Journal of Scientific Research and Development 2 (1): 17-24, 2015
Available online at www.jsrad.org
ISSN 1115-7569

Review and prioritizing the main affective factors on performance measurement system (PMS) (Case Study: TONDAR 90 Deputy, Iran Khodro Company, Tehran, Iran)

Seyed Ali Akbar Ahmadi [1], Javad Khamisabadi [2,3,*], Mohammad Shafikhani [3], Mahmood Majd [4], Mohammad Reza Motamed [5]

[1]*Professor, Faculty of Management, Payam Nour University, Tehran, Iran*
[2]*Member of Young Researchers and Elite Club, Central Tehran Branch, Islamic Azad University, Tehran, Iran*
[3]*PhD Student in Industrial Management (Production), Islamic Azad University, Tehran, Iran*
[4]*IKCO Automotives North Factory, TPS, Engineering Director, Tehran, Iran*
[5]*Renault Brand Director, IKCO, Tehran, Iran*

Abstract: The main aim of this study is reviewing the main affective factors on Performance Measurement System (PMS) (case study: TONDAR 90 Deputy, Iran Khodro Company, Tehran, Iran). This study is descriptive- survey and falls into the category of practical studies. 47 top experts, experts and Supervisors in the TONDAR 90 Deputy, Iran Khodro Company, are the population in this research. After the selection of the sample size, the validity and the credibility of the questionnaire were evaluated using the cranbach alpha coefficient and the result was satisfactory. Afterwards, to study level of the main affective factors, the T-test (Binominal) was carried out and Kolmogorov-Smirnov test was utilized. The findings based on the conceptual model of the research and testing the hypotheses depict that the main affective factors on Performance Measurement System in this case study are abnormal. And according to one sample T-test, there is a correlation between the independent and dependent factors and the 3 hypothesis of the research are tenable and thus proved. Ranking the main factors analyzed in the conceptual model was based on the Friedman test. Finally, to prioritizing the sub-factors, by using of Fuzzy TOPSIS technique done. Based on the result of this research, utilization is the first importance factor; formalization is the second importance factor and third importance factor is integration based on Friedman Test. Also, as it is seen in above table "Planning, Control and coordination of the activities" as the most important sub-factors that is important on main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro company). Also "Measurement procedure definition and Control, evaluation and involvement of employees" are in the next rankings based on prioritizing the sub-factors by using of the Fuzzy TOPSIS Technique.

Key words: Review; prioritizing; Performance Measurement System (PMS); TONDAR 90 Deputy; Iran Khodro Co

1. Introduction

The subject of performance measurement is encountering increasing interest in both the academic and managerial ambits. This, for the most part, is due to the broadening spectrum of performances required by the present-day competitive environment and the new production paradigm known as Lean Production or World Class Manufacturing (Dixon et al., 1990; Hall et al., 1991). In addition there is the need to support and verify the performance improvement programs such as Just-in-Time, Total Quality Management, Concurrent Engineering, etc. (Ghalayini and Noble, 1996).

These programs are characterized by their ability to pursue several performances at the same time: for example the increase in the product quality together with the lowering of the production costs and the lead times, following the reduction in discards, waste, reworks, and controls. As a result the logic of "trade-off" between performances has been more or less abandoned (Mapes et al., 1997; Filippini et al., 1998), and thus there is a reconsideration of the current Performance Measurement System (PMSs), traditionally oriented solely towards the control of the production costs and productivity.

The revision and updating of the PMSs on one hand regards the innovation of the accounting System, by means of the Activity-Based Costing as it concerns, in particular, the product costing (Johnson and Kaplan, 1987), and on the other, the extension of the measuring of the so-called non-cost performances, by nature not explicitly economic-financial, but pressingly demanded by the customers (Fisher, 1992).

The environmental factors which urge a development of one side of PMS of the "non-cost" type are twofold: on one part linked to the environmental turbulence (in terms of frequency and unpredictability of changes) and on the other the managerial complexity (due to the passage from strategies based on cost-leadership to strategies based on differentiation/customization, passage which increases the competition between the firms and require more complex organization).

* Corresponding author.

Despite the "non-cost" performances (which regard physical measures pertinent to the characteristics of the product, the production technologies and the managerial techniques of the plant) seeming to be typically operational in nature, in fact they often have tactic and strategic relevance (Eccles, 1991; Wisner and Fawcett, 1991).

Table 1 summarizes those which the vast amount of literature on the PMSs (Neely et al., 1995) consider to be the main changes and trends in development that have been affected or now concern these System.

Table1: PMS evolution

TRADITIONAL PMS	INNOVATIVE PMS
based on cost/efficiency	value-based
trade-off between performances	performance compatibility
profit-oriented	customer-oriented
short-term orientation	long-term orientation
prevalence of individual measures prevalence of functional measures	prevalence of team measures prevalence of transversal measures
comparison with standard aim at evaluating	improvement monitoring aim at evaluating and involving

The main propose of research is the reviewing the main affective factors on Performance Measurement System (PMS) (case study: TONDAR 90 Deputy, Iran Khodro Company, Tehran, Iran). In fact, depict the increasing importance of the performance measurement main factors in operations management.

2. Problem Statements

Performance measurement in the fire service is important for several reasons. First, performance measures provide a means of defining program service levels both at the operational level and at the strategic level. Whether measuring fire suppression, fire education, arson investigation, or any other fire service delivery program, performance measures can provide clarity of mission. Additionally, performance measurement systems provide a rational methodology to report program accomplishments to managers, customers, and policymakers (Allen, 1996). The International City/County Management Association (ICMA) has been keenly interested in productivity and measuring performance for more than two decades (Hatry et al., 1992). One of ICMA's latest efforts in this area is a project intended to develop performance measurements that cities can use for comparative analysis.Performance measures help fire service managers clarify the purpose or mission of a program because they cannot effectively develop performance measures without first developing a clear and understandable mission statement for the program (Allen, 1996; Fountain & Roob, 1994). This is not complicated but can be a very messy process and sometimes is quite complex (Fountain & Roob, 1994; Allen, 1996). It usually requires many hours of collaboration and dialogue with people from inside the department (both management and labor) besides getting input from stakeholders who are outside the department (Fountain & Roob, 1994). However, once the mission statement is written in clearly understandable language, operational and strategic performance measures can be rationally and reasonably developed. Operational performance measures are used by managers to plan and control programs at the operational level while strategic performance measures provide guidance to both managers and policymakers who have to make decisions from a more global (big picture) perspective.

Second, performance measures provide a means to clarify programs in terms that are understandable to citizens, customers, fire managers, and firefighters. These terms are typically formulated as inputs, outputs, and outcomes (Fountain & Roob, 1994). Program costs can be calculated by evaluating the efficiency, effectiveness, and equity of the program. Although costs are not always quantitative, i.e., measured in dollars and cents, there is a tendency often to only consider the financial costs. Equity and effectiveness costs typically must be measured in qualitative terms, which is much harder to measure and justify since mostly they are based on a set of values or assumptions about what is in the best interest of the public. Despite the difficulty in costing qualitative measures, it is extremely important to give it a best effort. Third, performance measures offer opportunities to improve the services of a program. Leading-edge organizations, whether public or private, use performance measurement to gain insight into, and make judgments about, the effectiveness and efficiency of their programs, processes, and people. These best-in-class organizations choose what indicators they will use to measure their progress in meeting strategic goals and objectives, gather and analyze performance data, and then use these data to drive improvements in their organization—and successfully translate strategy into action. (Gore, 1997)

Information (data) collected about the program can be used to evaluate program outcome performance for customers and how well the programs are meeting the strategic objectives of the organization and the community. Evaluations based on predetermined performance measures then can be used to support requests for additional resources (Leithe, 1998). Data can also be used to analyze how efficient current resources are being utilized. The same data can be used to help identify both strengths and weaknesses in the program thus supporting decisions to modify a program or sometimes decide to end a program. Although, an evaluation may suggest a program should be ended, a good performance measurement system provides fire managers early warnings of program weaknesses, which can be addressed early, so changes can be made to improve the service before a program becomes institutionalized in the community.

The levels of public services provided by any jurisdiction are political issues that require political decisions. The strongest, most comprehensive and most understandable performance measurement systems do not change this fact, nor should they change this fact. Political leaders (city council members, fire district board members, and policymakers) are elected to make decisions about the allocation of scarce resources (Allen, 1996). Fire service managers can, and should, play a role in developing performance measurement systems that can meet their community's objectives in the best way possible. In this sense managers and leaders in the fire service are public safety policy entrepreneurs (Kingdon, 1995) who are constantly looking for opportunities to implement creative and innovative fire service programs. These programs must meet the needs of their customers and simultaneously provide for the overall public safety concerns of the community before it is reasonable to expect that they will be funded.

The data provided by a good performance measurement system can be an effective tool in influencing political decisions. However, performance measures do not make decisions or replace people. They are intended to provide a systematic management approach that provides better data and evaluation opportunities, which are then used to make important programmatic decisions (Allen, 1996). For example, a well thought out public education program for youths in the community based on sound research and analysis, and supported by a clear mission statement for the program can make the difference between gaining community support and not gaining community support. Support can be translated into budget dollars and staff to implement the program and performance measurement results can be used to substantiate how well the program is meeting its objectives.

It is possible to have good operational performance measures for every fire department program without having a set of programs that are integrated into the strategic objectives of the fire department or the whole community. Operational performance measures are needed and are especially helpful to program managers. But, a holistic approach to strategic planning is needed to provide a set of programs that are complementary to the strategic mission of the organization and, which identify the most appropriate level of service for each program. "Performance measurement systems succeed when the organizations strategic and business performance measures are related to—that is, is in alignment with—overall organizational goals " (Gore, 1997).

Strategic performance measures are also needed since they address the community's strategic plan in a more comprehensive way than do operational performance measures. Yet, fire departments should have some form of strategic plan that provides direction and guidance for the development of fire service programs, which are complimentary to the objectives of the community. For example, if the community is concerned about its youth, then youth education programs are very important. On the other hand, if the community is primarily a resort town or retirement village, other services may take precedence. With respect to the points mentioned above, the main question raised in this study is as follows:

What are the main affective factors on Performance Measurement System (PMS) (case study: TONDAR 90 Deputy, Iran Khodro Company, Tehran, Iran)?

3. Materials and methods

The researcher then prepared to consider the issue of research methodology which is chosen. The purpose of this method is determining what research is needed to investigate particular issues and how to make him more accurate and using rapid method to achieve the desired question or questions. According to the present study to collect data, we need hypotheses test or answer questions concerning the current status of the subject. The methodology used in this study is descriptive. "Descriptive research" contains a set of methods that aim to describe the conditions or phenomena under study. Conducting research to further understanding is related to the situation and merely descriptive study can help the decision making process (Sarmad, Bazargan and Hijazi, 1385, 81). This study is descriptive- survey and falls into the category of practical studies. 47 top experts, experts and Supervisors in the TONDAR 90 Deputy, Iran Khodro Company, are the population in this research. After the selection of the sample size, the validity and the credibility of the questionnaire were evaluated using the cranbach alpha coefficient and the result was satisfactory. Afterwards, to study level of the main affective factors, the T-test (Binominal) was carried out and Kolmogorov-Smirnov test was utilized. The findings based on the conceptual model of the research and testing the hypotheses depict that the main affective factors on Performance Measurement System in this case study are abnormal. And according to one sample T-test, there is a correlation between the independent and dependant factors and the 3 hypothesis of the research are tenable and thus proved. Ranking the main factors analyzed in the conceptual model was based on the Friedman test.

3.1. The statistical population and sample size

A scientific study is done to determine the effect on the target population. For this reason, the topic may find the traits, characteristics, functions, and factors or the relationships found between factors and also characters, actions and reactions and the factors involved in the community. The mass can be expressed as a set of objects or uniform symbols in which it is called a statistical population. The population of such series is one of the basic concepts that do not define it, but rather is described. Thus,

the set of objects can detect one or more characteristics in common, that can collect data (Safari et al, 1384, 51). 47 top experts, experts and Supervisors in the TONDAR 90 Deputy, Iran Khodro Company, are the population in this research.

In other definitions, target population can be defined as follows:

"The population consists of all those elements in a specified geographical scale which is shared with one or more characters." Criterion is:

"A characteristic trait is between all elements of the target population, target population and differentiator from other societies" (Hafez, M., 1377, 119).

Table 2 summarizes the characteristics of study participants are presented for each grade. This table shows that about 15 % of the top experts, 38% experts and 47 % are supervisors.

Table 2: Characteristics of study participants according to institutional Posts

Title	Frequency	Percent
Top experts	7	15
Experts	18	38
Supervisors	22	47
Total	47	100

3.2. Conceptual Model

In this study, conceptual model (Figure 1) contains: formalization, integration, utilization (as independent factors) and Performance Measurement System (as independent variable).

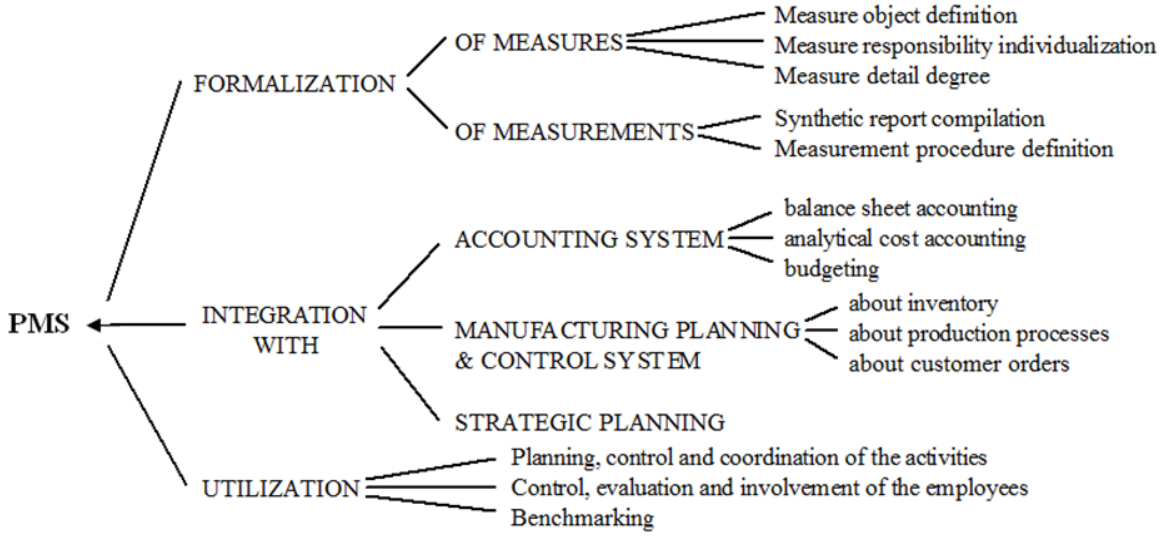

Fig. 1: Conceptual model

3.3. Research Hypotheses

The hypotheses with regard to the conceptual model of the research are as follows:

1- There is a correlation between formalization and PMS.
2- There is a correlation between integration and PMS.
3- There is a correlation between utilization and PMS.

3.4. Validity and reliability of measurement instruments

Validity refers to rightfulness and correctness (Khaki, 1378, 288). Reliability or validity means that the measuring instrument measures the extent to the desired attribute. To measure the validity of different methods, we should consider its importance for the poor measurement that can trump any scientific research due to its worthless. To increase the reliability and validity of master degree, we discuss top experts and experts and the questions due to eyes modification. 30 questionnaires were distributed to each variable in the statistical population and all ambiguities were identified and corrected. Thus, some questions were deleted and replaced with some other experts' digits mentioned finally in the view of the clarification and then the final questionnaire was distributed.

The following instruments were used to improve the content validity of the questionnaire:

1-Using the comments of some professors, senior specialists and experts in the fields of industrial engineering and management.
2-Similar questionnaires, articles, books, and magazines.
3-The initial distribution of questionnaires among some of the directors and top experts and assistants working in different parts of TONDAR 90 Deputy, Iran Khodro Company.

3.5. Reliability of the questionnaire

Reliability analysis is to validate the accuracy and reliability of the interpretation and the words of the phrase. If a measurement tool is suitable for trait

variable, at the same time, we consider another place that achieved for similar results. In other words, a reliable and valid instrument means that the property equally has reproducible and quantifiable results (Hafeznia, 1377, 155). In this regard, Cronbach's alpha was used to estimate the reliability of this technique.

There are multiple responses to a questionnaire which are, in fact are examined in recommended test. The method used to calculate the internal consistency of the characteristics, is using measuring instruments. As said, if the alpha coefficient is greater than 0.7, the test of reliability is acceptable.

a-Cronbach relationship is:

$$\alpha = \frac{N}{N-1}\left[\frac{S_t^2 - S_i^2}{S_t^2}\right]$$

Si2: Total Variance

α: Cronbach's alpha coefficient

St2: total variance

N: Number of questions (Sarmad, Bazargan and Hijazi, 1385, 169).

Table 3: Cronbach's alpha values for factors of study

Row	Questionnaire	Cronbach's alpha values	Fisher statistic value
1	PMS	0.72	0.7537
2	formalization	0.75	1
3	integration	0.81	0.3817
4	utilization	0.87	0.3582

Table 3 shows that the Cronbach's alpha values for all factors are greater than 0.7, so reliability are confirmed.

3.6. Fuzzy TOPSIS Technique

Topsis (prioritization method respecting similarities) has been known as one of MCDM classic methods that was developed by Hwang and Yoon in 1981 to solve problems. It was based on ideal determination. Chosen alternative should have the shortest distance from positive ideal and on the other side longest distance from negative ideal(Hwang & Yoon,1981).using this model in Iran has been started in early 1370(solar Iranian calendar) and its use has limited to recent years.(Hwang &Yoon, 1981).

Decision making steps through Topsis –phase technique is as following:

Step 1- gaining weight vectors w~j

Step 2- normalizing gained matrix by asking experts in relation to strategies that is following matrix:

$$\tilde{R} = \left[\tilde{r}_{ij}\right]_{m\times n} \quad (1)$$

Related to interest standards

Related to interest standards $B \subseteq \{1,\ldots,n\}$ (formula 2)

Related to cost standards $C \subseteq \{1,\ldots,n\}$) formula 3.

$$\tilde{r}_{ij} = \left(\frac{a_{ij}}{d_j^*}, \frac{b_{ij}}{d_j^*}, \frac{c_{ij}}{d_j^*}, \frac{d_{ij}}{d_j^*}\right), \quad j \in B \quad (2)$$

$$\tilde{r}_{ij} = \left(\frac{a_j^-}{d_{ij}}, \frac{a_j^-}{c_{ij}}, \frac{a_j^-}{b_{ij}}, \frac{a_j^-}{a_{ij}}\right), \quad j \in C \quad (3)$$

:

Step 3: So the weighting matrix is like following fomula:

$$\tilde{V} = \left[\tilde{v}_{ij}\right]_{m\times n}, \quad i = 1,2,\ldots,m, \quad j = 1,2,\ldots,n$$

$$\tilde{v}_{ij} = \tilde{r}_{ij} \otimes \tilde{w}_j \quad (4)$$

Step 4: determining Fuzzy Positive Ideal Solution11 (FPIS) $\tilde{v}_j^*$) and Fuzzy Negative Ideal Solution *(FNIS) $\tilde{v}_j^-$

(5,6 formula)

$$\tilde{v}_j^- = \begin{cases} \min\limits_{i=1,\ldots,m} \tilde{v}_{ij}; j \in B \\ \max\limits_{i=1,\ldots,m} \tilde{v}_{ij}; j \in C \end{cases} \quad (5)$$

$$\tilde{v}_j^* = \begin{cases} \max\limits_{i=1,\ldots,m} \tilde{v}_{ij}; j \in B \\ \min\limits_{i=1,\ldots,m} \tilde{v}_{ij}; j \in C \end{cases}$$

$$FPIS = \{\tilde{v}_j^* \mid j = 1,\ldots,n\}$$

$$FNIS = \{\tilde{v}_j^- \mid j = 1,\ldots,n\} \quad (6)$$

:step 5: calculation of size distances by fuzzy Oghlidos distance

$$D(\tilde{a},\tilde{b}) = \sqrt{\frac{1}{4}\left[(a_1-b_1)^2 + (a_2-b_2)^2 + (a_3-b_3)^2 + (a_4-b_4)^2\right]} \quad (7)$$

distance of each strategy from positive ideal is calculated by formula 8

$$d_i^* = \sum_{j=1}^{n} d(\tilde{v}_{ij}, \tilde{v}_j^*), \mathrm{i} = 1,\ldots,m \quad (8)$$

:distance of each strategy from positive ideal is calculated by formula 9:

$$d_i^- = \sum_{j=1}^{n} d(\tilde{v}_{ij}, \tilde{v}_j^-), \mathrm{i} = 1,\ldots,m \quad (9)$$

Step 6: calculation of relative proximity to ideal and ranking (formula 10)

$$CI_i = \frac{d_i^-}{d_i^- + d_i^*}, \quad (10)$$

From combination of analysis of strong and weak points, opportunities, threats and Topsis-Fuzzy in 2008 by Celik et al. (2008) for writing and prioritization of strategies in 5 important ports of Turkey namely Ezmir, Mersinm, Heydarpasa, Embarli and Jamport was used. Six strategies, one for

* Fuzzy Negative Ideal Solution

all ports and five for each one for one port were suggested and their performing caused a high increase in structural dimension of Turkish ports among European ports (Celik et al, 2009).Because of deficit information or unavailable information in real world, data aren't usually absolute; but often are fuzzy. So in this study, it was tried to use Topsis method with fuzzy data in order to dimension prioritization of main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro Company). Examined standards are used for prioritization of mentioned sub-scales of affective factors on PMS. Fuzzy values of verbal factors for acceptability of each alternative have been shown in Table 4 (Chen, 2000).

Table 4: verbal factors for weight determination of standards or scales

Very little	VL	(0, 0, 1, 2)
little	L	(1, 2, 2, 3)
Less than average	ML	(2, 3, 4, 5)
Average	M	(4, 5, 5, 6)
More than average	MH	(5, 6, 7, 8)
great	H	(7, 8, 8, 9)
Very great	VH	(8, 9, 10, 10)

4. Data Analysis

In this part of the study, we try to be proportionate to the objectives and methodology of research (surveys) using statistical techniques to quantify hypotheses.

4.1. Kolmogorov-Smirnov Test

This test is done to check the normality of data distribution and was used in the statistical community. The results obtained from the use of these tests are presented in Table 5.

H0: The population of normally distributed data sets.

H1: The population distribution of abnormal data sets.

Table 5: One-Sample Kolmogorov-Smirnov Test Friedman Test

		Formalization	Integration	Utilization
N		47	47	47
Normal Parameters[ab]	Mean	3.1192	3.4728	3.3951
	Std. Deviation	.58256	.53281	.58835
Most Extreme Differences	Absolute	.074	.085	.077
	Positive	.055	.067	.052
	Negative	-.071	-.083	-.087
Kolmogorov-Smirnov Z		1.028	3.441	1.019
Asymp. Sig. (2-tailed)		.041	.023	.008

As seen in Table 5, obtained error value is less than R error variable. Therefore, to test the null hypothesis, using normal distribution of data in a statistical population is rejected. Thus, we use analysis of data from a series of nonparametric statistics.

4.2. Friedman test

The test to check whether the same factors that affect the priority of PMS is used.

That is the same review priority hypothesis test factors:

H0: factors are identical.

H1: Priority factors are not identical.

As seen in Table 6, the obtained sig is less than the error of study (0.05), so to test the null hypothesis, equal Priority factors are rejected.

As seen in Table 7, utilization is the first importance factor; formalization is the second importance factor and third importance factor is integration.

Table 6: The results using the Friedman test

Test Statistics[a]	
N	47
Chi-Square	81.357
Df	4
Asymp. Sig.	.000

a. Friedman Test

Table 7: The ranking of the main factors

Factors	Mean Rank
Formalization	4.18
Integration	3.86
Utilization	4.61

4.3. Binomial test

This test was used to assess the levels of the factors.

Table 8: Results of applying the binomial test

Factors	The Observed Rate	Ratio Test	Sig	Test Result
PMS	0.74	0.6	0.000	Desired level
Formalization	0.79		0.000	Desired level
Integration	0.61		0.000	Desired level
Utilization	0.75		0.000	Desired level

4.4. Result of applying Fuzzy TOPSIS Technique

Fuzzy decision making matrix and fuzzy weight of main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro Company, Tehran, Iran) by using experts' comments was resulted as following:

Table 9: decision making matrix and fuzzy weights

Variables	5	6	7	8	7	8	8	9	8	9	10	10
	Formalization				Integration				Utilization			
P1	4	5	5	6	8	9	10	10	7	8	8	9
P2	4	5	5	6	4	5	5	6	8	9	10	10
P3	2	3	4	5	5	6	7	8	4	5	5	6
P4	4	5	5	6	7	8	8	9	5	6	7	8
P5	8	9	9	10	4	5	5	6	8	9	10	10
P6	7	8	8	9	4	5	5	6	4	5	5	6
P7	7	8	8	9	4	5	5	6	5	6	7	8
P8	5	6	7	8	4	5	5	6	7	8	8	9
P9	5	6	7	8	7	8	8	9	5	6	7	8
P10	4	5	5	6	7	8	8	9	8	9	10	10
P11	5	6	7	8	7	8	8	9	5	6	7	8
P12	4	5	5	6	7	8	8	9	7	8	8	9
P13	7	8	8	9	7	8	8	9	8	9	10	10
P14	5	6	7	8	7	8	8	9	7	8	8	9
P15	4	5	5	6	8	9	10	10	5	6	7	8

For ranking of sub-factors of main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro company), Fuzzy TOPSIS Technique was used that its result come in Table 10.

As it is seen in above table "Planning, Control and coordination of the activities" as the most important sub-factors that is important on main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro company). Also "Measurement procedure definition and Control, evaluation and involvement of employees" are in the next rankings.

5. Discussion and conclusions

The increasing interest in the Performance Measurement Systems (PMS), due to the broadening of the spectrum of performances required and to the support of programs for performance improvement (JIT and TQM), has led to, on one hand, an updating of the accounting systems and, on the other, an extension to the non-cost performances. Much has already been said, in the literature, about the updating of the accounting systems, while the extension to the non-cost performances poses the problems of greater complexity and articulation of the PMS.

This research, thus, was aimed at the identification of the conceptual main affective factors and the constructive factors of the modern PMS, in the attempt to take part in the lively theoretical and managerial debate on the theme, a debate not yet adequately supported by empirical evidence of a broad spectrum. The great number of firms taking part in this survey bears witness to the high level of interest that the PMS design is causing.

A primary result obtained from this research regards the nature of the structure of the PMS itself. Among the aforementioned models, it can be asserted that in the TONDAR 90 Deputy, Iran Khodro Co analyzed the structure adopted seems referable to the “frustum” model, in which there is synthesis between performances, but without reaching a single comprehensive result: the cost and non-cost main factors (in their turn sub-divided into time, flexibility and quality) are kept separate.

Based on the result of this research, utilization is the first importance factor; formalization is the second importance factor and third importance factor is integration based on Friedman Test. Also, "Planning, Control and coordination of the activities" as the most important sub-factors that is important on main affective factors on PMS (case study: TONDAR 90 Deputy, Iran Khodro company) .also "Measurement procedure definition and Control, evaluation and involvement of employees" are in the next rankings based on prioritizing the sub-factors

by using of the Fuzzy TOPSIS Technique. Therefore, we propose to managers that more attention to these main factors for efficiency PMS in all of the organization.

Table 10: final ranking of sub-factors of main affective factors on PMS (Case Study: TONDAR 90 Deputy, Iran Khodro company)

	Sub Factors	D_i^+	D_i^-	Cc_i	Rank
Formalization	Measure object definition	1.242524508	1.858084041	0.599264309	5
	Measure responsibility individualization	1.480685123	1.63824325	0.525258375	12
	Measure detail degree	1.801355391	1.287470412	0.416815481	14
Integration	Measurements synthetic report compilation	1.46650772	1.631129829	0.526572203	10
	Measurement procedure definition	1.238190526	1.900808708	0.605546089	2
	Balance sheet accounting	2.065129843	1.437848779	0.410464617	15
	Analytical cost accounting	1.512034178	1.58840515	0.512316153	13
	Budgeting	1.469285882	1.629393994	0.525834891	11
Utilization	MP & CS about inventory	1.374914583	1.742423092	0.558945893	7
	MP & CS production processes	1.251231212	1.877778455	0.600119097	4
	MP & CS about customer orders	1.374914583	1.742423092	0.558945893	8
	Strategic Planning	1.331425107	1.757635936	0.568987117	6
	Planning, Control and coordination of the activities	1.06730376	2.074588982	0.66029911	1
	Control, evaluation and involvement of employees	1.239831971	1.8689292	0.601181338	3
	Benchmarking	1.377607121	1.731577934	0.556923407	9

References

Allen, John R. (1996). The uses of performance measurement in government. *Government Finance Review* 12(4), 11-15.

Fountain JJ and Roob M (1994). Service efforts and accomplishments measures: Development and use for government services. *Public Management* 76(30), 6-12.

Gore Al (1997). *Serving the American public: best practices in performance measurement*. Washington D. C.: National Performance Review.

Hatry, Harry P., Louis H. Blair, Donald M. Fisk, John M. Greiner, John R. Hall, Jr., & Philip S. Schaenman. (1992). *How effective are your community services?: Procedures for measuring their quality* (2nd ed.). Washington D. C.: The Urban Institute: ICMA.

Hwang CL and Yoon K (1981). Multiple Attribute Decision Making: Methods and Applications, Berlin, Springer.

Kingdon J (1995). *Agendas, alternatives, and public politics* (2nd ed.). The University of Michigan. Harper Collins College Publishers.

Leithe J (1998). Guidelines for budget making. *American City & County* 113(9), 8.