

## The Validation Model of Electronic Services (IT) in Big Non-Profit Institutions (Case Study of Tehran Municipality)

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**Abstract:** This study shows a model for validating electronic services in non-profit institutions. The thought for making this model is rooted in lack of research in this domain. Regarding this issue, the independent variables for validating electronic services was exploited based on induction and the theory of grounded theory. These variables include the issues related to leadership, instruments and costumers. The indexes related to measuring these two variables, leadership and instruments) are measurable referring to financial systems and based on accounting the final prices. But determining the price (rial) for the variable of costumers was not possible via this method. So, a process was created to measure and determine the effects of this variable on the other two using the existing theory including the proportional pricing method in accounting, Delon and Meklin model and validation engineering. Following that and for testing the model and the process, the electronic services of giving the license of transportation limitation by Tehran municipality was validated. The results confirmed the possibility of using this model in open world via determining the price of electronic services.

**Key words:** Electronic services, validation, pricing, evaluating, non-profit institutions

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### INTRODUCTION

Value is one of the most basic factors in expressing thoughts, people's actions and also formation of social life. Value is not just in philosophy and is also a very important issue in economics (Dadgar, 1995). In economics, value is the basis of commercial transaction. If values of products and services are not determined, how can we clarify the real price of goods and services? for validating the goods and services, various methods were traditionally defined. But, validating the electronic services is not possible traditionally. The analysts consider the existence of ambiguous property the reason of rejecting the traditional validation for electronic services (Damodarran, 2002). Study of validation methods shows some differences in activity types, company natures and theorizations which indicates the lack of research in validating the electronic services in big and non-profit institutions.

In accordance with this lack of research, the expansion of the electronic government obliges us that for behaving fairly in giving public services to individuals, the value of electronic services be identified with the same accuracy that the traditional services were countable. Via this method, we can find the real value of electronic services from costumers and also make the comparison of price of various electronic services to citizens possible.

As a result, this study tries to achieve a model for validating the electronic services in non-profit institutions.

**Statement of the problem:** Now a days and with publicizing the electronic government, many of services which were previously traditionally given are electronically given. This is while constituting elements of final price of electronic service or service elements which were traditionally given are different. For instance the expenses related to providing the space for transmitting data, hardware equipment and experts in pricing services which were traditionally given did not exist. On the other hand, since the electronic services are given by governmental institutions, they are under the law of public services. Also, technologies and softwares include processes and properties that are not written in the balance-sheet of companies (Damodarran, 2002). The dominating view is that a property like computer or software is accountable when it is behaved like a constant price (Koller *et al.*, 2014). So, in all balance sheets the value of IT is always determined equal to official value of expenses spent for it (it means total of expenses spent for provision, maintenance and rendering its services). It is said that electronic services are products of invisible properties and they are not measurable. So, it is hard to determine their quantity and express it (Yamaguchi, 2014). So, for services given based on IT no value is determined

Table 1: Overall schema of the study

Philosophical basis	Methods	Types	Strategy
Structuralism	Induction	Qualitative	Grounded theory
Positivism	Deduction	Quantitative	Universalizability of observations

and only its price based on spent expenses in the balance sheet of benefit and loss is mentioned. While using technology for services obliges that the value of technology and its services be countable to be compared with other services, the question is if we want to count the value of electronic services by non-profit institutions, which indexes should be paid attention to? According to these indexes, the designing a model for validation validating IT in big institutions and non-profit ones is done. Using the designed model, it is expected that a basis is made for validating the non-profit institutions that use IT to render their services.

**Background of the study:** It has been a while that electronic services are in the schedule of governments. In the population of this study (Iran) the electronic services is given locally or nationally. And in the layers of connection between the government and citizens, government and employees, government and companies and government and other governmental organizations (Fatemeh *et al.*, 1971). Most of the studies performed about the electronic government, concentrated on performing it (electronic government) and some also expressed the key factors of success of electronic government with the method of identifying the future (Fatima *et al.*, 1974). In other cases, the probable and favored scenarios to reach the future if electronic government services was determined and designed (Fatima *et al.*, 1974). But no research was done in validating the electronic services (related to connection between a government and citizens). The studies done by researchers introduced the main feature of giving electronic services by the governmental section as nature, activity and theorizations. Also, these studies showed lack of research in validating the electronic services by non-profit organizations. At the same time, various studies was done in domain of designing the validation model or pricing the IT.

Although, the studies in Table 1 are not unrelated to the subject of this study regarding the methodology and the process for making the IT models, they did not directly observe the validation of electronic services. As a result it is impossible to identify the variables and key factors for making the hypotheses for presenting the subject model for this study (validation of electronic services in governmental section) in the review of literature. In these cases, the researchers express and test

his own problems and hypotheses after observing the reality and since the source of these questions are not the theoretical bases, review of literature and background of the study, for completing the information about the effective factors on validation of electronic services, the grounded theory method was used. In this method, instead of proving or testing the existent theories, the researcher tries to make and produce theories. In addition, the goal is that the issues about which there is some knowledge are theoretically reconsidered (Bell *et al.*, 2004). The grounded theory has a kind of inductive method. The researcher does not review the background of the study and recognize the elements of the theory. In other words, concepts, topics and premises should be identified (Danaeifard *et al.*, 2009).

## MATERIALS AND METHODS

The philosophical basis of this research is combinational. It means that this research uses two paradigms of structuralism and positivism at the same time. These two bases use inductive and deductive reasoning, respectively. In deduction, the way of expanding knowledge is rejecting the previous theories. So, observing the review of literature assists the recognition of validation and pricing of electronic services greatly. However, identifying these methods per se is not sufficient for validating the electronic services. The reason is that first, its basis knowledge for factors establishing the value of services should be derived out of comments of population. For this purpose, inductive reasoning is used. Tabrizi writes that induction searches for general rules from by observing similar observations. This method is obligatory when ample information does not exist for a phenomenon and a researcher wants to provide the necessary background knowledge regarding this issue. Regarding the philosophical basis in this research, its method and strategy changes. Table 1 shows the overall schema in the order that appear in this research. The process in this research is as follows.

**Establishing primary conceptual model and deriving the independent variables:** The conceptual model of this research was formed based on the paradigm of structuralism and according to grounded theory method. In this study, the effective factors on validating the electronic services in the governmental section was identified and categorized in the frame of codes, concepts and topics. In the end, three topics including issues related to instruments, costumers and leadership were determined. As a result, the primary concept of validation

of electronic services was determined as summing the price (rial) of each of the abovementioned topics. The topics were determined as independent variable and concepts related to each of them as secondary variables for measuring their price (rials).

**Pricing the independent variables:** For measuring each of topics, the related concepts with each topic was categorized as qualitative and quantitative variables. The basis of this categorization was the capability of pricing for each concept. Based on this categorization, the subcategory concepts of leadership and instrument were determined as quantitative variables and the one of costumers as qualitative variables.

The value of quantitative values was derived from the financial system of research population separately for each secondary independent variable (concept). The number of its effectiveness form qualitative variables which was previously determined by research population in the stage of establishing the conceptual model was multiplied in it. The sum of above-mentioned products showed the maximum of price (rials) of quantitative variables which were affected by qualitative ones.

For determining the price of qualitative variables, it was necessary to determine their effects on electronic service values via designing some indexes. The qualitative variables (costumers) included three secondary variables (concepts) as follows: correspondence of system functions with costumer needs, costumer uses of system and customer satisfaction of system service qualities. The first step for determining the value of these variables was determining the functions of information systems which give services to public. For this purpose, the value engineering was used based on which an open-ended questionnaire was prepared. This questionnaire was given to technical employees of IT section which was related to software and based on it, the functions of the product was determined primarily and secondarily. Subsequently, based on the accounting method “common co-efficient”, the value co-efficient related to each function (based on the number of uses of system functions) was determined and functions having small value co-efficient were identified as unnecessary functions (against necessary ones). Regarding the obtained information based on function types (primary or secondary) and the necessity of functions (necessary and unnecessary), the main system functions were chosen. In the next step, in the next step, the main functions of system were evaluated by Delven and McIn model in the

Table 2: Adjusting the research processes with theoretical basis

Research process	Theoretical basis
Establishing the primary conceptual model	Grounded theory
Determining the independent variables	
Quantitative variables	
Qualitative variables determining the percent of effectiveness of quantitative variables out of qualitative ones	
Pricing (rials) of quantitative variables out of financial system	Accounting the final price
Recognizing functions	Value engineering
Determining the main functions	Function of common coefficient in accounting
Evaluating functions	Validation model of Delcen and Maklin
Categorizing the data of evaluation	
Determining the percent of effect for each function	
Determining the maximum of price for quantitative variables which are affected by qualitative ones. They are calculated separately for each variable based on sum of the product of numbers in stages 2 and 6	Accounting calculations
Calculating the value share of qualitative variables via summing the products of percents in stage 11 and the ones of stage 12	
Pricing (rials) for total of qualitative variables	
Pricing the base price of quantitative variables our of subtraction of stages 6 and 12	
Pricing the electronic services based on the sum of prices in stages 14 and 15	Accounting the final price

opinions of costumers (users). After evaluating and deriving indexes of central interests, the functions were categorized to four categories based on the average of each function scores. Each function in every level showed their effects on quantitative variables which were respectively determined 25, 75, 50 and 100%. As a result, the determined percent for each function was multiplied in the sum of calculated value for government and instrument topics (quantitative variables) which are affected by by costumers (qualitative variables). The product as determined as price of qualitative variables (rial).

In conclusion, the sum of price (Rial) of qualitative variables and the base value of quantitative variables of electronic service were determined. The process of research is described in Fig. 1. In the mentioned processes, theoretical bases of grounded theory, accounting the final price, strategy of proportional validation in accounting (common coefficient), value engineering and evaluation model of Dlven and Maklin were used in Table 2. The research processes are adjusted with their theoretical bases.

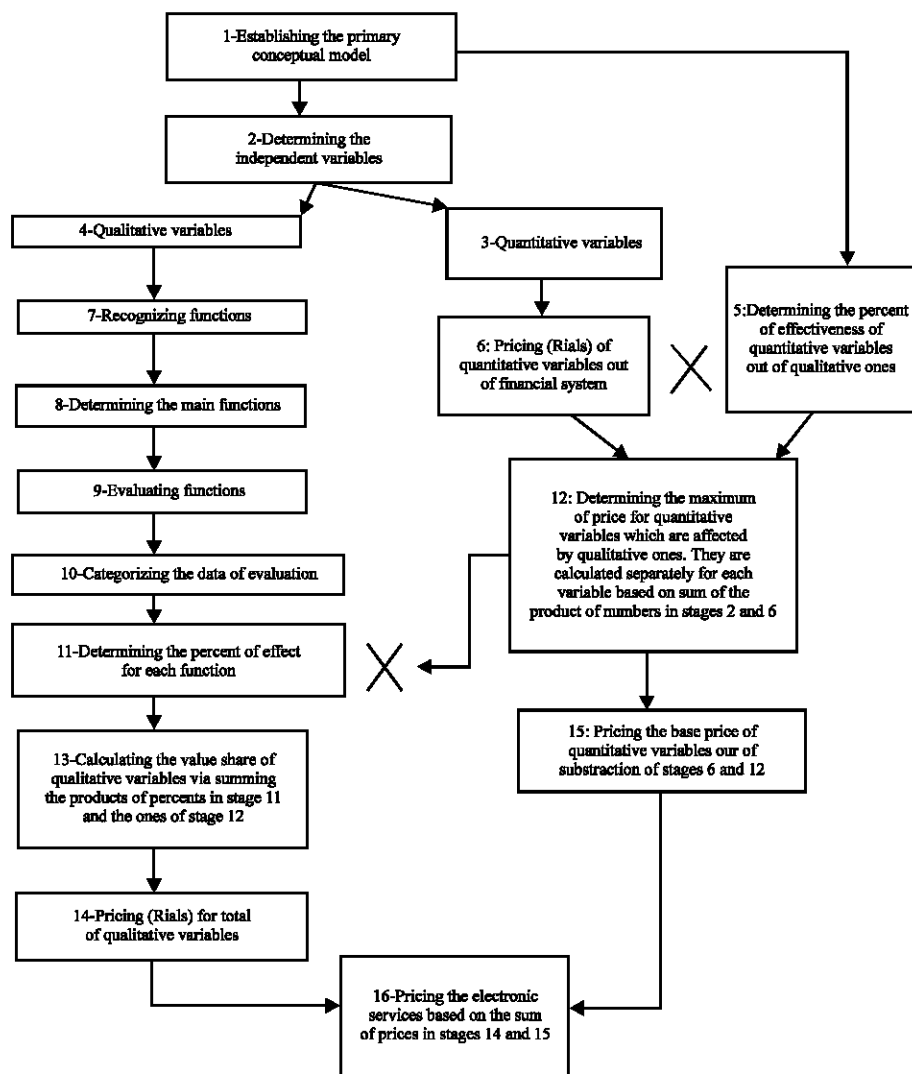


Fig. 1: The research processes

Regarding the research processes, the population in stage 1 of the research processes includes 24 people from the people who comment on this domain. These people included: the deputies of IT organization of municipality of Tehran, the supreme technical experts of the mentioned organization, supreme managers of deputy of transportation and traffic of Tehran, managers of electronic service offices of municipality of Tehran and experts of IT department of Tehran. In total, 18 of these people were interviewed and their information were gathered and categorized with the method of grounded theory.

In stage 7, the number of population was 7 people of IT expert and included two web page programmers, one expert of novel payments, a network manager and three experts related to inside and outside costumers for correcting the system defects. In stage 9, the numbers of

population members were 52 of present costumers related to system of giving permits for entering traffic limitation area. They were 52 people who referred to organization for problems related to the above-mentioned system of managing Tehran transportation during 5 month (from Ordibehesht 2015 to the end of Shahrivar of the same year). Each of them, in addition to using a system for the same purpose, marked the experience of using the system in the questionnaires. Thirty out of them collaborated with the research. Nineteen of them had the qualifications of completing the questionnaires and recorded and completed all stages.

## RESULTS AND DISCUSSION

Since, the current study is exploratory, the effective variables on validation of electronic services were derived

Table 3: Establishing the concepts from codes

Codes (premises)	Concepts
Tax, added value, complications	Assigned expenses (added value-tax)
Warning signals. Related expenses to creating a city public transportation, presenting factors, expenses of public transportation, police expense	Additional and general expenses (non-electronic) related to services
contracts with offices of electronic services, related expenses to choice of electronic offices, supportive subsidy to offices of electronic services, civilians in electronic service offices, expenses of managing the electronic services	Expenses of offices of electronic services
Discounts of municipality complications, public transportations, martyrs, officials and institutions	Discounts
Minimum and maximum of prices of services that is rendered by city council, the section of governmental letters, minutes of municipality councils, city council ratifications	Preferences
The share of contracts via organization under the command of municipality like FAVA, the price of contract deals with people out of municipality, the price of contraction with companies out of municipality	Contractor contracts (making intelligent, managing the imposing of traffic limitations and ...)
The extent of use of people of electronic services	The extent of customer use of systems
Correspondence of needs with services.	Correspondence of functions and customer needs
Customer satisfaction of electronic services	Customer satisfaction of services
Expenses of production, designing and programming software's	Expenses of design and production of softwares
Expenses of technical support of softwares, employees related to softwares and data bank	Expenses of technical support of software
Expenses related to preparing the server room. server expense and expenses of providing users with computers and relative managers	Expenses of purchase of hardware equipment
Expenses related to Antivirus, internet security and insurance of security of system information	Expenses of security of system
Expenses related to online bank services, relationship with other stations like programs of documentation and surveying engineering organization and ...	Expenses of relationship with other information bases (financial bank and ...)
Expenses related to providing host, traffic and management of space	Web expenses
Expenses related to non-contractor employees who work in software management	Expenses of managing softwares

out of population comments and the grounded theory model of validation was collected based on it. Subsequently, the model was tested in the framework of real information which was achieved by observing the electronic services of Tehran municipality in giving the above-mentioned permit. Regarding the 16 stage process for this research, the performed actions for validating electronic services, including collection and test of model with real information for each stage are mentioned here.

**Stage 1 (establishing the primary conceptual framework (grounded theory)):**

The conceptual model for this research was formed based on directional making of questions. These questions were to convince 18 people of population for introducing the elements and variables whose calculation of values are countable and could be recorded in the final value of electronic services. After receiving the information, the first step of codifying was interviewee's answers. Codifying in the grounded theory is a form of content analysis which is trying to find and conceptualize the subjects which could be discussed among many data (Danaeefard, 1964). Analyzing the data based on open-ended coding, is selectively and mainly done and continues until comments are overflowed. In the stage of overflowing the comments, the theory based on the data is made (Iman and Mohammedan, 1967).

According to Straus and Karvin, codifying is done via minor analysis. In this type of data analysis, all words were analyzed and the obtained meanings were codified in words or groups of words. For codifying via them in minor analysis, first a table with two columns was drawn in which in the right column the text of interview and in the left one, the codes used by the researcher to describe the words used by the interview was written. The codes for minor codifying, was in general for the researcher in all guiding interviews of guiding the determination of interview's views. After each interview with the minor analysis codes, the key points were identified. Based on them, the constituting elements of values of electronic services were identified separately for each interview and they were identified as premises regarding the answer of interviewers to this question: can the price of elements be determined and how? Afterwards, eliminating the common codes in interviews and categorizing them, we formed the concepts. Table 3 shows the forming the concepts out of codes. Based on the information on the table and via categorizing the concepts, some common main issues were found that became the title of topics. Table 4 shows the formation of topics out of concepts.

The basis of categorizing the concepts in Table 5 was their sources. This means that when categorizing concepts, the bases of their validation of each of them

Table 4: Forming the topics out of concepts

Concepts	Topics
Assigned expenses (added value-tax) additional and general expenses (non-electronic) related to services expenses of offices of electronic services	Related to leadership
<b>Discounts preferences</b>	
Contractor contracts (making intelligent, managing the imposing of traffic limitations and ...)	Related to costumers
The extent of costumers use of systems	
Correspondence of functions and costumers needs	
Costumer satisfaction of services	Related to instruments
Expenses of design and production of softwares	
Expenses of technical support of software	
Expenses of purchase of hardware equipment	
Expenses of security of system	
Expenses of relationship with other information bases (financial bank and ...)	
Web expenses	
Expenses of managing software's	

Table 5: Establishing the qualitative and quantitative variables

Topics (main independent variables)/ concepts (secondary independent variables)	Type of variable
<b>Related to leadership</b>	
Assigned expenses (added value-tax)	Quantitative
Additional and general expenses (non-electronic) related to services	Quantitative
Expenses of offices of electronic services	Quantitative
Discounts	Quantitative
Preferences	Quantitative
Contractor contracts (making intelligent, managing the imposing of traffic limitations and ...)	Quantitative
<b>Related to costumers</b>	
The extent of costumers use of systems	Quantitative
Correspondence of functions and costumers needs	Quantitative
Costumer satisfaction of services	Quantitative
<b>Related to instruments</b>	
Expenses of design and production of softwares	Quantitative
Expenses of technical support of software	Quantitative
Expenses of purchase of hardware equipment	Quantitative
Expenses of security of system	Quantitative
Expenses of relationship with other information bases (financial bank and ...)	Quantitative
Web expenses	Quantitative
Expenses of managing software's	Quantitative

was paid attention. As a result, since assigned expenses (added value-tax), additional and general expenses (non-electronic) related to services, expenses of offices of electronic services, discounts, preferences and contractor deals (making intelligent, managing the imposing of traffic limitations and) is determined by the leadership, (their identity is determined by supreme managers), they are categorized as leadership topics. In contrast, expenses of design and production of software's, expenses of technical support of software, expenses of purchase of hardware equipment, expenses of security of system, expenses of relationship with other information bases (financial bank and), web expenses and expenses for managing software's which can be derived from the Tehran municipality accounts, are because of electronic obligations for the service to be given. In other words, the base of existence of such expenses is made by need of

information systems. For this reason these variables were determined as instrument topic. The third topic which includes: the extent of costumers use of systems, correspondence of functions and costumers needs and customer satisfaction of services are established based on evaluating costumers. In this topic, costumers are the determining factor for the value of services. So, this topic was entitled the subjects related to costumers. With this method and with connecting the topics and concepts of grounded theory, the validation of electronic services was formed based on Fig. 2.

**Stage 2 (identifying the independent variables):**

Regarding the process for forming the primary conceptual model, based on the grounded theory, the topics in the chart number, were identified as independent variables for validating the electronic services. These topics have indexes to be used for measuring them. These indexes are the same concepts that were formed by their categorization. So, topics and concepts both are identified as independent variables but respectively primary and secondary ones.

**Stages 3, 4 (determining the qualitative and quantitative variables):**

Based on whether or not it is possible to price (rial) each concepts (secondary independent variables) via going to offices of financial systems (in other words studying the capacity of determining the numerical value for each concept), the secondary independent variables and subsequently the main independent ones were divided into qualitative and quantitative ones. Table 5 shows establishing the qualitative and quantitative variables.

**Stage 5 (determining the percent of effects of quantitative variables from qualitative ones):**

Simultaneously with forming the conceptual model (grounded theory) and in the stage of determining the main and secondary independent variables which were done in the framework of topics and concepts, using the opinions of members of the population, the percent of effectiveness of each of the quantitative concepts out of qualitative ones was identified. According to average score that each of these concepts (secondary independent variables) was given based on the opinions of population members on effectiveness of quantitative variables out of qualitative ones, Table 6 was formed. Data in Table 6 shows that how much the validation of costumers of functions of the product which was studied in stage 11 can affect the value of quantitative variables. In other words, the identified percent for each of the quantitative concepts show until what percent the value of each concept is affected by quantitative variables.

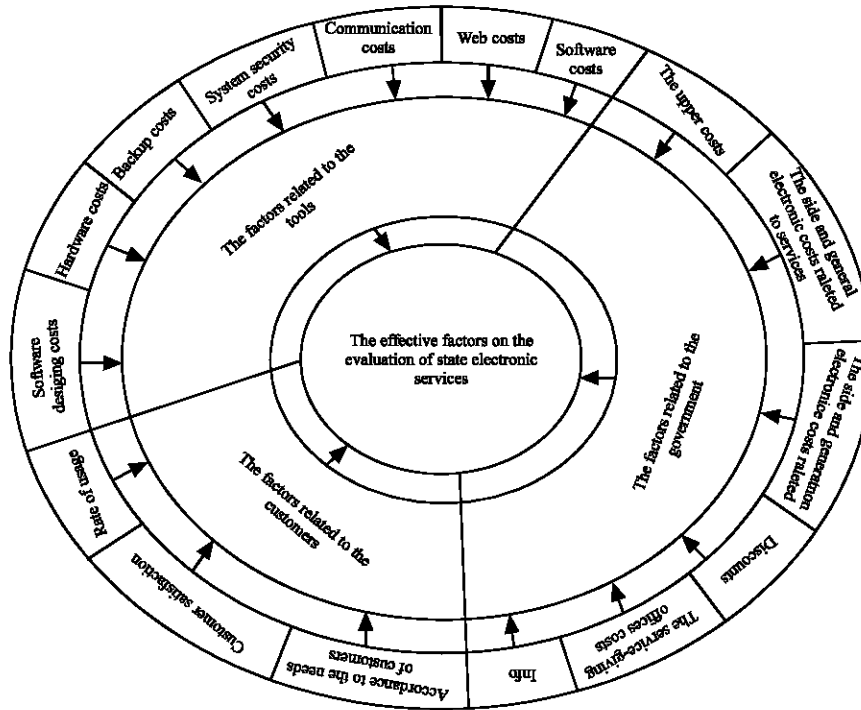


Fig. 2: The theory of validation of electronic services

Table 6: Extent of effectiveness of topics of leadership and instruments from costumers

Topics/Concepts	Percent of effectiveness
<b>Instruments</b>	
Expenses of design and production of softwares	70
Expenses of technical support of software	70
Expenses of purchase of hardware equipment	70
Expenses of security of system	70
Expenses of relationship with other information bases (financial bank and ...)	70
Web expenses	70
Expenses of managing softwares	100
<b>Leadership</b>	
Assigned expenses (added value-tax)	0
Additional and general expenses (non-electronic) related to services	25
Expenses of offices of electronic services	0
Discounts	0
Preferences	0
Contractor contracts (making intelligent, managing the imposing of traffic limitations and ...)	25

**Stage 6 (reaching the price (rials) of quantitative variables out of financial system):** According to the functional funds of 2014, the whole of expenses in IT in the mentioned year is 2500 million rials . This expense was separately counted out of category of accounts of Tehran municipality for each of the concepts related to instrument which was mentioned in the first part. The yearly system expense share for rendering the permit for entering the traffic limitation area out of expenses related to providing the relative services with IT. The amount is 243922110000 rials per year. By dividing this number to

the number of buyers of permits to enter the yearly traffic limitation areas of Tehran municipality in 1393, 91673 people), the share of each person of system services was calculated as 2660785 rials.

On the other hand, the expenses related to leadership were separately observed for each concept and it was clarified that for the observed services, only the secondary and general expenses for services and expenses of preferences make sense. Since, the leadership determines the preference expenses for the final price payable by costumers, the total of leadership expenses for costumer people (not costumer companies) (20300000 rials) should be subtracted from preference expenses. As a result, the leadership expenses for costumer people were 13000000 rials. According to the above-mentioned issues, the total of expenses related to instrument and leadership was calculated as 15660785 rials.

**Stage 7 (recognizing functions):** For recognizing functions and determining primary and secondary or necessary and unnecessary functions, the value engineering was used. During the public phase of value engineering, the subject of the study was determined by defining the system for issuing the permit of people for entering the yearly traffic limitations. Afterwards, the deciders were identified and the studies were directed to

obtaining information from people directly involved in software management. With their comments, the functions of electronic services for giving permits of entering the yearly traffic limitation of municipality were identified as: Giving information, paying electronically, referring numbers, printing permits, recording demands, deleting demands, editing demands substituting the label of entering traffic limitation, observing demands, online guiding and connecting.

**Stage 8 (determining the main functions):** In this stage, based on the common co-efficient in proportional validation accounting method, the extent of uses of each function was determined as a criterion for choosing the main functions. Based on visiting web statistics which were derived from system software for giving permits for entering yearly traffic limits and regarding the comments of population members about necessity of functions, online guiding and connecting were deleted from functions and 9 functions as follows, were chosen as main functions: Giving information, paying electronically, referring numbers, printing permits, recording demands, deleting demands, editing demands substituting the label of entering traffic limitation, observing demands.

**Stage 9 (evaluating functions):** In this stage, the main functions were evaluated based on the standard model of Delven and McIn. Regarding the achieved information from the 19 answers to the questionnaires which were made based the mentioned model, the average index was used to determine the differences of user's opinions about each function.

**Stage 10 (categorizing the evaluation data):** In this stage, the average of scores given by users to each of the functions of systems was categorized in a four choice range. Each average on each level showed the percent of the effect of costumers on quantitative value of services. For this, by dividing the subtraction of up and down limits of averages to the number of levels (four levels) the distance of levels was calculated and based on it, the average related to each function was written in the four level.

**Stage 11 (determining the percent of effect for each output):** Based on the calculations in stage 10, the effect percent of each output was clarified separately. Based on it, the output of reference number has 25%, giving information 50% and electronic paying had 100% effect. The extent of effects of other functions on quantitative variables was determined 75% of the value of quantitative variables.

**Stage 12:** Determining the maximum of price for quantitative variables which are affected by qualitative variables separately for each variable (based on the sum of product of stages 5 and 6. Based on the information of Stages 1 and 5. The research processes through which first the quantitative variables (15660785 rials) and afterwards the percent of effect of qualitative variables on them was determined separately. Table 7 calculates the price of the effect of qualitative variable of costumer's satisfaction. Based on Table 8 the total of the calculated value for leadership and instrument which are affected by costumers is 5895610 rials.

**Stage 13:** Calculating the value share of qualitative variables via summing the products of percent's in stage 11 and the ones of stage 12. According to what was said in stage 12, the maximum price that customers can choose is determined as 5895610 rials. In this stage, this number was divided to the number of functions of electronic services for giving permit for entering the limited section of yearly traffic areas of Tehran municipality (9 functions which were determined in stage 8 of the process). The result showed the value of topic of costumers for each function (found out in stage 11 of the research process) which was multiplied in the mentioned number. The result was the value (price) for costumers for each function. The abovementioned calculations are mentioned in Table 8 and Fig. 2.

**Stage 14 (pricing (rials) for total of qualitative variables):** As you can see I table, the total of calculated values related to each function, indicates the price for each costumer. Based on it, the total of calculated values for each system giving permits to enter yearly traffic limitation for costumers was determined as 4094175 rials.

**Stage 15 (pricing the base price of quantitative variables our of subtraction of stages 6 and 12):** Based on calculations in stage 6, the price of quantitative variables was 15660785 rials. Since, a portion of this price is affected by qualitative variables, the base value of quantitative variables should be calculated via subtracting the total value of quantitative variables form the value affected by qualitative ones. As you see in stage 12, the maximum value (price) of quantitative variables affected by qualitative ones is 5895610 rials. Based on it and by subtracting the above-mentioned numbers, the basic value of quantitative variables is 9765175 rials (Fig. 3).

**Stage 16 (pricing the electronic services based on the sum of prices in stages 14 and 15):** By summing the



Table 7: Calculating the extent of effect of costumer's satisfaction

Concept	System share (1000 rials)	Poll share for each citizen (rial)	Percent of effectiveness of instrument and leadership	Value of costumers (rial)
Expenses of design and production of softwares	9870000	10766	70	7536
Expenses of technical support of software	634000	17824	70	12477
Expenses of purchase of hardware equipment	1000000	10908	70	7636
Expenses of security of system 817400	8916	70	6241	
Expenses of relationship with other information bases (financial bank and ...)	58000	632	70	442
Web expenses	140000	1527	70	1069
Expenses of managing softwares	239285710	2610209	100	2610209
Assigned expenses (added value-tax)	-	0	0	0
Additional and general expenses (non-electronic) related to services	-	3000000	25	750000
Expenses of offices of electronic services	-	70000	0	0
Discounts	-	0	0	0
Preferences	-	7300000	0	0
Contractor contracts (making intelligent, managing the imposing of traffic limitations and ...)	-	10000000	25	2500000
Total	5895610			

Table 8: Calculation of value

Function	Category of data		
	Percent of customer satisfaction	Maximum of value of costumers for each function (Rial)	Calculated value for costumers
Giving information	50	655068	327534
Electronic paying	100		655068
Number for referring	25		163767
Permit printing	75		491301
Recording the demands	75		491301
Deleting demands	75		491301
Editing demands	75		491301
Substitution of the label of limitation of traffic	75		491301
Observing the demand	75		491301
Total	4094175		

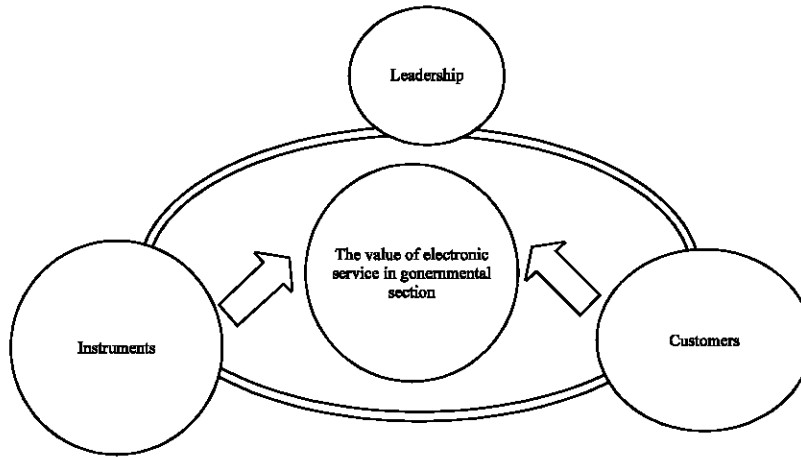


Fig. 3: The effective independent variables of value of electronic services

numbers of stages 14 and 15 (summing the base value (rials) of quantitative variables (9765175 rials) and the value of qualitative ones (4094175 rials) in the end the value of electronic service systems for giving the permit to enter limited traffic areas of Tehran municipality is determined as 13859350 rials.

### CONCLUSION

This study is done with the title of presenting a model for validating electronic services in non-profit institutions (a case-study in Tehran municipality) with the goal explained in the title. The philosophical base of

this study is a combination of structuralism and positivism. For this research, first the theatrical model validation of electronic services was established based on structuralism and use of grounded theory via inducting the truth. In the next stage, based on indexes and variables given by comments of population members, the electronic services of Tehran municipality was validated. Through this, the practicality of the produced model for validating electronic services in governmental section was confirmed.

This model introduced three variables of instruments, leadership and costumers. For evaluating each of these variables also, indexes were identified which are shown in. In addition to collecting the abovementioned model, in this study a 16 stage process was introduced that using and combining the theoretical bases including accounting the final price, the quality of services and engineering value for qualitative variables could be calculated in rials. The findings of this research correspond with the ones of the research before. According to the results of studies done by Gant, the total of expenses of giving the governmental linear services usually incorporates the legal expenses of traditional electronic services and portal ones. In this study, the effect of traditional and portal expenses as related concepts with instruments and leadership in determining the value of electronic service was affirmed. But the distinguishing factor of this research with the ones before it is the calculations of price of expense of satisfaction of costumers in validating the electronic services.

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