ability:** How to find out the best way for resource best allocation and purpose ways definition, program, costing.(11)
B. **employees ability:** this part contained the standard and range of employees training and education, traing of costing system settlement on the base of activity in operational budgeting concepts.
C: **Technical ability**: this part contained mechanized accountant system settlement in ABC. Using specialized accountant employees and expert consulter from out of the organization.(11)

Suggestion

Operational budgeting is a complicated function that takes a long time for its settlement. And there are problems for ABC system settlement. And for solve these problems we have some offers: (12)
1- ABC system will have useful effects as whole people take a part in doing and settlement of this system, university traing plan change and reformed. Public sectors and governmental organizations use expert and specialized peoples.(12)
2- Technical ability should be a part of information's collected plane and become available for all organizations.
3- all organization give clear chart of their inner activities in the field of costing for making useful and right ways and bases in ABC system settlement.(13)

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RESEARCH ARTICLE

Soil Distribution and Engineering Problems in Designing Foundation in Different Bases

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ABSTRACT

Footings should be placed below the frost line because of possible frost heave of the buildings and because alternate freezing and thawing of the soil tends to maintain it in an unconsolidated (loose) state. However, aside from the consideration that the soil may be loose, interior footings may be placed at convenient depths since the building warmth should control frost. Presents approximate maximum frost depths for various parts of the United States; however, local building codes should be consulted for design values, which may be based on local experience and therefore be more realistic. Recent weather extremes may he obtained from weather records as a 'check that possible cold-weather cycles arc not increasing the frost depth. Clayey soils tend to shrink on drying and expand when wet. Generally, the lower the shrinkage limit and the wider the range of plasticity index, the more likely is volume change to occur and the greater the amount of such change. These changes in volume can be brought about by the drying of the soil after the structure is built, as, for example, in the protection of the soil from natural moisture. Loss in soil moisture by evaporation through heating the building or beneath, or adjacent to, heating units such as boilers may also create volume changes. Volume change may be induced by desiccation of the soil from vegetation, such as trees and shrubs used for landscaping the structure(1) Volume change may also occur from artificially increasing the moisture in the soil beneath the structure. Cold-storage buildings with an uninsulated thermal gradient may condense the water vapor in the soil or create an upward flow of water vapor from the water table. Ice lenses may form if the temperature is Sufficiently low(2).

Key words: cold-strorage-water wapor-thermal gradient-desiecdte soil conservation pressure-landfill-timberpiling.

INTRODUCTION

Volume change is particularly troublesome in large areas of the Southwestern United States, India, and Australia, and in parts of Africa and the Middle East which are subject to long dry periods and periodic heavy rains of short duration. The dry periods tend to desiccate the soil; then the rains cause large amounts of swelling. There is not enough rainfall to leach and weather the troublesome clay minerals; thus they remain unaltered near tHe ground surface and are rapidly wetted during the rainy periods. Soils in these areas are particularly troublesome to build on as water vapor migrating from the water table which may be at a depth of many meters condenses on the bottom sides of the floor slabs and footings(1). The soil in the interior portions of the building eventually becomes approximately saturated from the condensate and swells unless the building provides sufficient weight to restrain the swelling pressure buildings seldom provide the huge restraining pressures required to control swelling. A second difficulty arises in that in the arid climate the soil around the periphery remains in a much drier state than the interior soil and large differential movements result. may be used as a guide in evaluating the potential for volume change of soils based on easy-to-determine index properties. This table is a summary of Holtz's (1959) data on several soils and the correlation of some 50 soils from other areas, including a large number of Indian Black Cotton soils by Dakshanamurthy and Raman (1973) In terms of relative values "low" volume change might he taken as not more than 5 percent where " very high" could be interpreted as over 25 percent. Structures founded on expansive soils require special construction techniques for the foundations. Some of the methods will be taken up in some detail.

When placing footings adjacent to an existing structure, as indicated in Fig. 7-2a and b, the line from the base of the new footing to the edge of the old footing should be 45' or less with the horizontal plane. From this it follows that the distance m of should be greater than the difference in elevation of the(2)Two footings, z_f. This approximation should produce very conservative pressures in that zone with contributions from more than one footing.

Conversely, indicates that if the new footing is lower than the existing footing, there is a possibility that the soil may flow laterally from beneath the existing footing.This may increase the excavation somewhat but, more importantly, may result in settlement cracks in the existing building. This problem is difficult to analyze; however, an approximation of the safe depth z_f may be made for a0-c soil using since $\sigma_3 = 0$ on the vertical face of the excavation.

The vertical pressure σ_1 would include the pressure from the existing footing.illustrates how one may get into trouble by excavating so close to an existing building that the $\overline{q}N_q$ term of the bearing-capacity equation is lost.(1)

It is difficult to compute how close one may excavate to existing footings of before the adjacent structure is distressed. The problem may be avoided by constructing a wall (sheet pile or other material; to retain the soil in essentially the K_o state outside the excavation. One of the major problems in making an excavation for new construction in urban areas is to do so without causing damage, either real or imagined, to the adjacent property owners.(1)

Underground defects or utilities may affect the foundation depth, for example, limestone caverns, old mine tunnels, soft material, sewer tunnels, telephonecable conduits, and possible flaws created by the pumping out of soil fluids (oil, water). Bridging action may be adequate for some cavities or across soft lenses but should be relied upon only after a careful study of the conditions. In other cases, the solution may require a different type of foundation (such as piles or caissons) or even an abandonment of the site.(1)

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Displaced Soil Effects

Soil is always displaced by installing a foundation. In the case of spread footings the displacement is the volume of the footing pad and the negligible amount from the column resting on the footing. In cases where a basement is involved, the basement floor slab usually rests directly on top of the footing pad. In other cases, a hole is excavated for the footing, the footing and column is poured, and the remainder of the hole is bachfilled to the ground surface as illustrated in .When the footing is below ground, a concrete pedestal is used to connect to steel columns because of corrosion; for concrete columns, the column is simply attached to the footing with dowels at the footing level illustrates the condition of footings beneath basements and walls. Illustrates placing of a mat foundation. The backfill soil should be carefully compacted over the footing of if a floor slab is to rest on the ground surface. Select freedraining backfill is carefully placed around basement walls as shown in and c, usually with a system of perimeter drainage to control any hydrostatic pressure.

Foundations in Sand Deposites

Foundations on sand will require consideration of the following:

1. Bearing capacity.
2. Settlement-loose deposits must be densified to control the settlement.
3. Placing the footing at a sufficient depth that the soil beneath the footing is confined. If sand is not confined, it will roll out from the footing perimeter with a loss of density and bearing capacity. Wind and water may erode the sand from beneath a footing too near the ground surface.(1) Foundations in sand may consist of spread footings, mats, or piles, depending on the density, thickness, and cost of densifying the deposit, and the building loads. Solid-section, large-volume piles may be used both to carry load to a greater depth in the deposit and as a means of compacting the deposit. Smallvolume piles are normally used to carry near-surface loads through loose sand deposits to firm underlying strata. Spread footings are used if the deposit is dense enough to support the 'loads without excessive settlements, Settlements on sand deposits are classified as immediate settlements, and many of them will be built out as the construction progresses because of loads and site vibration. Unfortunately, it is impossible to compute the built-out settlements. It is poor practice to place foundations on sand deposits where the relative density is not at least 60 percent or to a density of about 90 percent or more of the maximum density possible to obtain in the laboratory. This dense state reduces the possibility of both load settlements and possible settlement damage due to vibrations from passing equipment, earthquakes, etc.(2)

FOUNDATIONS IN EXPANSIVE SOILS

Soils which undergo volume changes upon wetting and drying are termed expansive soils. These soils are mostly found in arid areas and contain large amounts of clay minerals. The low rainfall has not enabled the montmorillonite clay minerals to weather to less active clay types nor has it allowed sufficient leaching to carry the clay particles far enough into the strata to reduce its effect. Expansive soils are found in large areas of the Southwest and Western United States including Oklahoma, Texas, Colorado, Nevada, California, Utah, and others. These soils are also found in large areas of India and Australia (sometimes called Black Cotton soils), South America, Africa, and the Middle East.

Can be used to give an indication of the potential for volume change caused by alternate wetting and drying.(2)When the problem is identified, one may:

I. Alter the soil-for example, addition of lime, cement, or other admixture will reduce or eliminate the volume change on wetting or drying. Compaction to low densities at water contents on the wet side of optimum may also be used [Gromko (1974), with large number of references].(3)

2. Control the direction of expansion-by allowing the soil to expand into cavities built in the foundation, the foundation movements may be reduced to tolerable amounts. A common practice is to build "waffle" slabs so that the ribs hold the structure, the waffle voids allows soil expansion [BRAB (1968), Dawson (1959)]. It may be possible to build foundation walls to some depth into the ground using tiles placed such that the soil can expand laterally into the tile cavity.
3. Control the water-the soil may be excavated to a depth such that the weight of soil will control heave, lay a plastic fabric, and then backfill. The rising (4) water vapor is collected at a depth such that volume change is controlled by the weight of overlying material and construction. The moisture above will also have to be controlled by paving, grading, etc. A granular blanket of 0.3 to I m or more depth will control capillary water and maintain a more uniform water content in the clay [Gogoll (1970)].)

FOUNDATIONS ON CLAYSAND SILTS

Clays and silts may range from very soft, normally consolidated, to very stiff, highly overconsolidated deposits. Major problems are often associated with the very soft, to soft, deposits from both bearing-capacity (shear-strength) considerations and consolidation settlements. We should note that "soft" implies that the soil is very wet to saturated. Consolidation settlements occur in these deposits of high water content as found along lake and ocean fronts, as well as in beds of former lakes and old streams where channels have become relocated but the water table remains high.(4)

Silts with a large I_p and/or W_L may be called plastic silts. These silts exhibit nearly the same characteristics as that of soft clays. The plasticity results from contamination of the mass with clay minerals and/or organic material. Inorganic silts and silts with little clay content may be loose, but the behavior is more that of a sand, and procedures for design and densification are similar. Few pure silt deposits are found in nature. Most deposits contain some clay particles (with the resulting plasticity/cohesion) or quantities of fine to medium sand. In passing, note that as little as 5 percent clay can give a silt "cohesion"; 10 to 25 percent clay particles may result in the deposit being a "clay."

In both these types of soil it is necessary to make a best estimate of the allowable bearing capacity to control a shear failure with a suitable factor of safety and to estimate the probable consolidation settlements. The bearing capacity is most often determined using the untrained shear strength as obtained from quality tube samples or from samples obtained from routine SPT. If the soil is highly sensitive (remolded shear strength one-fourth or less of undisturbed), consideration should be given to in situ strength testing such as the vane-shear or the cone-penetration test.

Consolidation tests should be made to determine file expected settlement if the structure has a relatively high cost per unit area. For smaller or less important structures, some type of settlement estimate hased on the index properties might be justified.(4)

Preconsolidated clays often contain shrinkage cracks and joints (fractured into a quantitv of small blocks). The presence of structural defects makes it somewhat difficult to determine the unconfined compression strength. In many cases and especially above the water table $(S \square 100\text{percent})$ the strength as determined on occasional intact samples from the **SPT** or from using a pocket penetrometer will give adequate indication of strength. If better estimates are required. it may be necessary to use plate-load tests since it is very difficult (nearly impossible) to obtain tube samples of sufficient quality that triaxial tests can be performed. The cell pressure in the triaxial test tends to close the fissures so that an approximation to the in situ shear strength can be obtained. If the deposit is not overly fissured and jointed, and the foundation is near ground surface, a suitable sample may be trimmed by hand if the cost can be justified. The immediate settlement equations of Chap. 5 can be used for settlement estimates together with empirical values of E_s if the soil is not saturated. These estimates should be adequate if the foundation

pressures are not extremely high. If a precise settlement estimate is required, it will be necessary to obtain a reliable value of E_s .(5)

CONCLUSION

1-As land becomes scarce near urban areas, it may be necessary to use a former sanitary landfill. A sanitary landfill is an esoteric name for a garbage dump.
2-In using a landfill for larer construction it may be extremely difficult to avoid settlements as the refuse decomposes and/or consolidates. It is certain that the settlements will be uneven owing to the varied character of the refuse material and the method(s) used to construct the fill.
3- Heave of expansive soils is difficult to predict, since the amount depends on the clay mineralogy, particle orientation, confining overburden pressure, and the instant in situ water content at the reference time.(5)

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RESEARCH ARTICLE

Studying about Special Footings and Beams on Elastic Foundations

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ABSTRACT

This study will take up the design of several of the more complicated foundation members such as those required to support several columns in a line or from industrial loadings. Chapter 10 will be concerned with multiple lines of columns supported by mat or plate foundations(1). When a footing supports a line of two or more columns, it is called a combined footing. A combined footing may have either rectangular or trapezoidal shape or be a series of pads connected by narrow rigid beams (strap footing). We will also briefly consider footings for industrial applications, in particular the round (actually octagonal) footing widely used in the petrochemical industry. Both the conventional "rigid" and the beam-on-elastic-foundation method of combined footing analysis will be presented. The beam-on-elastic-foundation method requires a computer program for maximum design efficiency. A short, simple program for the basic computations is included in the Appendix for illustrative purposes(2).

Key word: trapezoidal- diagonal tension- critical locations moment diagram- suddenly inerha- trapezoid shaped

INTRODUCTION

Footings for industrial applications are not directly covered by the ACI Code. On occasion local codes may include some guidance, and certain industries may have recommended standards of practice, but often the engineer has little guidance other than what in-house design experience might exist. These gaps in practice are sometimes filled by handbooks or by professional committees (ACI, for example, has over 100 committees; Committee 318 is responsible for the ACI "Building Code 318-"). Professionals who have a mutual interest make up the membership of these committees(3).

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Footings for industrial application are otten one of a kind; the loadings are very difficult to define, and as a consequence the footing is conservatively designed so that. hopefully, the worst possible load condition (or some loading not anticipated at design time) is covered.

Footings in industrial' applications often have large overturning moments and horizontal forces in addition to vertical forces. The geotechnical consultant would not know either the moment or horizontal force at this preliminary stage, so that the allowable bearing capacity q_a is not likely to be based on footing eccentricity or any of the refined methods. Rather the allowable bearing capacity is very probably a routine determination using the SPT and/or q_u with some possible reduction to allow for loading uncertainties(2).

It would be up to the structural designer to accept the recommended q_a or discuss with the consultant whether the value should be further reduced. The designer may also wish to discuss whether an increase may be allowed for wind, and some recommendation for the backfill should be obtained, since this is a substantial contribution to overturning stability and might provide some sliding stability. Two factors usually allow this procedure to work:

I. The critical loading (wind or earthquake) is transitory and an upper bound value in most cases(2).
2. The footings are usually embedded in the soil a substantial distance so that the increase in bearing capacity, which may not be accounted for, more than offsets any reduction from eccentric loadings. If the center of footing area coincides with the resultant there would be no reduction for eccentricity:

Sliding stability may be based on a combination of base adhesion and friction. Friction resistance depends on the total weight of the system above the base of the footing. Generally the friction factor is tan ϕ but the adhesion should be reduced, with values from 0.6 to 0.8c being commonly used. Some designers allow use of passive pressure resistance to sliding. If this is included, great care in backfilling should be made so that the perimeter zone soil is reliable(3).

A round base is more economical than other shapes for tall vessels and stacks because the direction of overturning from wind or earthquake is not fixed. A pedestal is a common appurtenance and is often round to accommodate the base ring, or frame, of the equipment. In practice, however, it is difficult to form a round member; so an octagon is widely used since it closely fits a circle and can be formed easily. The geometry of an octagon is given in Fig. 9-8 together with a number of section property equations for design use.

Generally the maximum eccentricity should be limited to about $B/8$ so that the full footing is effective for all but wind on the vessel during erection. If a turnover wind is anticipated during erection, temporary guying should be used(4).

Recrangular Combined Footings

It may not be possible to place columns at the center of a spread footing if they are near the property line, near mechanical equipment locations, or irregularly spaced. Columns located off center will result in a nonuniform soil pressure. In order to avoid the nonuniform soil pressure, an alternative is to enlarge the footing and place one or more of the adjacent columns in the same line on it.The footing geometry are made such that the resultant of the several columns is in the center of the footing area. This footing and load geometry allows the designer to assume a uniform soil pressure distribution. The footing can be rectangular if the column which is eccentric with respect to a spread footing carries a smaller load than the interior columns. Bridge piers are also founded on very rigid combined rectangular footings.

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The basic assumption for the design of a rectangular combined footing is that it is a rigid member so that the soil pressure is linear. The pressure will be uniform if the location of the load resultant (including column moments) coincides with the center of area. This assumption is approximately true if the soil is homogeneous and the footing is rigid. In actual practice it is very difficult to make a rigid footing as the thickness would have to be great; nevertheless, the assumption of a rigid member has been successfully used for foundation members. Success has probably resulted from a combination of soil creep, concrete stress transfer, and overdesign.

In recognition of the overdesign using this conventional (also "rigid") method, current practice tends to modify the design by a beam-on-elastic-foundation analysis. The latter analysis produces smaller design moments than those obtained by the rigid method, as will be illustrated later.

The conventional (or rigid) design of a rectangular combined footing consists in determining the location of the center of footing area. Next the length and width can be found. With these dimensions the footing is treated as a beam supported by the two or more columns, and the shear and moment diagrams are drawn. The depth based on diagonal tension or wide-beam shear is computed. Critical sections for diagonal tension and wide beam are the same as for spread footings, i.e., at d/2 and d, respectively, from the column face. It is common practice not to use shear reinforcement both for economy and to increase the rigidity. The labor costs to bend and place the shear reinforcement are likely to far exceed the small savings in concrete that would result from its use.(4)

Design of Trapezoid-Shape Footings

A combined footing will be trapezoid-shaped if the column which has too limited space for a spread footing carries the larger load. In this case the resultant of the column loads (including moments) will be closer to the larger column load, and doubling the centroid distance as done for the rectangular footing will not provide sufficient length to reach the interior column. The footing geometry necessary for a trapezoid-shaped footing is illustrated plane geometry considerations; we have with the minimum value of L as out-to-out of the column faces. In most cases a trapezoid footing would be used with only two columns as illustrated, but the solution proceeds similarly for more than two columns. The forming and reinforcing steel for a trapezoid footing is somewhat awkward to place. For these reasons it may be preferable to use a strap footing (next section) where possible, since essentially the same goal of producing a computed uniform soil pressure is obtained.(3)

With x' falling at a particular location and defining the center of area, the dimensions a and b have unique values which require a simultaneous solution of. The value of L must be known and the area A will be based on the allowable soil pressure $(A = \sum P / q_a)$.

When the end dimensions a and b are found, the footing is treated similarly to the rectangular footing (as a beam) except that the "beam" pressure diagram will be linear varying (first-degree) from a and b not being equal. The resulting shear diagram is a second-degree curve and the moment diagram is a thirddegree curve. Calculus is a most efficient means to obtain critical ordinates for these diagrams and to treat the columns as point loads. A trapezoid-shaped footing can also be analyzed as a beam on elastic foundation, only in this case the finite-element widths are average values.(3)

Design of Starp Footings

A strap footing is used to connect an eccentrically loaded column footing to an interior column as shown in . The strap is used to transmit the moment caused from eccentricity to the interior column footing so that a uniform soil pressure is computed beneath both footings. The strap serves the same purpose as the interior portion of a combined footing but is much narrower to save on materials. Note, again in that the resultant soil pressure is at the footing centroids so that a uniform soil pressure diagram results.(4)The strap footing may be used in lieu of a combined

rectangular or trapezoid footing if the distance between columns is large and/or the allowable soil pressure is relatively large so that the additional footing area is not needed. Three basic considerations for strap footing design are:

1. Strap must be rigid-perhaps $I_{strap} / I_{footing} > 2$ (based on work by author). This rigidity is necessary to avoid rotation of the exterior footing.
2. Footings should be proportioned for approximately equal soil pressures and avoidance of large differences in B to reduce differential settlement.
3. Strap should be out of contact with soil so that there are no soil reactions to modify the design assumptions shown on. It is common to neglect strap weight in the design. Check depth to span (between footing edges) to see if it is a deep beam (ACI Art. 10-7).

A strap footing should be considered only after a careful analysis that spread footings-even if oversize-will not work. The extra labor and forming costs for this type of footing make it one of "last resort." It may not be desirable to use shear reinforcement in the strap so that the rigidity will be increased. The strap may have a number of configurations; however, that shown in should produce the greatest rigidity with the width at least equal to the smallest column width. If the depth is restricted, it may be necessary to increase the strap width to obtain the necessary rigidity. The strap should be securely attached to the column and footing by dowels so that the system acts as a unit.The equations shown in are used to proportion the footing dimensions. The length dimension of the eccentrically loaded footing is dependent upon the designer's arbitrarily selected value of "e" so that a unique solution is not likely.(4)

CONCLUSION

1- A major problem in using the concept of modulus of subgrade reaction is that if a constant value is used for a plate or mat uniformly loaded (e.g., base of a liquid storage tank) the deflections tend to be constant, whereas, observations clearly show a "dishing" with deflections larger in the center.(4)
2- From inspection of the Boussinesq pressure bulbs of obtain the pressure profile at selected points beneath the footing (say, center, one-half distance to edge, and edge). Halt the depth increment when the pressure increase is on the order of 0.1 to $0.05q_o$. The pressure contribution does not have to be based on the actual contact pressure q_o.
3- Numerically integrate the pressure profile from step 1 to find the average pressure increase. Also record the total depth used to obtain this average pressure increase.
Compute the resulting settlement as

$$\Delta H = \frac{\Delta q L}{E_s}$$

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BIOGRAPHY OF INDIAN SCIENTISTS

K. Chandrasekharan (1920 -)

Komaravolu Chandrasekharan was born on 21 November 1920 in Machilipatnam in modern-day Andhra Pradesh. He attended District Board School in Guntur District, Andhra Pradesh, and then High School at Bapatla,also in Guntur. He then obtained his M.A. in Mathematics from the Presidency College, Chennai and was a Research Scholar in the Department Mathematics of the University of Madras during 1940-1943. During 1943-46 he was a part-time Lecturer at Presidency College and obtained his Ph.D. during this time under Ananda Rau, who was with Ramanujan in Cambridge. Chandrasekharan then went to the Institute for Advanced Study, Princeton, U.S.A.

In 1949, while he was in Princeton, he was invited by Homi Bhabha to join the School of Mathematics of the Tata Institute of Fundamental Research. An extraordinarily gifted organiser and administrator of science, hetransformed the fledgling School of Mathematics of TIFR into a centre of excellence respected the world over. He initiated a very successful programme of recruitment and training of Research Scholars at TIFR. The programme continues to this day along the same lines that he set down. He put to excellent use his contacts with the leading mathematicians of the world, persuading many of them (like L. Schwartz, a Fields medalist, and C.L. Siegel) to visit TIFR and deliver courses of lectures over periods o f two months and more. The lecture notes prepared out of these lectures and published by TIFR enjoy a great reputation in the world mathematics community to this day.

During 1955-61, he was a member of the Executive Committee of the International Mathematical Union (IMU). He served as the Secretary of IMU during 1961-66 and as President during 1971-74. His initiatives over a long period of 24 years on this Committee were numerous and valued greatly. He served as the Vice President of the International Council of Scientific Unions during 1963-66 and as its Secretary General during 1966-70. He was a member of the Scientific Advisory Committee to the Cabinet, Government of India during 1961-66. He was awarded the Padma Shri in 1959, Shanti Swarup Bhatnagar Award in 1963 and the Ramanujan Medal in 1966.He was responsible for the IMU sponsoring the International Mathematical Colloquium held every 4 years at the Tata Institute starting 1956. In 1957 on his initiative, TIFR published the *Notebooks of Srinivasa Ramanujan.* In the fifties, Chandrasekharan held the editorship of the Journal of the Indian Mathematical Society. Thanks to his abilities at persuading some of the great names in the field to publish there, several great papers appeared in the journal during this period.

In 1965 he left TIFR and moved to Eidgerossische Technische Hochschule, Zurich.

He worked in the fields of number theory and summability. His mathematical achievements are first rate, but his contribution to Indian mathematics has been even greater.

BIOGRAPHY OF INDIAN SCIENTISTS

Meghnad Saha (1893-1956)

Meghnad Saha was born on 6 October 1893 in Sheoratali village near Dhaka in present day Bangladesh. His father Jagannath Saha was a grocer in the village. After primary education, he was admitted to a middle school that was seven miles away from home. He stayed with a doctor near the school and had to work in that house to pay for his boarding and lodging. Overcoming all these difficulties, he stood first in the Dhaka middle school test, thus securing a Government scholarship and joined the Dhaka Collegiate School in 1905.

Great political unrest was prevailing in Bengal, caused by the partition of the province by the British against strong popular opinion. Meghnad Saha was among the few senior students who staged a boycott of the visit by the then Governor, Sir Bampfylde Fuller and as a consequence forfeited his scholarship and had to leave the institution. He then joined the Kisori Lal Jubilee School where he passed the entrance test of the University of Calcutta standing first among students from East Bengal. He graduated from Presidency College with mathematics as his major.

He then joined the newly established Science College in Kolkata as a lecturer and pursued his research activities in physics. By 1920, Meghnad Saha had established himself as one of the leading physicists of the time. Histheory of high-temperature ionization of elements and its application to stellar atmospheres, as expressed by the Saha equation, is fundamental to modern astrophysics; subsequent development of his ideas has led to increasedknowledge of the pressure and temperature distributions of stellar atmospheres.

In 1920, Saha went to Imperial College, London and later to Germany. Two years later he returned to India and joined the University of Calcutta as Khaira Professor. He then moved to the University of Allahabad and remainedthere till 1938, establishing the Science Academy in Allahabad (now known as the National Academy of Science). In 1927, he was elected a Fellow of the Royal Society of London.

He returned to the University of Calcutta in 1938 where he introduced nuclear physics into the post-graduate physics curriculum. In 1947 he established the Indian Institute of Nuclear Physics (now known as the Saha Institute of Nuclear Physics). Later in his life, Saha played an active role in the development of scientific institutions throughout India as well as in national economic planning involving technology.

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RESEARCH ARTICLE

Effect of Manure on Some Characteristic of *Momordica charantia* (karela)

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ABSTRACT

Water is commonly the most limiting factor in intensive orchards all over the world. Consequently, drought stress is a situation fruit trees have to deal with frequently. The increasing worldwide shortages of water are leading to an emphasis on developing thrifty irrigation systems and planting resistant plants. In recent years there has been a wide range of proposed novel approaches to irrigation scheduling which are based on sensing the plant response to water deficit directly, as opposed to sensing the soil moisture status. Drought is the most important limiter factor in plant growth and products that is affected 40 until 60 percent agricultural land in the world. Surface application of manure or compost may be most advantageous for improving water infiltration but it results in very high P concentrations at the soil surface. The field experiment was laid out in split plot design with factorial design with three replications. Analysis of variance showed that the effect of manure on number and irrigation on all characteristics was significant except leaf size.

Key words: Irrigation, Leaf size, Number of leaves, Number of sub stem, Number of flower

INTRODUCTION

Water is commonly the most limiting factor in intensive orchards all over the world. Consequently, drought stress is a situation fruit trees have to deal with frequently. The increasing worldwide shortages of water are leading to an emphasis on developing thrifty irrigation systems and planting resistant plants. In recent years there has been a wide range of proposed novel approaches to irrigation scheduling which are based on sensing the plant response to water deficit directly, as opposed to sensing the soil moisture status (Jones, 2004). Plant responses to water deprivation are usually monitored on the level of selected physiological parameters which has been proven to be good indicators of

drought in several different studies. From total of land under stresses in the world is effected 26 percent from drought, 15 percent from cold (Christiansen. 1982) and 20 percent from salinity stress (Mcwilliam, 1986). Drought and salinity stresses are limiter factors in 1/3 of agricultural land in the world (Monti, 1987). Drought is the most important limiter factor in plant growth and products (Boyer, 1987) that is affected 40 until 60 percent agricultural land in the world (Bray, 1997; Nabors, 1990). Plant growth and productivity is adversely affected by various biotic and abiotic stress factors. Water deficit is one of the major abiotic stresses, which adversely affects crop growth and yield (Cheruth et al., 2008). Drought is a meteorological term and is commonly defined as a period without significant rainfall. Generally, drought stress occurs when the available water in the soil is reduced and atmospheric conditions cause continuous loss of water by transpiration or evaporation (Jaleel et al., 2007). Severe water stress may result in the arrest of photosynthesis, disturbance of metabolism and finally death of plant (Jaleel et al., 2008a). It reduces plant growth by affecting various physiological and biochemical processes, such as photosynthesis, respiration, translocation, ion uptake, carbohydrates, nutrient metabolism and growth promoters (Jaleel et al., 2008b; Farooq et al., 2008). It has been established that drought stress is a very important limiting factor at the initial phase of plant growth and establishment. It affects both elongation and expansion growth (Anjum et al., 2003; Bhatt & Srinivasa Rao, 2005; Kusaka et al., 2005; Shao et al., 2008). Drought stress, by disturbing the equilibrium relations between water and plant and the structure of cell biologic membrance m creates basic disorder in rice growth and decreases the performance. Most crops particularly during flowering phase to seed development are sensitive to water shortage stress. Even plants cultivating in dry and semidry regions are influenced by drought stress (Mitra, 2001) .Plants survival and production power of crops is greatly influenced by water accessibility and decreased due to decrease of this vital factor (Ozhur et al , 2009). Drought stress is one of the major abiotic stress in a agricultural worldwide 49.78 percent of crops are planted in rainfall in Iran due to water limitation and rate of rainfall. Productivity of crops in rain fed area in Iran is 42 percent of irrigated field Estimates of yield losses due to terminal drought range from 35 to 50% across the SAT and WANA (Sabaghpour, 2003) Drought is a meteorological term and is commonly defined as a period without significant rainfall. Generally drought stress occurs when the available water in the soil is reduced and atmospheric conditions cause continuous loss of water by transpiration or evaporation. Drought stress tolerance is seen in almost all plants but its extent varies from species to species and even within species. .Drought stress is characterized by reduction of water content, diminished leaf water potential and turgur loss, closure of stomata and decrease in cell enlargement and growth Severe water stress may result in the arrest of photosynthesis, disturbance of metabolism and finally the death of plant (Jaleel et al.,2008c). Drought impacts include growth, yield, membrane integrity, pigment content, osmotic adjustment water relations, and photosynthetic activity (Benjamin and Nielsen, 2006; Praba et al., 2009). Drought stress is affected by climatic, edaphic and agronomic factors. The susceptibility of plants to drought stress varies in dependence of stress degree, different accompanying stress factors, plant species, and their developmental stages (Demirevska et al., 2009). Water deficit is one of the most common environmental stresses that affects growth and development of plants (Shaw, 1988; Sadras & Milroy, 1996; Aslam et al., 2006). Drought continues to be a challenge to agricultural scientists in general and to plant breeders in particular, despite many decades of research. Drought, or more generally, limited water availability is the main factor limiting crop production. Drought is a permanent constraint to agricultural production in many developing countries, and an occasional cause of losses of agricultural production in developed ones (Ceccarelli & Grando, 1996). In shortage water conditions, water had been to use at critical growth stages. Thus, it is important to recognize these critical growth stages for any crops. In addition, one of the main goals in breeding program is selection of genotypes that had been high yield in drought stress conditions (Richards et al., 1993; Richards et al., 2002). Direct selection for yield is generally the simplest, most effective way to improve yield and hence WUE in all crops and the major share of the available resources for crop improvement should be devoted to direct selection for yield (Richards et al., 1993). A decrease in the relative water content (RWC) in response to drought stress has been noted in wide variety of plants as reported by Nayyar and Gupta (2006). Exposure of plants to drought stress substantially decreased the leaf water potential, relative water content and transpiration rate, with a concomitant increase in leaf temperature (Siddique et al., 2001) RWC was affected by the interaction of severity, duration of the drought event and species (Yang and Miao, 2010). However, application of chemical fertilizers caused the degradation of soil quality, such as soil acidification (Blake et al. 1999), soil hardening (Lai et al. 1992).

Increasingthe amount of organic manures amendments to agricultural soil was encouraged by scientists and local government. Several researchers reported that traditional organic manure (e.g. farmyard manure and green manure) can be potentially beneficial for soil physical, chemical and biological properties (Li and Zhang 2007, Ludwig et al. 2007, Liu et al. 2009). There is litter information; however, on the effect of animal excreta addition to soil quality in China.Animal excreta from modern intensive farms contains some harmful components, such as heavy metal, pathogenic microorganisms, and veterinary drugs (Zhang et al. 2005). Detrimental impacts on soil quality may occurr after long-term application of animal excreta. Soil physical properties, such as soil porestructure and aggregate stability, were the basal indicators to define soil quality. Soil pore plays a very important role in soil structure formation, soil moisture and nutrients maintaining, and microbial diversity protection, while aggregate stability has a positive impact on the seed germination, plant roots and shoots development. Soil biological and biochemical properties were often proposed as early and sensitive indicators of soil ecological stress or other environmental changes (Dick 1994). Manure application is often credited with improving soil physical properties with benefits such as reduced runoff and erosion, and these effects can persist for several years following manure application (Gilley and Risse 2000; Wortmann and Walters 2006). Celik et al. (2004) found that after five years of application of 25 t ha1 yr1 of manure or compost incorporated by moldboard plowing, the mean weighted diameter of water-stable aggregates was 65% greater for the 0 to 30 cm depth than where no manure or compost were applied. Aggregation was similar with compost and manure. They also observed reduced bulk density, increased macroand micro-porosity, and increased hydraulic conductivity after application of compost or manure. Available soil waterholding capacity was increased by 85 and 56% compared to the control for the 0 to 30 cm depth with compost and manure applied, respectively. Surface application of manure or compost may be most advantageous for improving water infiltration but it results in very high P concentrations at the soil surface. Much of this P may be protected from runoff due to the increased formation of waterstable soil aggregates associated with an increase in organic particulates with manure application (Six et al. 2000). While manure application does not always result in reduced runoff and erosion (Gilley and Eghball 1998), the effect is common enough to be considered as partly offsetting the effect of manure application on runoff P concentration (Angers 1998; Six et al. 2000; Whalen and Chang 2002). The importance of farmyard manure is being realized again because of the high cost of commercial fertilizers and its long term adverse effect on soil chemical properties. Besides supplying macronutrients and micronutrients to the soil (Negassa et al., 2001; Tirol-Padre et al., 2007), farmyard manure also improves the physico-chemical properties of the soil (Tirol-Padre et al., 2007). However, unless it is integrated with inorganic fertilizers, the use of farmyard manure alone may not fully satisfy crop nutrient demand, especially in the year of application (Patel et al., 2009). Animal manures are also useful in improving the efficiency of fertilizer recovery thereby resulting in higher crop yield (Gedam et al., 2008). Momordica is one of the important medicinal vegetable crops worldwide. It abundantly contains several phenolic compounds viz. gallic, chlorogenic, ferulic acids etcwith allelopathic activities, which are beneficial for human health (Singh et al., 2011).

MATERIALS AND METHODS

Location of experiment: The experiment was conducted at the nikshahr which is situated between 26° North latitude and 60° East longitude.

Composite soil sampling: Composite soil sampling was made in the experimental area before the imposition of treatments and was analyzed for physical and chemical characteristics.

Field experiment:The field experiment was laid out in split plot design with factorial design with three replications.

Treatments:Treatments included fertilizer (Cow Manure, Sheep manure, Chicken manure and fish manure) as sub plot and Irrigation (3, 5 and 7 days) as main plot.

Data collection:Data collected were subjected to statistical analysis by using a computer program MSTATC. Least Significant Difference test (LSD) at 5 % probability level was applied to compare the differences among treatments` means.

RESULTS AND DISCUSSION

Leaf size

Analysis of variance showed that the effect of Manure on leaf size was not significant. The maximum of leaf size of treatments cow manure was obtained (Table 1).The minimum of leaf size of treatments fish manure was obtained (Table 1).Analysis of variance showed that the effect of irrigation on leaf size was not significant. The maximum of leaf size of treatments 3 days was obtained (Table 1). The minimum of leaf size of treatments 7 days was obtained (Table 1).

Number of leaves

Analysis of variance showed that the effect of Manure on number of leaves was significant. The maximum of number of leaves of treatments cow manure was obtained (Table 1). The minimum of number of leaves of treatments fish manure was obtained (Table 1). Analysis of variance showed that the effect of irrigation on number of leaves was significant. The maximum of number of leaves of treatments 3 days was obtained (Table 1). The minimum of number of leaves of treatments 7 days was obtained (Table 1).

Number of sub stem

Analysis of variance showed that the effect of Manure on number of sub stem was significant. The maximum of number of sub stem of treatments cow manure was obtained (Table 1). The minimum of number of sub stem of treatments fish manure was obtained (Table 1). Analysis of variance showed that the effect of irrigation on number of sub stem was significant. The maximum of number of sub stem of treatments 3 days was obtained (Table 1). The minimum of number of sub stem of treatments 5 days was obtained (Table 1).

Number of flower

Analysis of variance showed that the effect of manure on number of flower was significant. The maximum of number of flower of treatments cow manure was obtained (Table 1). The minimum of number of flower of treatments fish manure was obtained (Table 1). Analysis of variance showed that the effect of irrigation on number of flower was significant. The maximum of number of flower of treatments 3 days was obtained (Table 1). The minimum of number of flower of treatments 5 days was obtained (Table 1).

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Table 1. Comparison of different traits affected by manure and irrigation

Treatment	Leaf size	Number of leaves	Number of sub stem	Number of flower
Manure				
Cow Manure	3.5a	48a	40a	38a
Sheep manure	3a	24b	16b	15b
Chicken manure	3a	30ab	18b	18b
fish manure	2.8a	28ac	16b	12b
Irrigation				
3 days	3.2a	40a	34a	30a
5 days	3a	28b	13b	15b
7 days	2.9a	27b	15b	17b
Any two means not sharing a common letter differ significantly from each other at 5% probability				

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RESEARCH ARTICLE

The Role of E-banking in Increasing Customer Satisfaction

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ABSTRACT

The present research aims to investigate the role of e-banking in increasing the satisfaction of Parsian Bank customers. This study is anapplied research in terms of objective, and a descriptive-survey research in respect of data gathering method.The study population includes those customers of Parsian Bank who have a bank account and use e-banking services.The research modelwas evaluated with a sample of 400 customers using cluster sampling method. Data analysis was based on descriptive statistics and inferential statistics by the use of SPSS software. The findings show that, with all the existing independent variables controlled, only the variables ease of use, security and support services have a significant effect on customer satisfaction. Considering the regression coefficients, it can be said that the greatest effectwas related to support services, then ease of use, and finally security.

Keywords:e-banking, ease of use, security, support services

INTRODUCTION

Banking is different from other industries, because the average relationship between the customer and the bank is longer than other industries. When a customer opens an account in a bank, his or her relationship with and dependenceon the bank will be increased. Customers may frequently write cheque, check their deposits, transfer money, pay servicing bills or withdraw money from their accounts. The Bank is also contact with them by continuously sending monthly reports (Sara Dogan, 2004).In other words, it refers to all the processes and technologies used by organization to identify, select, motivate, develop, maintain and service the customer. This technique involves the implementation of a comprehensive solution that establishes a relationship between the parties of all customer-related activities by integrating the people, processes, and technology (Mousavi and Rezayian,

2006). On the other hand, it can be considered as a wide and vase colloquial element encompasses four key stages of customer acquisition, retention, development and distinction. Customer retention is known as the most important element of them, because the retention of the existing customers is approximately five times less expensive than acquiring new customers (Helms, 2004).

Taking into account the customer relationship management can provide banks with countless benefits as follows:

1) Since customer is one of the most important assets of the bank, using this approach to maintain current customers and motivate them for readmission underlies the survival of the bank.
2) On the other side, the context has been provided for the bank by the emrgence of information technology to move toward intelligent and knowledge-based banks under the shade of customer relationship management. They can also reduce information processing costs by utilizing customer relationship management so that the communication with customers will be done in less time and greater speed. The end result is the increased competitiveness of the bank in today's turbulent environment.
3) Another advantage is that customer relationship management allows the classification of customers based on strategies and measures of the bank by collecting complete information of the customers in a database, and it can facilitate the objective of customer relationship management. Note that institutions are established to increase the asset value of shareholders and stakeholders, thus eliminating unprofitable customers can increase profits and reduce costs in the banks, unless there is concern in the meantime.

In a general view, human communicationtogether with respecting the client, creating a suitable, beautiful, warm and friendly environment with desired facilities for customer in the branches, considering the wishes and needs of customers, operations and activities in order to satisfy these needs and fulfill them, paying attention to the services quality and improving them, paying attention to the current customers in order to attract new customers and ... can lead the bank to create customer satisfaction, and also increase his or her loyalty level to the bank. In addition to the more benefits, the bank can present itself better and stronger in the competitive field. (Hassanzadeh and Sadeghi,2003)

Theoretical foundations of the research

E-banking

E-banking can be defined as an opportunity enables the customers to access to the banking services through secure interfaces without the need for physical presence.
Electronic banking is an essential tool for survival and led to a fundamental change in the banking industry all around the world. Today, banking services are provided to the customers in the shortest time only by clicking on the mouse. Customers are also able to choose different stores to meet their financial needs such that e-banking has become a strategic tool for the banks (Hassanzadeh and Sadeghi, 2003).E-banking technology can be introduced as the use of advanced technology of networks and telecommunication for the transfer of resources (money) in the banking system. In fact, e-banking means the optimal integration of all activities of a bank by utilizing modern information technology. E-banking is based on banking process and in accordance with the organizational structure of banks that allows the provision of all services needed by customers. Basically, e-banking refers tothe provision of access to banking services using a secure medium without the physical presence of an individual.

Electronic Customer Relationship Management

Electronic customer relationship management is marketing; sales and integrated-service strategy contributesto identify, acquire and maintain the customers as the company's greatest assets. Electronic customer relationship management is the result of fundamental changesin commercial beliefs and paradigms, and that is the change in organizations' approach from massive and general communication with different groups of customers to the single

and virtual relationship with each of them through ICT. In other words, this is the business strategy moving towards increased volume of trade exchanges. In fact, it can be said that electronic customer relationship management is the result of using web technology and Internet to facilitate, implement, and effectiveness of CRM systems (Sararfaziet al., 2007)

Conceptual model

The conceptual model of the research was constructed by careful study of the literature. The model has been shown in Figure 1.

Research hypotheses

First hypothesis: the ease of using electronicbanking has a positive effect on the increased customer satisfaction in Parsian Bank.
Second hypothesis: the design dimension electronic banking has a positive effect on the increased customer satisfaction in Parsian Bank.
Third hypothesis: the security of electronicbanking has a positive effect on the increased customer satisfaction in Parsian Bank.
Fourth hypothesis: the speed of transaction ofelectronic banking has a positive effect on the increased customer satisfaction in Parsian Bank.
Fifth hypothesis: the information contentof electronicbanking has a positive effect on the increased customer satisfaction in Parsian Bank.
Sixth hypothesis: the support services of electronic banking have a positive effect on the increased customer satisfaction in Parsian Bank.

Research Methodology

Given that this research has been performed to investigate the role of e-banking in customer satisfaction, it is an applied research in terms of objective, and a descriptive one owing to the fact that the this project has been implemented for further recognition of the current conditions and helping the process of decision making by mangers. In this study, the distribution type and characteristics of the customer'suse-banking services have been examined. Therefore, this study is a survey. Hence, this study is an applied research in terms of objective, and a descriptive-survey research in respect of data gathering method

Statistical Population and Sample

The population of this study is Parsian Bank customers in Tehran who have accounts in Parsian Bank branches and have used the e-services of the Bank. Cluster sampling method has been used in this research by in person presence in the branches. This is a sectional research in which sampling was only perfumed once during a limited period of time. So time is a factor not considered in this study. Data was gathered through a questionnaire. In this research, 500 questionnaires were distributed of which 100 of them were incomplete and 400 were analyzed.

Data analysis method

The method to analyze data from questionnaires to evaluate the research hypotheses was descriptive statistics and inferential statistics using SPSS software. The statistical method included Pearson correlation coefficient for the relationship between variables, determination coefficient and regression analysis to determine the effect of eache-banking factor on the customer satisfaction.

Data Analysis

Validity and reliability of the questionnaire

In this study, the following tools have been used to increase the validity.

1) The opinions of scholars;
2) The opinions of expertise in banking ;
3) Study of the articles used this questionnaire or other similar one.

The Cronbach alpha was used to determine the reliability of the questionnaire. Cronbach's alpha coefficients of research variables indicatethat the questionnaire have acceptable reliability. These coefficients include: ease of use (0.75), design (0.87), security (0.73), transaction rate (0.74), information content (0.79) and support service (0.81).It can be observed from above table that all the variables, except security and transaction rate, are effective on customer satisfaction. Now, we investigate that, with existing variables controlled, whether these variables are still effective on customer satisfaction. For this purpose, we have used multi-variable linear regression.Given the significance of the regression and the value of R2 = 82.3%, the results of the above table are as follows:
Controlling all the independent variables, only the variables ease of use, security and support services have significant effect on customer satisfaction. Considering the regression coefficients, it can be said that the most effects related to support services, then the ease of use and finally security.At last, it can be said by stepwise regression that, 81.7% of changes in customer satisfaction is expressed by security, ease of use, and support services. The final model can be written as follow:
(Security) × 0.281 + (ease of use) × 0.296 + (support services) × 0.605 + 0.579 = job satisfaction

CONCLUSION

The present research aims to investigate the role of e-banking in increasing customer satisfaction of Parsian Bank. Customer satisfaction is one of the most important and essential issues in today's organizations. Success or failure of the company is based on customer satisfaction of the products or services. Customer satisfaction can increase customer loyalty and loyal customers, so they will spend more money on the products or services. They will encourage others to buy from this organization and are willing to pay the higher cost for the purchase of these products. In addition, customer satisfaction increases repurchases and reduces customer complaints. Happy customers are less sensitive to price, they purchase byproducts, and they are loyal and less affected by competition. Banking is different from other industries, because the average relationship between the customer and the bank is longer than other industries. When a customer opens an account in a bank, his or her relationship with and dependence on the bank will be increased. Customers may frequently write cheque, check their deposits, transfer money, pay servicing bills or withdraw money from their accounts. The Bank is also contact with them by continuously sending monthly reports.The findings show that with all the independent variables controlled, only the variables ease of use, security and support services have significant effect on customer satisfaction. Considering the regression coefficients, it can be said that the most effectis related to support services, then the ease of use and finally security.

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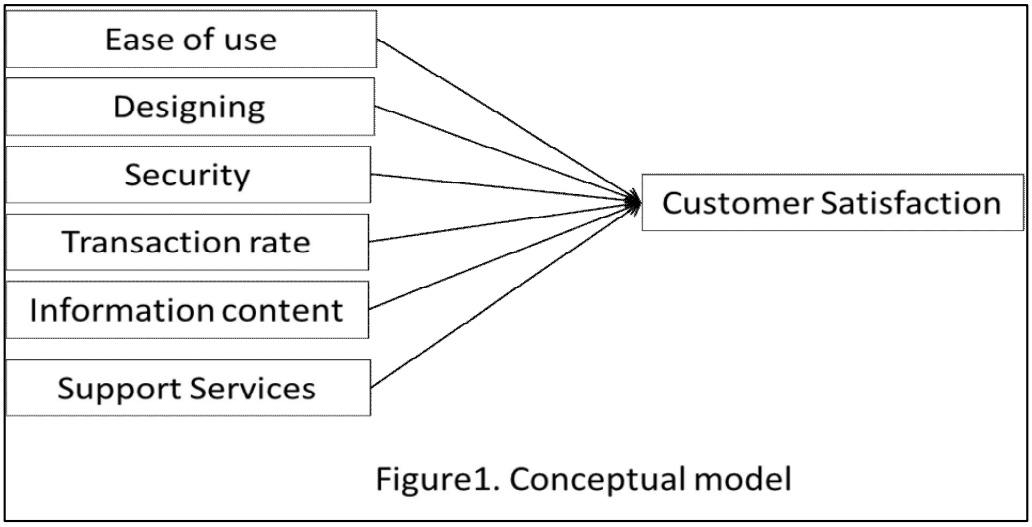

Figure1. Conceptual model

Table .1.Descriptive Statistics of Research Variables

	Mean	Standard deviation	Minimum value	Maximum value
Ease of use	5/6	1/08	1/33	6/67
Design	5/26	1/04	1/67	6/67
Security	5/74	0/83	3/5	7
Transaction rate	5/62	0/997	2/67	7
Information content	5/49	0/96	2/25	7
Support services	5/08	1/16	1	7
Customer satisfaction	5/77	1/04	1	7

Table.2.To investigate these hypotheses, it was first determined if there is a significant relationship between the independent variables and customer satisfaction.

	Correlation coefficient	**Probability**
Ease of use	0/645	0/000
Design	0/624	0/000
Security	0/238	0/14
Transaction rate	0/291	0/068
Information content	0/757	0/000
Support services	0/838	0/000

Table 3.Multi-variable linear regression for customer satisfaction

	Standardized regression coefficient	**Test statistic**	**Probability**
Ease of use	0/338	2/806	0/008
Design	-0/097	-0/757	0/455
Security	0/215	2/547	0/016
Transaction rate	0/004	0/048	0/962
Information content	0/101	0/773	0/445
Support services	0/641	5/12	0/000