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# Designing the model of public trust evaluation (with emphasis on effective factors on electronic interaction of people and government)

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### CHRONICLE Abstract

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### Keywords:

- \* Public trust
- \* political trust
- \* policy-orientation
- \* architect-orientation
- \* balance-orientation
- \* functionalism

The main purpose of this research is to design the model of public trust evaluation. In order to identify the indexes and components, Q-technique has been used. Due to this, the discourse forum was collected by using of the research literature. Then the introducer sample of discourse forum was formed by using of the experts', comments. Finally, with collection and analysis of the parliament group's comments, four mental models (functionalism, architect-orientation, policy-orientation and balanceorientation) were identified. Each one of the mental models emphasized on special aspects and factors in the public trust evaluation and somehow, they were as the representative of special thought in the society. In the second stage of the research, the model fit was studied by using of the confirmatory factorial analysis and it was confirmed. In order to evaluate the amount of public trust, a phased deduction system should be designed that was realized by using of Q-method output, the factorial analysis and weighting the factors of each mental model by using of AHP technique. This model was formed from 88 indexes in the frame of 28 factors, ten components and four dimensions (mental models identified) and final output (public trust). The rules, laws and membership function of phased deduction system were written for the public trust by using of experts, comments and 648 laws were extracted. And this system was designed by using of MATLAB software.

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### 1-Introduction

The relations between government and people are as one of the most effective arenas in which the trust issue is proposed, and it is named as the public trust. In Kramer's belief, public trust gradually is moving from a small and marginal actor toward being converted to the main actor in the demonstration center of contemporary organizational theory (Kramer, 1996). Public trust means that public people expect authorities and employees governmental organizations in interaction with public people to give positive response to their expectations by their acts. In other words, public trust means the public expectation from receiving desired response to their demands by administrators of public affairs (Zucker, 1989: 59). Existence of trust in this section facilitates relations between people government and causes its stability and survival. The relations based on trust will embrace benefits both for truster and trustee. In this same relation, some endowments like establishment of security, order, direct or indirect political, economic, cultural and social benefits, constant relation lack of separation from government and presentation suggestions and comments for more improvement of different affairs can be accounted for the people who trust and this trust can have some advantages for trustee and survival such as durability government without resorting to violence, people satisfaction, trust of people's support in the sensitive political, economic, social and cultural decisions (Rousseau, 1998). Therefore, the level of public trust to the government is important for the managers and agents of each political system, because it plays axial role in supporting the compilation and execution of public policies and also effective

accompaniment and cooperation of citizens (Gordon, 2000: 296). The relationship of the administrators in the public section affairs on one hand and citizens on the other hand increases the amount of success and progress of the society's affairs and indifference and separation of people from government can cause the policy-makers and managers to face with very failures (Danaiefard, 2002: 41). Therefore, public trust is a public commodity that if it is defaced, the society as a generality will incur losses and it will be overthrown. Therefore, decline of public trust is one of the axial problems of governments in different countries. Undoubtedly, it can be said that the level of people's trust to the government is one of the components of each political system governance and the base of its legitimacy; and defacement of it in long-term will unsteady the foundation of each political system but this point should be also mentioned that much amount of trust will not be also constructive and proportional with the conditions of each society, a special amount of trust which causes to increase the government function (optimum trust) should be identified and excessive trust to the government can cause harmful results for people. The general purposes that we seek to achieve them in this research are as follow:

- -Designing the model related to the evaluation of public trust to the government.
- -Comprehensive identification of effective factors on public trust of people to the government, designing a systematic model for explaining the role and determining the effect of each one of effective factors on public trust to the government.
- -Identification of the role of public trust of people to the government in explaining the public trust.



### Material and methods

### 2-A review on former researches

The results of former researches indicate that the political trust levels have difference among different countries. Undoubtedly, one of the important causes of such a difference can be searched in the manner of function and accountability of governments to the people's claims. When the countries located in different geographical regions and nations are compared with each other from this view, such differences are appeared clearly. Generally, political trust is less in higher industrial countries and less developed countries like Latin America and Eastern Europe. When we study the relations related to the trust element in the country levels, we find out that social factors and variables like interpersonal trust-(social trust) and membership in the communities and groups- social capital dimensions- probably have positive effect on political trust. This points indicates that political trust and social capital follow equal route and a strong relation is governing between them. Of course, the role of institutes located in a political system is also significant in this field. In fact, political components like the kind of political-administrative and historical system of democracy in these countries

have determining role in explaining the level of public trust to the governments. The researches indicated that the amount of public trust among the nations with longer democratic customs and traditions and parliament political systems generally has a high level. While the dictatorial political systems in comparison with parliament systems in general form cause less trust. In relation with economic variables, it should be also acknowledged that the development level of a country in relation with trust is important; In other words, it seems that in the countries with the levels of high economic development, political trust is also higher. About the economic development relations, it can be suggested that in the societies with the levels of higher economic development, the amount of political trust is also more. Also among many researches, the important role of communications information and technology in determining the amount of people's trust to the government and orientation of it is emphasized. Finally, it should be said that there are also many evidences about the relation of the amount of political corruption and trust. Perhaps, it can be claimed that this variable is more important than many other factors in this field. Therefore, a relatively comprehensive model of the effective factors on public trust can be suggested in the frame of a multi-dimensional classification. In the continuation, a list of former researches done about public trust is presented in different fields:



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Table 1-The summary of domestic researches about trust publicly and generally

|   | Research title   | Researcher   | Year | Factors under study  | The result related to the trust discussion  |  |
|---|--|--------------|------|--|---|--|
| 1 | Trust to the TV  | Purmohammadi | 2000 | -Extra-organizational<br>factors<br>-Intra-organizational<br>factors<br>-Personal factors                          | -Trust in television is in high extent  |  |
| 2 | Social<br>commitment<br>of youth and<br>the effective<br>factors on it         | Parchami     | 1995 | Social commitment  | -The amount of youth trust has significant and direct relation with social commitment   |  |
| 3 | Social<br>satisfaction<br>and the<br>effective<br>factors on it                | Safdari      | 1995 | Satisfaction of personal<br>conditions, social,<br>economic and political<br>satisfaction                          | -Political distrust is in high extent -Trust has direct and significant, strong and direct correlation with social satisfaction variable                |  |
| 4 | Universality<br>and the<br>effective<br>factors on it                          | Hashemi      | 1994 | The suspicion sense of person to the vaster groups in comparison with small familial, ethnic and friendship groups | -There is significant and direct<br>relationship among the birth<br>place of responders, universality<br>and generalized trust.                         |  |
| 5 | The amount of<br>students' trust<br>to the persons<br>inside the<br>university | Shakiba      | 1997 | -Trust in others honesty<br>-faith in others secrecy   | -Trust in the professors base is<br>more than all and trust in<br>employees bae is less than all  |  |
| 6 | Social capital erosion in Iran   | Tahghigh     | 2003 | Inefficiency in the government of dependent institutes, informing system.  | -Reduction of social capital in Iran is the result of function of government and the institutes risen from it namely executive and judicial institutes. |  |

Table 2-The summary of domestic researches especially about public and political trust

|   | Research<br>title                    | Researcher | Year | Factors under study   | The result related to the trust discussion  |
|---|--------------------------------------|------------|------|---|---|
| 1 | Political trust<br>and<br>legitimacy | Yousefi    | 2010 | -Legitimacy in the huge<br>level<br>-Political trust in actors<br>level   | -Comparative average of political trust in Tehran, Mashhad and Yazd is in order 34, 41 and 42Increase of religious sense means the increase of political legitimacy of the system |
| 2 | Reduction of political trust         | Malekpur   | 2002 | -Trust to the authorities in<br>solving the problems<br>Trust in governmental<br>organizations<br>-Social trust | -Political distrust is the result of insecurity and also disability of the society and government in supplying the rights and demands of people                                   |



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| 3 | The effect of<br>religiousness<br>on political<br>trust | Shayegan   | 2007 | -Political trust (three<br>dimensions of Britzer<br>model)<br>-Different kinds and levels<br>of religiousness   | -Different kinds and levels of<br>religiousness are effective on the<br>amount of political trust and the<br>manner of explaining it   |
|---|---|------------|------|---|--|
| 4 | The main effective factors on political trust           | Heydari    | 2008 | Political trust (Britzer model)   | -The factors like religiousness,<br>material and psychic values,<br>special-orientation, universalism,<br>the amount of participation, are<br>effective on the amount of political<br>trust of students. |
| 5 | Public trust<br>to the<br>governmental<br>organizations | Danaiefard | 2004 | Different dimensions of accountability in governmental organizations, public trust to the governmental organizations, index of the customer satisfaction amount | -Accountability of governmental organizations leads to increase the people satisfaction that in turn causes to increase the amount of public trust to the government and governmental organizations.     |

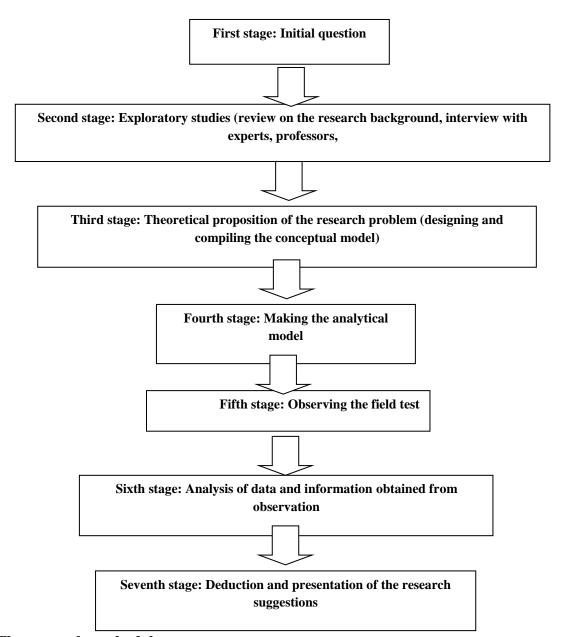
Table 3- The summary of foreigner researches done about public and political trust

|   | Research<br>title                           | Researcher                              | Country   | Year | The factors under study  | Result  |
|---|---|---|-----------|------|--|---|
| 1 | Social<br>capital and<br>political<br>trust | Putnam                                  | Italy     | 2000 | Social participation-<br>relation with communities<br>and political trust  | Whatever the society is more civil,<br>social capital is more and<br>consequently political and social<br>trust is more           |
| 2 | Political<br>trust and<br>social<br>capital | Britizer                                | Sweden    | 2002 | Trust in the political society basis, political institutes and actors  | -High social trust leads to create<br>high political trust and consequently<br>effectiveness sense on political<br>decisions      |
| 3 | Political<br>trust and<br>participation     | Schiffman                               | America   | 2002 | Trust in political regime,<br>administrators of affairs<br>and todays political<br>discussions in the society                              | Political trust is the result of persons-<br>credit, their expertise, power and<br>ability and also similarity with<br>addressees |
| 5 | Religion<br>and political<br>trust          | Christianity<br>researches<br>institute | Australia | 2004 | Political and social institutes  | -Higher social trust leads to high political trustCommon beliefs (religion) lead to increase the political trust.                 |
| 7 | Public trust<br>to the<br>government        | Sims                                    | -         | 2001 | Corruption of leaders and their ethical incompetence, negative view of people to the authorities, complexity and large size of government, | -He mentions the increase of public awareness, as the social factors of political distrust to the government.                     |



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| 8 | Maintaining<br>the public<br>trust | Kane |  | 2001 | Receiving gifts and rules<br>of employees and<br>government, abuse of<br>properties and<br>information, favoritisms,<br>dishonesty and damages<br>of authorities, | -He indicates that public trust is an important part of social texture of each nation and tries to indicate the most important distrust factors in people that some of them were mentioned. |
|---|------------------------------------|------|--|------|---|---|
|---|------------------------------------|------|--|------|---|---|



## 3-The research methodology

intended process in this research with regard to the stages of scientific method For doing the current research, a specified process has been traversed which is observed in the following Fig. Totally, the



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suggested by Kiwi and Kampenhud has included 7 general stages as follows

Fig 1- Operational stages of doing the research (Kiwi and Kampenhud, 2002, 208)

In this research, a model has been presented that through it with presenting a systematic frame, all effective factors on people's trust to the government are classified into three main groups of direct, indirect and electronic factors. The factors related to the direct interaction of government and people include the role of people in selection deposal and control process, on government's capacity for compiling and executing the policies, people's respect to the institutes governing on economic and social interactions.

Indirect factors in this research have been named as environmental strategic and with inspiration of PEST model, they have divided to four groups of political-legal, economic, cultural-social and technical or technological factors. And finally a new variable entitled the factors related to the electronic interaction of people and government including two groups of hardware and software factors has been considered in this research.

The statistical population of this research has included the employees and visitors of the ministry of welfare and social security, ministry of education in the regions 6 and 7, railway company, employees of Shafa pharmacy company, managers of Bahman group staff, experts of Mellat insurance company and students of Allameh Tabatabaie that the statistical sample has been selected from them randomly and the

questionnaire obtained from Q-method has been distributed among them. With regard to the vast spatial realm and large size of statistical population, the population size preferably was assumed unlimited and for increasing the trust, the number of total sample needed was calculated according to the statistical formula of sampling from unlimited population. Meanwhile, in this research, the professors and experts in the domains related to the current research have been used with ideas of supervisors and consultants in the frame of Q-technique.

# The main methods of data and information collection in this research are:

1-Interview; 2-questionnaire; 3-library studies studying the research and background (studying existing the documents) and 4-receiving the ideas of different groups related to the research by using of Q-technique and finalizing the components and indexes of public trust evaluation.

The analysis methods were selected with regard to the indexes of being customary, efficiency and ease in applying; therefore for making phased, phased average and phased deduction, in order trigonometric function, the method introduced by Bojadziev and field method have been used. All mathematical operations are done by MATLAB software. If the model error is



acceptable, the modeling process will be ended, otherwise the former stages should be revised and the necessary reforms should be accomplished. After being ensured of correctness of compiled model, it is tested in the governmental section.

### 4-Results and discussion

### 4-1-Q-method

In order to identify the effective factors on public trust, Q-method was used. The origin of this method should be searched in a constructivist view. Q-method has been formed from 5 phases. At first, the discourse forum which includes a set of various issues related to the research subject was figured in the form of 180 interpretations through interview with professors of Tehran University, studying all written and non-written issues of websites, electronic education journals, sessions held related to the research subject and searching in the related scientific and university researches. With help of three experts in this field, the number of interpretations was reduced from 204 to 123 items and at the end, the phrases which had the meaning distinct with other phrases were selected. In the third phase, with evaluation and deduction of the discourse space contents, it should be organized and a sample of phrases should be selected from them as Q-sample. McKeon and Thomas have suggested a number between 30 to 100 phrases for Q-sample. By using of experts' ideas, the number of interpretations was reduced for many reasons. According to the experts, suggestion, the interpretations were classified for increasing the study ability. After several times of study and interview with experts, the number of interpretations was reduced to 123 interpretations.

Selection of participants was done purposefully; namely the persons of discourse inhabitants were selected for participation who had special relation with the subject for some reasons such as educational, occupational, empirical,.... At current research, these persons were selected from governmental managers (policy executors), parliament members (policy-makers), professors of Tehran Universities and normal people (influenced from policies) that from 40 participants, 30 persons took part in the interview session and in addition to execute Q-arrangement stages, responded to the researcher questions (Khoshguyanfard, 2007).

Q-arrangement was done in Tehran city and it was continued from the middle of November 2013 till the end of March of the same year in which participants after studying the cards, arranged them according to the Q-instruction diagram. In this stage, the participants will arrange and classify Q-class cards. In fact, this is the data collection stage.

For identification of mental models, Q-ranking and arrangement was done and SPSS analysis was done by experts and by using of Q-factorial software. For doing the factorial analysis, correlation matrix was used. The factors were extracted by the main component method and they were rotated five rounds by Varimax method. The factorial analysis method is the most main statistical method for analysis of Q-data matrix.

The research data after analysis clarified four mental models about public trust and the obtained models were named and analyzed according to the important distinguisher interpretations of this type that in the continuation, the results related to them will be expressed.

# **4-2-Demographics** features of responders and statistical population



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Demographics features of responders and statistical population in terms of gender, age, marriage status and education will be presented in the following

.

Table 4- Frequency and frequency percent of sample in terms of gender

| Gender | Frequency | Frequency percent |
|--------|-----------|-------------------|
| Man    | 240       | 40.7              |
| Woman  | 165       | 59.3              |
| Total  | 405       | 100               |

Table 5- Frequency and frequency percent of sample in terms of age

| Age                  | Frequency | Frequency percent |
|----------------------|-----------|-------------------|
| Less than 20 years   | 12        | 3                 |
| 20-30 years          | 217       | 53.6              |
| 30-40 years          | 118       | 29.1              |
| 40-50 years          | 36        | 8.9               |
| Higher than 50 years | 22        | 5.4               |
| Total                | 405       | 100               |

Table 6- Frequency and frequency percent of sample in terms of marriage

| Marriage status | Frequency | Frequency percent |
|-----------------|-----------|-------------------|
| Single          | 209       | 51.6              |
| Married         | 196       | 48.4              |
| Total           | 405       | 100               |

Table 7- Frequency and frequency percent of sample in terms of education level

| Education level   | Frequency | Frequency percent |
|-------------------|-----------|-------------------|
| Below diploma     | 6         | 1.5               |
| Diploma           | 58        | 14.3              |
| Associate degree  | 24        | 5.9               |
| Bachelor's degree | 194       | 47.9              |
| Master degree     | 110       | 27.2              |
| PhD               | 13        | 3.2               |
| Total             | 405       | 100               |

# 4-2-Designing the phased deduction system for evaluation of the public trust amount

With regard to this issue for designing the phased deduction system, we are facing with the variables limitation for defining the phased laws, in this part of research for



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designing the final phased deduction system, we will act in the following form that we will define a phased deduction system for each mental model. Finally, we use of the output of these four systems as the input of phased deduction system of public trust. It is worth noting that the tool used in this part will be phased logic toolbox of MATLAB software.

In the first stage, designing the phased deduction system was done functionalism approach. Three factors of the role of people in the selection process, disposal and control on government, government capacity for compiling and executing the policies and people's respect to the institutes governing on economic and social interactions are considered as the input of system and mental model of functionalism is considered as the output of the system. Each one of these factors which have been considered as input are influenced from other factors of the model. Therefore, at first, designing the phased deduction system was done for them. After designing the phased deduction system for the role of people in the selection process, disposal and control on government and government capacity for compiling and executing the policies and people's respect to the institutes governing on economic and social interactions, the phased deduction system of mental model of functionalism was designed.

In the next stage, designing the phased deduction system for the balance-orientation approach has been done and four political, economic, cultural-social and technological factors were considered as the input of the system and balance-orientation was considered as the output of

the system. In this stage, also with regard to the effectiveness of other factors on considered inputs, at first designing the phased deduction system was accomplished for them.

Third stage of designing the phased deduction system has been for policy-orientation approach that three factors of trust in the political system, trust in institutes and trust in agents have been considered as the input of system and other effective factors on them have been also included in designing the system and finally the policy-orientation approach has been considered as the output.

Fourth stage related to design the phased deduction system is for architectorientation approach in which two and software factors hardware are considered as the input of system and architect-orientation approach is considered as the output of the system.

## **4-3- Definition of phased deduction rules of public trust**

For designing the phased deduction system, we need to write the phased deduction rules. The phased deduction rules are expressed in the form of if-then relations. These rules indicate the manner of relation of defined phased sets with each other and the manner of their effectiveness on the level of people's role in the process of selection, disposal and control government. In order to define the phased deduction rules, we used of questionnaire analysis. Therefore, we used of obtained weight for the factors and we obtained the weight of factors to one another with considering the calculated average.

Table 8- The weight of public trust factors





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| Functionalism         | 0.315 |
|-----------------------|-------|
| Balance-orientation   | 0.300 |
| Policy-orientation    | 0.265 |
| Architect-orientation | 0.120 |

After determining the weight of variables to one another, now it is the time of determining the linguistic variables coefficient which will be used as the foundation of work for designing the phased deduction system. Clearly, the experts idea will help us in writing these rules directly. With regard to this issue that we have two input variables and also we have considered three levels for each input variable, totally we will have 3<sup>4</sup> namely 81 phased deduction rules. Each one of these

rules considers a combination of inputs. With regard to the experts, idea, we should determine the intended output for each combination of inputs. With this purpose, we divide the range of 0-1 between three linguistic variables equally and for each one of them, we consider the number of its high spectrum as the linguistic variable coefficient which is a fixed number for input variables. This coefficient helps us in determining the output level for each combination of input.

Table 9- Final coefficient of linguistic variable of public trust factors

| Linguistic variable | Final coefficient of each linguistic variable |
|---------------------|---|
| Weak                | 0.3333  |
| Normal              | 0.667   |
| Strong              | 1   |

In order to determine each output level for each special combination of inputs, at first we should calculate the phased number for each level of input variable. This number is obtained through relative weight of input variable (which is different in different factors according to the experts idea) multiplied by final coefficient of its linguistic variable (which is equal for all factors). Therefore, we will have three phased numbers for each one of the input variables. In fact, each level of these

numbers describes a three-part range for each variable. The relative weight of each factor which has been obtained from experts idea, has been calculated for three membership functions of that factor equally which causes to decrease or increase the effect of that factor in writing the phased deduction rules. We name each one of the cells of following table as a phased number that in the next stages according to them, the phased deduction rules will be defined.

Table 10- Phased numbers of linguistic variable of public trust factors

| Input variable      | Linguistic variable |        |        |
|---------------------|---------------------|--------|--------|
|                     | Weak                | Normal | Strong |
| Functionalism       | 0.104               | 0.210  | 0.315  |
| Balance-orientation | 0.09                | 0.2    | 0.3    |



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| Policy-orientation    | 0.088 | 0.17 | 0.265 |
|-----------------------|-------|------|-------|
| Architect-orientation | 0.03  | 0.08 | 0.12  |

the same linguistic variable. About the weight of each rule which should be considered in MATLAB software, since we have defined all possible rules and we haven't eliminated any rule, we should consider the weight of all rules equal to one and we should design the intended system with maximum precision.

In the next stage, we obtain the total of phased numbers for each combination of rules. This number which has been indicated in the fourth column of the table, helps us in determining the output level for that special combination of inputs. In this form that if the intended number is placed in the range related to each linguistic variable, the output level will be equal to

Table 11- Making the deductive rules of public trust factors

| Row | Functionalism | Balance-<br>orientation | Policy-<br>orientation | •      |       | Phased numbers |       |       | f phased<br>ibers | Public<br>trust |
|-----|---------------|-------------------------|------------------------|--------|-------|----------------|-------|-------|-------------------|-----------------|
| 1   | Weak          | Weak                    | Weak                   | Weak   | 0.104 | 0.09           | 0.088 | 0.03  | 0.312             | Weak            |
| 2   | Weak          | Weak                    | Weak                   | Normal | 0.104 | 0.09           | 0.088 | 0.08  | 0.362             | Weak            |
| 3   | Weak          | Weak                    | Weak                   | Strong | 0.104 | 0.09           | 0.088 | 0.121 | 0.403             | Normal          |
| 4   | Normal        | Weak                    | Weak                   | Weak   | 0.210 | 0.09           | 0.088 | 0.03  | 0.418             | Normal          |
| 5   | Normal        | Weak                    | Weak                   | Normal | 0.210 | 0.09           | 0.088 | 0.08  | 0.468             | Normal          |
| 6   | Normal        | Weak                    | Weak                   | Strong | 0.210 | 0.09           | 0.088 | 0.121 | 0.509             | Normal          |

| 30 | Weak   | Normal | Weak   | Normal | 0.104 | 0.2 | 0.088 | 0.08 | 0.472 | Normal |
|----|--------|--------|--------|--------|-------|-----|-------|------|-------|--------|
| 31 | Weak   | Normal | Normal | Normal | 0.104 | 0.2 | 0.17  | 0.08 | 0.554 | Normal |
| 32 | Weak   | Normal | Strong | Normal | 0.104 | 0.2 | 0.265 | 0.08 | 0.649 | Normal |
| 33 | Normal | Normal | Weak   | Normal | 0.210 | 0.2 | 0.088 | 0.08 | 0.578 | Normal |
| 34 | Normal | Normal | Normal | Normal | 0.210 | 0.2 | 0.17  | 0.08 | 0.66  | Normal |
| 35 | Normal | Normal | Strong | Normal | 0.210 | 0.2 | 0.265 | 0.08 | 0.755 | Strong |

| 51 | Normal | Strong | Weak   | Strong | 0.210 | 0.3 | 0.088 | 0.121 | 0.719 | Strong |
|----|--------|--------|--------|--------|-------|-----|-------|-------|-------|--------|
| 52 | Normal | Strong | Normal | Strong | 0.210 | 0.2 | 0.17  | 0.121 | 0.801 | Strong |
| 53 | Normal | Strong | Strong | Strong | 0.210 | 0.3 | 0.265 | 0.121 | 0.896 | Strong |
| 54 | Normal | Strong | Weak   | Strong | 0.210 | 0.3 | 0.088 | 0.121 | 0.719 | Strong |
| 55 | Normal | Strong | Normal | Strong | 0.210 | 0.3 | 0.17  | 0.121 | 0.801 | Strong |
| 56 | Normal | Strong | Strong | Strong | 0.210 | 0.3 | 0.265 | 0.12  | 0.896 | Strong |

| 76 | Strong | Strong | Strong | Normal | 0.315 | 0.3 | 0.265 | 0.08  | 0.96  | Strong |
|----|--------|--------|--------|--------|-------|-----|-------|-------|-------|--------|
| 77 | Strong | Normal | Strong | Strong | 0.315 | 0.2 | 0.2   | 0.12  | 0.835 | Strong |
| 78 | Strong | Strong | Normal | Strong | 0.315 | 0.3 | 0.17  | 0.121 | 0.906 | Strong |
| 79 | Weak   | Strong | Strong | Strong | 0.104 | 0.3 | 0.265 | 0.12  | 0.789 | Strong |
| 80 | Strong | Normal | Normal | Strong | 0.315 | 0.2 | 0.17  | 0.12  | 0.805 | Strong |
| 81 | Strong | Strong | Strong | Strong | 0.315 | 0.3 | 0.265 | 0.12  | 1     | Strong |



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By using of above table, each output level was calculated for each input combination. In this stage, we should define the phased deduction rules by using of logical toolbox in MATLAB software.

### 4-4- The system test

We calculate approaches of the functionalism, balance-orientation, policyorientation and architect-orientation by inserting the weight of factors in the phased logic toolbox of MATLAB software which can be observed in the following Figs. Of course, these Figs only indicate a limited number of rules. Due to the large number of rules, we can not indicate all of them. In the following Figs, each one of the lines indicates one rule and each column of Figs is related to an input variable which has been indicated with yellow color in the left side and also if it is related to the output variable, it will be indicated with blue color on right side of the page. The system input can be also determined by typing the amount of input variables in the box down side of the page and also vertical red lines can be used for regulating the input.

After determining the input level, the rest of the works is accomplished automatically by the software and finally it delivers us the output variable. In fact, software after the inputs level, checks the phased deduction rules determined in former stages and then it specifies the output level by finding the rules corresponding to the inputs received by user and taking the common area under the inputs diagram. Then the output should become non-phased to indicate the public trust level in the form of a number. For making it non-phased, the method of center

of gravity is used. The center of gravity is a point that the areas of its left side and right side under the curve are equal and this work is done automatically by software. As it is observed in the following Fig, with inserting the weight of functionalism approach factors as the input of phased deduction system of functionalism, after making non-phased, the number of 3.56 was obtained as the functionalism score that with referring to the output membership functions of this phased system, it is specified that this number is "normal" in the membership function. The score of policymaking approach is 2.58 which is normal in the membership function. The score of balance-orientation approach is 2.43 which is "normal" according to the membership function. The architect-orientation approach has also obtained the score of 3.29 which is normal according membership function.

Finally with regard to obtain different approaches to the public trust, we can use of these four numbers as the input of final system. We observe the final result and general level of public trust in the following Fig.

As it is clear in the following Fig, after inserting the inputs and making them non-phased, the number of 2.83 was obtained as the final level of public trust. Basically, it can be said that the final output is the reunion of all commonalities in the former stages. With referring to the output membership functions, it is specified that this number is the member of normal membership function.



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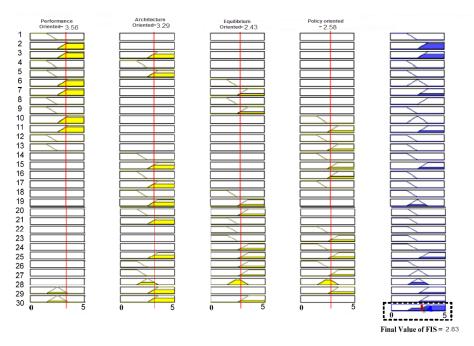


Fig 2- The amount of public trust

## 4-5- Validation of the model by using of the limitative conditions test

In this test, the input variables of each FIS have been changed in different states (very much and very little) and the amount of model sensitiveness is studied in facing with these changes. For sample, if we consider designed FIS for evaluation of

public trust (Shae 3-9) which has four inputs (functionalism, balance-orientation, policy-orientation and architect-orientation) and its output also indicates the public trust, as it is evident in the table 4-116, the model in facing with the changes of input variables from very little (zero) up to very much will present a completely logical behavior.

Table 12- The effect of simultaneous changes of functionalism, policy-orientation, balance-orientation and architect-orientation on public trust

| Public<br>trust      | Architect-<br>orientation | Policy-<br>orientation | Balance-<br>orientation | Functionalism | The amount of reduction or increase |
|----------------------|---------------------------|------------------------|-------------------------|---------------|-------------------------------------|
| 2.8352               | 3.2934                    | 2.5885                 | 2.4347                  | 3.5653        | 0                                   |
| 1.9462               | 2.96406                   | 2.32965                | 2.19123                 | 3.20877       | -10%                                |
| 3.8089               | 3.62274                   | 2.84735                | 2.67817                 | 3.92183       | 10%                                 |
| 1.0379               | 1.6467                    | 1.29425                | 1.21735                 | 1.78265       | -50%                                |
| 5.0998               | 4.9401                    | 3.88275                | 3.65205                 | 5.34795       | 50%                                 |
| <mark>0. 9764</mark> | 0.32934                   | 0.25885                | 0.24347                 | 0.35653       | -90%                                |
| 6.2034               | 6.25746                   | 4.91815                | 4.62593                 | 6.77407       | 90%                                 |



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Clearly, this test has been also executed for four Sub-FIS and FISs of public trust evaluation and all mentioned FISs have presented logical behavior to the limitative amounts of inputs from themselves which indicates the validity of the designed model.

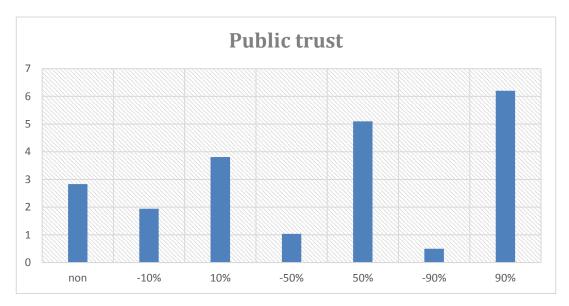


Fig 3- The effect of simultaneous changes of functionalism, policy-orientation, balance-orientation and architect-orientation on public trust

As we observe and infer from the table and diagram, with change of input variables in the model made for evaluation of public trust in defined domain (10%, -10%, 50%, -50%, 90% and -90%), the model output is also changed. The changes are different for different changes domains.

### 5-Conclusions

1-At current research, four approaches (mental model) have influenced on public trust that their information was collected through O-method and the researcher summarized it. These four approaches can be known as the representative of thoughts existing in the society that each one is represented by a stratum of the society. The first group includes the persons who know that the behavior and function government with people are very effective in attracting the public trust. From the view of this group, the accountable, just, effective, legal, meritocratic behaviors which are far from political corruption and in the stable political context generate the people's trust to the government. Second group includes the persons who consider

comprehensive the balance and development of country in economic, political social, and technological dimensions and they believe that movement in each one of these dimensions deprives the government from support and trust of a part of society and it is necessary that the government in its behavior and actions to consider the balanced development in the agenda of its activities so that the realization of some values not to cause to eliminate other values. This group hasn't known each one of economic, political, and technological dimensions social superior over another. Third view represents a group that introduces the administration as the follower of policies and considers that administration receives its acceptability and popularity from policies and trust of people to the government is a function of government and related politicians, action. Fourth **group** knows the information technology as the origin of transformation in the government and it knows the change of government architecture as the solution for increasing the people's trust to the government because this factor is even effective on direct interactions of people and government. Therefore, it can be said that this research has succeeded in its attempt for covering different thoughts in the society.

2-At current research, the electronic trust discussion in the evaluation of public trust was considered as a main factor and although in prioritizing and weighting these factors, this approach was in the last class in comparison with other approaches, but presence of this factor in the set of effective factors on public trust indicates the expansion of electronic government dimensions and electronic trust in the society.

3-It is necessary to be emphasized that there are different theories or approaches about

public trust to the government (political trust) that five approaches of commercial management, governmental management, original-lawyer theory, demographics and Islamic value view are available. A look to the model of this research and its special orientation about the factor of effectiveness on public trust emphasizes on this point that the researcher's approach in presenting the model of current research has been a combinative view and it has considered all aspects proposed in the former theories generally.

4-In relation with descriptive variables, as it was mentioned formerly, there is another point that Michler knows the education level, age and gender are effective on public trust level more or less. Almond also indicates that there is positive relation between the literacy level and political pride in England, America and Mexico and since the educated persons are relatively more informed than others, the educated ones consider less importance for political system or basically they have negative attitude to it, also when the authorities or Police were asked about the persons' expectations in a special issue, the people of three countries namely America, England and with a little difference Germany had more trust in Bureaucracy and Police than Italy and Mexico countries (Almond, 1963: 106). In this research, it was also indicated that the public trust amount in the persons with different educational level is different significantly. According to the obtained results, the general procedure of political trust is reduced with increase of education level. And the public trust among the youth who are 20-30 years old, has been also less than other age groups to an extent and this issue is significant statistically. Also the kind of gender has been effective on the public trust to the governmental institutes and political trust level; and its amount has been more by the side of men. Of course,



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more pessimism of women about it demands more discussion and study and needs scrutiny. However, the obtained findings confirm the results of the researches done by Michler and Almond. With regard to the averages techniques, the amount of public trust has been more by the side of married responders.

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