

Order Preference of Efficient Stakeholders on Organizational Effectiveness and Their Related Goals via TOPSIS

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Abstract: The strategic factors directly affect on organizational survival and effectiveness. The order preference of such factors and the factors in themselves characterize that on what factors and goals the organization should focused to improve its effectiveness. In the current study, the stakeholders of Persian Gulf International Transport (PGIT) Company and their goals were identified based on the given company directors' view. In order to conduct some paired comparisons between stakeholders' satisfaction and their related goals, some questionnaires were designed and distributed among company experts and stakeholders. By using TOPSIS quantitative technique, analysis of the questionnaires data indicated that this method is not appropriate for order preference of organization stakeholder group and personnel play more important role in Organizational Effectiveness (OE). Similarly, according to these findings, "customers" and "suppliers" were ranked as first and second preferred places, respectively. Also, the order preference of stakeholders' goals showed that "On time payment to suppliers" (regarding to suppliers' expectations) was ranked as first place. It is worthy to note that this study has been carried out in Iran Services Sector for the first time.

Key words: Organizational effectiveness • Stakeholder groups • Strategic factors approach • TOPSIS technique

INTRODUCTION

Organizations are the most important social bodies in current era. From birth to death, various organizations efficiently affect on all aspects of human life. Thus, as one of branches of management science, the study on these social bodies has special place in this respect. In management literature, experts in organizations have studied different aspects of this subject, among them, Organizational Effectiveness Assessment and its calculation technique are very important. In this research, it is tried to use Strategic Factors Approach which is one of effectiveness evaluation approaches, as well as, TOPSIS decision making technique for order preference of strategic factors (stakeholders).

Generalities

Case Study Design: The organizational goals are determined by its board of directors or top management

and this goal results in organization plan and structure. Environment demands organization differently and contradictorily, so top management have to response to such demands. Usually, to remove such differences, organizations use four methods: Negotiation or bargaining, admission of performance satisfactory level, observance of ordering and preferences determination [1]. For this reason, of top managerial tasks is order preference of organizational goals, since such goals appertain to organizational key factors and stakeholder groups and achieving to these goals directly affects on organization key stakeholders' consent (for the sake of their importance for the organization, they are called strategic factors) while leading to satisfaction improvement. If we consider the goal which is agreed by most of the organization researchers and scholars and served as necessary condition for organization achievement, so that our view would be more clear. This goal is organization survival, which is assumed as

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effectiveness discipline, whereas in some occasions such goal may lose its validity as effectiveness discipline [2].

Study Goal: This study aims at stakeholders' order preference (strategic factors) in an organization and their needs and objectives for planning to meet their requirements in order to improve effectiveness and to involve such results in formulation of organizational strategy.

Questions of Research

- Is it possible to make order preference for organizational stakeholder groups through using TOPSIS technique?
- Which of stakeholder groups are more important in organizational effectiveness?
- What is the preference of stakeholders' goals?

Research Hypotheses:

- One could make order preference for organization stakeholder groups via TOPSIS technique.
- Personnel enjoy higher preference in organizational effectiveness.
- Customers' related goals have utmost preference.

Study Backgrounds: In a study which is conducted by Mr. Mohammad Baghebani at Allameh Tabatabaei University (ATU) in 2004, where t organizational stakeholders were ranked by order preference in automotive industry sector [3]. Another research was carried out by Mahmoud Shali at Iran University of Science and Technology (IUST) in 2003 where the effective factor on managerial effectiveness were identified and ordered by preference in R & D units [4]. Another thesis was presented by Ms. Forough Farshidfar at IUST where the investment alternatives were ranked by TOPSIS technique in petrochemical downstream industries [5].

In abroad, a paper was presented by Messrs. Li and Lim in 2005, under the title of "Formulating strategies for stakeholder management" [6] and at last, an essay was implemented by Boonstra & Vries in 2008 which called "Managing stakeholders around inter- organizational systems" [7].

Study Literature: To be acquainted with effectiveness, one should study the given literature and investigate into

different methods and approaches of effectiveness. One of requirements in each study is to examine and study its literature subject.

Effectiveness Measurement: The first approach that was presented about effectiveness (which was probably raised during 1950s) was very plain. Effectiveness was defined as a criterion or limit in which the organizational goals are realized. In this definition, of course, there were some ambiguities so it led to restrict researchers' study and using it by managers. One could imply some of these ambiguous points: To whom the given goals belong to in effectiveness definition? Are the long term goals considered within it or short term ones? Are the formal goals considered for the organization or real goals? [2].

If we consider the goal which is agreed by most of organizational researchers and scholars and served as necessary condition for achievement of an organization, our viewpoints would be further clear. As it stated by Robbins [2], this goal is organization survival. An organization acts in order to prolong its existence.

In Rahnama Dictionary, effectiveness is defined as follows:

"Proximity to a goal, the quantity of achievement to the determined objectives and the extent and degree by which an action, activity or effort makes it possible to obtain a predetermined goal" [8].

Generally, by virtue of different criteria, effectiveness could be defined. With respect to organization type, size, technology, Human Resources and its place within public and/or private sectors, such criteria may vary as well. Thus, effectiveness constituent elements of an organization could not be necessarily identical to effectiveness theme of another organization. In this sense, one should consider one or more cases and then characterize effectiveness criteria which are related to the given case(s), accordingly [9].

Through a study which conducted by Parhizgar and Gilbert, it showed that organizational effectiveness scales could be defined for organizations in both public and private sectors. In practice, some of scales are applicable for both sectors, while some other scales are not appropriate for this purpose. Similarly, it requires considering some disputes which occur within effective factors area due to difference in size, industry and time of organization creation [10].

Deft [1] presents some methods for evaluation of organizational effectiveness which are two types.

Traditional Methods

These Methods Are Divided into Three Categories:

- Sourcing Process Methods;
- Intra-organizational Process Method; and
- Goal Achievement Technique

Synchronous Methods

Such Methods Contain Two Following Types:

- Stakeholder Group's Satisfaction Method;
- Competitive Values Method;

However, Robbins [2] categorizes all the given methods into four approaches, including:

- Goal achievement approach
- Systematic Approach
- Strategic factors approach
- Competitive values approach

In this essay, we will use strategic factors approach and describe it as follows.

Strategic Factors Approach: This is the latest approach which has been presented about organizational effectiveness [2]. For the first time, this method was carried out on ninety seven small institutions and organizations in Texas state, US. To determine the amount of organizational effectiveness (in view of each of stakeholder groups) seven related groups were chosen. Each of these groups and the related determination index for their organizational effectiveness were identified.

The conducted study on this group showed that a small institution fails to meet synchronously requirement and needs for all groups. It is possible for an organization to have personnel with high level of satisfaction, while other groups may not be satisfied at the same time [1].

According to this view, an organization is effective which fulfill the requirements of its environmental factors based on which organization survival requires supporting them and this is like a definition which implied by Pfeffer and Selznick. This approach is similar to systemic theory, but it has different foci. Both approaches, consider interdependence (among organizational activities), but strategic factors theory emphasizes on organization as a whole. This approach solely intends to meet the request of ones who are present in organization environment and they may threaten organization survival [2].

In this method, with respect to organization stakeholder groups, some various activities are merged together. Stakeholder group may be one of the external groups of this organization or other organization which plays a remarkable role in its performance [1]. There are several methods to identify and categorize the stakeholders. Such approaches often originate from management order and organization. They usually focus on special aspects of stakeholders' management, identification and assessment of their relative importance and methods which cover them. This means that these methods are focused by different attention and nature and they are specifically not characterized by for development and execution of intra- organizational systems. In checklist forms through a general categorization, stakeholders often include customers, suppliers, competitors, addressees (consumers), managers and developers. One could adapt these checklists to special industries [7]. Generally, organizations and coalitions have different stakeholders. The active bodies may have heterogeneous goals and preferences so they often have such goals and preferences. The stakeholders of ones who affect on organization measures may determine those efforts and preferences [11]. Creditors, suppliers of raw materials and company personnel and owners are the stakeholders and stakeholder groups in an organization [2].

Some of stakeholders in an organization, like personnel and stockholders are assumed as internal stakeholder groups, while some of other ones such as customers and competitor companies are deemed as external stakeholder groups. Similarly, some of factors which indirectly affect on an organization include: Technology, economic systems and population policies. The effect of an element or a factor on an organization (at practical step) identifies whether that factor could serve as a stakeholder (or the factor which affects directly on organization) or not. Any basis or factor may have different relation with several organizations. For instance, labor unions may only a little affect directly on the industries which did not join to the unions, such as publication organizations; however, they extremely and directly affect on labor unions which joined to them [12].

Through communication with stakeholders, managers may achieve to a rapid advancement. (Freidman, 1984) Principally, stakeholder groups consist of government, political groups, stockholders, financial association, pragmatic groups, consumers, pro- consumer groups, unions, personnel, trade union, competitors and suppliers. The other authors classified stakeholders as follows:

Morgan and Hunter (1994) characterized the main stakeholders including internal stakeholders, buyers, suppliers and peripheral stakeholders. Learner and Fraxel defined five major stakeholders as follows: Customers, associations, stockholders, government and personnel. Donaldson and Priston (1995) classified stakeholders into government, investors, political groups, suppliers, customers, commercial associations, personnel and associations. Also, Clarkson (1995) categorized two main stakeholder groups into primary and secondary stakeholders. Similarly, Hendrix and Sadorwski (1999) divided them into four: Regulator stakeholder group, associations, organizational and broker groups. Recently, Sergei (2002) divided stakeholders into three internal, external and intermediate groups [6].

Any stakeholder has a set of unique values, so it is rarely possible for them to have compatible stakeholders and preferences. One should find strategic or several stakeholders approach in company economic model and management of stakeholders. For several decades, a noticeable number of researchers and theorists from different fields like theory of organization, company management and strategy science, dealt with presentation and development of organizational new approach called as management of stakeholders. This viewpoint followed by major development in the fields of organizational design and culture which can be summarized in change of direction from focus on shareholders' interests and values to emphasis on stakeholders' interests and values [13].

Finally, in strategic factors approach it is assumed that the organizational managers pursue the goals within the selected aims which cover the stakeholders of all stakeholders and control the needed sources for organization survival. No aim which selected by the managers is value- free, whether such goals were determined precisely or implicitly [2].

In Robbins' view, [2] to apply strategic factors approach, first we should as top managers to determine the important and effective key factors for organization survival. This action leads to preparation of a list of all beneficent and key factors. Then through using this list, one could assess the relative power of each one. This means that we look at any factor based on the extent that our organization depends on that factor. Do they predominate on the organization remarkably? Is it possible to provide what the stakeholder supply to the organization through another way? How such institutions are compared based on the level of their effect on organizational operation? So thereby a list of most important organization stakeholders will be extracted.

In Table 2, a list of strategic factors (organizational stakeholders) which a commercial institution had as well as criteria based on which the effectiveness of that institution are evaluated, are illustrated.

Third step refers to the expectations of such factors from the organization what they request of an organization? Any stakeholder has specific stakeholder for itself; what goals it imposes on organization to achieve them? Stockholders' goals may be expressed as within framework of profit and/ or an increase in stock value.

The practical profit of strategic factors approach for managers: If it is important for an organization to survive, then the managers should understand exactly that to whom the organization relies on. To make strategic factors into practice reduce this possibility that the managers may unconsciously ignore the group which enjoys power. If the manager knows who should be strengthened to survive organization, he (she) could exert some changes in goals preference in order to change power relations by his (her) strategic factors [2].

In Table 3, four effectiveness evaluation factors are given, in Robbins' view, along with the criteria which used in effectiveness definition as well as the conditions based on which each of them may be more useful than the other.

In Table 4, the characteristics of strategic factors approach are illustrated and compared with three other approaches (Goal achievement approach, systemic approach and competitive values approach).

Thus, with respect to the conducted comparison between 4 approaches, strategic factors approach has been selected for the aforesaid characteristics.

Questionnaires have been also designated with respect to this approach that is in these questionnaires, their stakeholders and goals were compared in pairs.

TOPSIS Technique¹: This technique was introduced by Hwang and Yoon in 1981. In this technique, one could assume any problem as a geometric system including m points in n- dimensional space [14]. TOPSIS algorithm could be illustrated as follows:

Step 1: Transforming decision making matrix to a "Dimensionless Matrix" (DM) by using the following expression:

$$n_{ij} = \frac{r_{ij}}{\sqrt{\sum_{i=1}^m r_{ij}^2}} \quad (1)$$

Where r_{ij} is the elements of decision making matrix.

Table 1: Stakeholder groups and their Organizational Effectiveness Index (OEI) [2]

Stakeholder Group	Effectiveness Index
1- Company owners	Financial efficiency
2- Personnel	Personnel's satisfaction, salary & bonus, supervision & management
3- Customers	Quality of goods & services
4- Creditors	Quantity of credit
5- Society	Organization role in social affairs improvement
6- Raw materials suppliers	Satisfactory transaction
7- Government	Observance of rules & regulations

Table 2: Criterion samples of organizational effectiveness, chosen by strategic stakeholders

Stakeholders	Criterion sample
Owners	Capital return rate, revenues rise
Personnel	Service compensatory method, benefits, satisfaction of work conditions
Customers	Satisfaction of price, quality and services
Suppliers of raw materials	Satisfaction of payments, the expected sales
Loaner to institutions	Ability to pay liabilities
Unions	Competitive wages and benefits, satisfactory work conditions, collective negotiation
Governmental organizations	Obeying of rules and avoidance from committing crimes and offences

Source: Robbins, Stephen, Theory of organization

Table 3: Comparison between organizational effectiveness quartile approaches [2]

Approach	Definition	When it is useful
Achievement to goal	To the extent that an organization is effective. It realizes predetermined goals.	This event is preferred when ... The clear goals have certain time and are measurable.
Systemic	It acquires the needed sources.	There is a clear relation between input and output.
Strategic factors	To some extent, it could meet the requirements for all key factors.	Key factors highly affect on organization and the organization should fulfill their requirements.
Competitive values	Organization focus on the main quartile areas corresponds to stakeholders in key factors.	What should be emphasized by the organization is ambiguous and over time the change in criteria is in favor of organization.

Table 4: Approaches comparison

Row	Characteristic	Goal achievement approach	Systemic approach	Strategic factors approach	Competitive values approach
1	Being new & updated approach concerning to effectiveness			✓	
2	Attention to organizational activities interdependence		✓	✓	✓
3	Consideration of organization as a whole and its environment			✓	
4	Appreciation for stakeholders			✓	
5	Goals order preference			✓	
6	Consideration of powerful stakeholders			✓	
7	Ability to determine the criteria which emphasized by stakeholders			✓	
8	Identifying key factors			✓	✓
9	Focus on organization final goals	✓		✓	
10	Emphasis on the tools and facilities to achieve to final goal		✓	✓	

Step 2: To generate “weighty dimensionless” matrix by assuming W vector as an entry to the algorithm.

That is:

(Assumed of DM) $W = \{W_1, W_2, \dots, W_n\}$ ≈

(2)

Weighed Dimension Matrix:

$$= V = N_D W_{n \times n} = \begin{bmatrix} V_{11}, \dots & V_{1j}, \dots & V_{1n} \\ \dots & \dots & \dots \\ V_{m1}, \dots & V_{mj}, \dots & V_{mn} \end{bmatrix} \quad (3)$$

Where N_D is a matrix in which the scores of indices are dimensionless and comparable and $W_{n \times n}$ is type of matrix where the arrays of its main diameter are non-zero.

Step 3: Identifying the ideal solution and negative ideal solution

$$A^+ = \left\{ \left(\max_i V_{ij} \mid j \in J \right), \left(\min_i V_{ij} \mid j \in J' \right) \mid i = 1, 2, \dots, m \right\} \quad (3)$$

Positive ideal option

$$\begin{aligned} & - \left\{ V_1^+, V_2^+, \dots, V_j^+, \dots, V_n^+ \right\} \\ & \left\{ \left(\min_i V_{ij} \mid j \in J \right), \left(\max_i V_{ij} \mid j \in J' \right) \mid i = 1, 2, \dots, m \right\} \\ & \left\{ \left(\min_i V_{ij} \mid j \in J \right), \left(\max_i V_{ij} \mid j \in J' \right) \mid i = 1, 2, \dots, m \right\} \end{aligned}$$

$= A^-$ = Negative ideal option

$\{j$ Items are related to profit $J = \{j = 1, 2, \dots, N\}$ so that $\{j$ the related refer to cost of $J' = \{j = 1, 2, \dots, n\}$.

Step 4: Calculation of distance value (interval) The distance of i th option from ideal one is calculated by using Euclidian method:

$$= \left\{ \sum_{j=1}^n \left(V_{ij} - V_j^+ \right)^2 \right\}^{0/5} ; i = 1, 2, \dots, m \quad (4)$$

d_{i+} = Distance between i th option from ideal one

$$= \left\{ \sum_{j=1}^n \left(V_{ij} - V_j^- \right)^2 \right\}^{0/5} ; i = 1, 2, \dots, m$$

d_{i-} = Distance of i th option from ideal- negative one

Step 5: Calculation of A_i relative proximity to ideal solution. We define this relative proximity as follows:

$$cl_{i+} = \frac{d_{i-}}{(d_{i+} + d_{i-})} ; 0 \leq cl_{i+} \leq 1 ; i = 1, 2, \dots, m \quad (5)$$

$d_{i+} \neq 0$

It is seen that if $A_i = A^+$, then $d_{i+} = 0$, so we will have $cl_{i+} = 1$. And if $A_i = A^-$ then $d_{i-} = 0$ and $cl_{i+} = 0$. Thus, the closer to A_i option to (A^+) ideal solution, the cl_{i+} will be nearer to unit.

Step 6: Choices order preference. One could rank cl_{i+} of the existing choices based on descending order in the assumed problem [15].

The reasons for using TOPSIS technique include:

- In this technique, it relies on absolute and objective data to the lesser extent and the mainly the subjective judgments of decision makers constitute the input in this method.
- To less degree, processing relies in mathematical equations and systems in this technique.
- In addition to the given distance of A_i option from the ideal point, its distance from the negative ideal point is also considered [16].
- Mr. Abo sinna developed TOPSIS technique for solution of Multipurpose Dynamic Programming and used it in non-linear programming problems [17].
- Deng *et al.* implemented comparison process among companies as a multivariate analysis and developed an effective method for solving such problems by equalization in TOPSIS [16].
- Chen extended TOPSIS concept for developing the methodology of solution of poly- criteria grouping decision making problems within Fuzzy environment and defined a fuzzy positive and negative ideal solutions, accordingly [17].
- By considering positive and negative ideal solution, TOPSIS technique is one of the popular and widespread techniques for multi- indices decision making problems [18].
- One of the advantages of TOPSIS technique is its application in choosing of personnel which has been frequently used for a number of times [19].

Research Methodology: In present research, Persian Gulf International Transport (PGIT) Company has been studied. PGIT Company was registered under the title of Iranian Wheat and Flour Transport Company at Tehran Companies Registration and Industrial Ownership Department on 21/05/1989 and started its activity on 07/08/1989. In 2004, with respect to the overall outlook which was codified for this company to enter non-governmental markets and commercial transport, the

Iranian Wheat and Flour Transport Company renamed into Persian Gulf International Transport (PGIT) Company. Currently, this company has 23 branches, 7 independent representations and 74 agencies that are covered by its provincial branches and they act in the fields of land transportation, storage, warehousing and repairing fleets.

Methodology: With respect to this fact that the present study aims at identifying and characterization of organization strategic factors (stakeholders), so this study is assumed as a survey and since the main approach is the application of TOPSIS technique in this research in order to assess and rank strategic factors, this study will have mathematical- descriptive aspect. The information gathering techniques include:

- Collection of the related literature to effectiveness, evaluation approaches toward effectiveness and weighting and order preference techniques, especially AHP² and TOPSIS through librarian studies.
- Determination of key factors and efficient stakeholders in organizational effectiveness by interview with organization top directors and the experts who are familiar with PGIT Company.
- To identify the importance degree in each of requirements and indices as well as criteria relative weights and strategic factors through distribution of questionnaire among organizational experts and strategic factors. It should be noted that the main data of the present research is gathered based on stakeholders' attitudes and views and whereas the gathering process for such information by attendance interview with each and every members of statistical population is very time- consuming and difficult, so the needed information was collected by questionnaire.

Statistical Population and Sample: The statistical population in the current study is as follows:

PGIT Company Experts

PGIT Company Stakeholders: In this research, for dearth of their number, a 100% sample space was considered for experts and 4 stakeholders and only the personnel and this population were sampled. By using Cochran formula the sample spaces were determined 42 and 40 for personnel and population, respectively, so because of possible incomplete filled out questionnaires, for each group 50 questionnaires were distributed.

Research Execution Stages: At first step, in order to identify the stakeholders and their goals, 5 experts (top and intermediate managers of PGIT Company), especially training and R & D manager, was asked. According to this poll, 6 major stakeholders were characterized:

Stockholders
Personnel
Customers
Suppliers
Population (population)
Creditors

With reference to the units which related to the above-said stakeholders, the given stakeholders subsets were extracted. To identify stockholders, personnel number and levels, customers, suppliers and creditors, it referred to administration, Human Resources, marketing, supplements and financial units respectively and their subsets were characterized. Urban inhabitants in company head office were also considered as other stakeholders of the given company (population). Company stockholders were 4 plus 97.878% of Iran Public Commercial Specialized Mother Company and 2% of Abadan Marine Shipping Company, with 1461 personnel, customers of 21 companies and creditors which included 3 banks and suppliers were 8 companies as well as 500 persons who were the inhabitants in Company head office.

At the next stage, in order to extract Stakeholders' (strategic factors) goals (needs), top manager were asked for extraction of organization stakeholders' goals separately. At this step, they identified what was asked by any stakeholder from the company.

Whereas stakeholder has specific set of stakeholders, what goals he (she) would impose to the organization to achieve to them. One may state stockholders of an organization in the form of profit and/ or an increase in stock value. The population's goals may be entrepreneurship and/ or on time transport of basic commodities. At last, due to multitude of the given goals, through consultation with one of experts (PGIT Company R & D manager) 3 general and broad- based goals for each of stakeholders and totally 18 goals were obtained.

In extraction of these goals, it was tried to include expert comments as it possible (Table 5).

Table 5: The related goals for PGIT Company stakeholders

Row	The related goal	Goal description
1	Stockholders	On time and safe and fast transportation of basic commodities
2		Reasonable rate of capital return for Stockholders
3		Execution of article- 44 (Constitution) and enter into Securities & Exchange Organization
4	Personnel	Satisfaction of salary, wage and services compensation by personnel
5		Personnel's satisfaction of work conditions and existence of appropriate environment
6		Occupational promotion designs for personnel
7	Customers	On time delivery to customers
8		Reasonable quality and safety of goods
9		Commodity suitable price
10	Suppliers	Suppliers' expected sales to PGIT Company with the highest price
11		Keeping market and PGIT Company satisfaction
12		On time payment to suppliers
13	Population	PGIT Company entrepreneurship
14		lack of acoustic pollution and observance Environmental standards
15		grant-in-aids for activity region cultural affairs
16	Creditors	On time repayment of banking credits and facilities to creditors
17		Credits stakeholder of creditors
18		PGIT Company cash flow (turnover) in banking accounts

Table 6: Dimensionless Matrix

Option	On time and safe and fast transportation of basic commodities	Execution of article- 44 (Constitution) and enter into Securities & Exchange Organization	Reasonable rate of Capital return for Stkholders	Satisfaction of salary, wage and services Compensation by personnel	Personnel's satisfaction of work conditions and existence of appropriate environment	Occupational promotion designs for personnel
Stockholders	0.3833	0.0291	0.3977	0.2826	0.4482	0.3557
Personnel	0.4156	0.0074	0.4486	0.4229	0.3754	0.5220
Customers	0.4844	0.9947	0.4608	0.5776	0.3962	0.4594
Suppliers	0.4080	0.0316	0.2623	0.3595	0.3190	0.3127
Population	0.4484	0.0393	0.4382	0.4838	0.5106	0.2935
Creditors	0.2800	0.0352	0.4091	0.2106	0.3725	0.4540
Total	2.4194	1.2073	2.4168	2.3370	2.4219	2.3972
Option	On time delivery to customers	Reasonable quality and safety of goods	Commodity suitable price	Suppliers' expected sales to PGIT Company With the highest price	Keeping market and PGIT Company Satisfaction	On time payment to suppliers
Stockholders	0.3877	0.4930	0.1782	0.3047	0.4987	0.0145
Personnel	0.4570	0.4306	0.4326	0.4594	0.4369	0.0230
Customers	0.5705	0.4087	0.4474	0.3892	0.5175	0.9990
Suppliers	0.3448	0.3038	0.3429	0.3860	0.2598	0.0190
Population	0.3948	0.4308	0.4624	0.4690	0.3466	0.0257
Creditors	0.2013	0.3558	0.4995	0.4191	0.3241	0.0162
Total	2.3562	2.4227	2.3631	2.4274	2.3835	1.0974
Option	PGIT Company entrepreneurship	Lack of acoustic pollution and observance Environmental standards	Grant-in-aids for activity region cultural affairs	On time repayment of banking credits and facilities to creditors	Credits stakeholder of creditors	PGIT Company cash flow (turnover) in banking accounts
Stockholders	0.3458	0.5171	0.2018	0.3703	0.1940	0.5019
Personnel	0.4409	0.4418	0.4421	0.4383	0.4602	0.4346
Customers	0.5308	0.4007	0.4992	0.4667	0.5454	0.4424
Suppliers	0.4000	0.2234	0.3614	0.3742	0.2729	0.3383
Population	0.4200	0.4203	0.4552	0.4376	0.5003	0.3667
Creditors	0.2604	0.3877	0.4205	0.3485	0.3583	0.3385
Total	2.3980	2.3910	2.3802	2.4356	2.3310	2.4224

Step 1: Transforming decision making matrix to a "Dimensionless Matrix" (Table 6)

Table 7: weighty Dimensionless Matrix

Option	On time and safe and fast transportation of basic commodities	Execution of article- 44 (Constiution) and enter into Securities & Exchange Organization	Reasonable rate of Capital return for Stkholders	Satisfaction of salary, wage and services Compensation by personnel	Personnel's satisfaction of work conditions and existence of appropriate environment	Occupational promotion designs for personnel
Stockholders	0.0018	0.0291	0.3977	0.2826	0.4482	0.3557
Personnel	0.0020	0.0774	0.4486	0.4229	0.3754	0.5220
Customers	0.0023	0.9947	0.4608	0.5776	0.3962	0.4594
Supliers	0.0019	0.0316	0.2623	0.3595	0.3190	0.3127
Population	0.0021	0.0393	0.4382	0.4836	0.5106	0.2935
Creditors	0.0013	0.0352	0.4091	0.2106	0.3725	0.4540
Total	0.0114	0.4544	0.0129	0.0422	0.0097	0.0189
Option	On time delivery to customers	Reasonable quality and safety of goods	Commodity suitable price	Suppliers' expected sales to PGIT Company With the highest price	Keeping market and PGIT Company Satisfaction	On time payment to suppliers
Stockholders	0.3877	0.4930	0.1782	0.3047	0.4987	0.0145
Personnel	0.4570	0.4306	0.4326	0.4594	0.4369	0.0230
Customers	0.5705	0.4087	0.4474	0.3892	0.5175	0.9990
Supliers	0.3448	0.3038	0.3429	0.3860	0.2598	0.0190
Population	0.3948	0.4308	0.4624	0.4690	0.3466	0.0257
Creditors	0.2013	0.3558	0.4995	0.4191	0.3241	0.0162
Total	0.0357	0.0098	0.0363	0.0082	0.0243	0.5269
Option	PGIT Company entrepreneurship	Lack of acoustic pollution and observance Environmental standards	Grant-in-aids for activity region cultural affairs	On time repayment of banking credits and facilities to creditors	Credits stakeholder of creditors	PGIT Company cash flow (turnover) in banking accounts
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Population	0.4200	0.4203	0.4552	0.4376	0.5003	0.3667
Creditors	0.2604	0.3877	0.4205	0.3485	0.3583	0.3385
Total	0.0191	0.0231	0.0284	0.0050	0.0461	0.0096

Step 2: To generate "weighty dimensionless" matrix by assuming W vector as an entry to the algorithm (Table 7)

Table 8: the ideal solution and negative ideal solution

	On time and safe and fast transportation of basic commodities	Execution of article- 44 (Constiution) and enter into Securities & Exchange Organization	Reasonable rate of Capital return for Stkholders	Satisfaction of salary, wage and services Compensation by personnel	Personnel's satisfaction of work conditions and existence of appropriate environment	Occupational promotion designs for personnel
A ⁺	0.0023	0.3744	0.0025	0.0104	0.0021	0.0041
A ⁻	0.0013	0.0110	0.0014	0.0038	0.0013	0.0023
	On time delivery to customers	Reasonable quality and safety of goods	Commodity suitable price	Suppliers' expected sales to PGIT Company With the highest price	Keeping market and PGIT Company Satisfaction	On time payment to suppliers
A ⁺	0.0087	0.0020	0.007	0.0016	0.0053	0.4797
A ⁻	0.0031	0.0012	0.0027	0.0010	0.0026	0.0070
	PGIT Company entrepreneurship	Lack of acoustic pollution and observance Environmental standards	Grant-in-aids for activity region cultural affairs	On time repayment of banking credits and facilities to creditors	Credits stakeholder of creditors	PGIT Company cash flow (turnover) in banking accounts
A ⁺	0.0042	0.0050	0.0060	0.0010	0.0108	0.0020
A ⁻	0.0021	0.0022	0.0024	0.0007	0.0038	0.0013

Step 3: Identifying the ideal solution and negative ideal solution (Table 8)

For determination order preference in strategic goals and stakeholders, one should select an appropriate technique. Selection of the using technique, whether in weighting stage or decision making step, may affect undeniably on the resulted ranks [20]. Some of those factors which are not often considered in decision making process such as incomplete information, additional qualitative criteria and improper preferences [18]. In this study, TOPSIS technique has been used.

Findings of Research: In this section, we enter data and information which obtained from questionnaires into EXCEL display screen where through the related stages in AHP and TOPSIS operations, the order preference of stakeholders and their goals were obtained once, in terms of all statistic samples (Research main goal) and once again in terms of experts' view. In the following, six stages of TOPSIS technique are separately stated.

Table 9: distance value (interval)

Stakeholders	di+	di-
Stockholders	0.5764	0.0051
Personnel	0.583451823	0.0051
Customers	0.001615149	0.0051
Suppliers	0.5941	0.5964
Population	0.5897	0.0122
Creditors	0.5943	0.0073

Table 10: A_i relative proximity to ideal solution

Stakeholders	d_i^+
Stockholders	0.008545072
Personnel	0.008732741
Customers	0.760901748
Suppliers	0.500981610
Population	0.020331833
Creditors	0.012089088

Table 11: Order preference

Stakeholders	d_i^+
Stockholders	0.008545072
Personnel	0.008732741
Customers	0.760901748
Suppliers	0.500981610
Population	0.020331833
Creditors	0.012089088

Step 4: Calculation of distance value (Table 9) TOPSIS technique emphasizes that the option shall be selected which is placed at the least distance from positive ideal solution while at the farthest place from the negative ideal solution [21].

Step 5: Calculation of A_i relative proximity to ideal solution (Table 10).

Step 6: Choices order preference. One could rank d_i^+ of the existing choices based on descending order in the assumed problem (Table 11).

Hypothesis 1: TOPSIS technique is appropriate for order preference of organization stakeholder groups. As it shown in Table 12, among 6 stakeholders, only 2 stakeholders are similar in order preference in terms of statistical population and experts' view, while the option-4 is different. This means the customers are placed at first preference status in terms of statistical population and experts' view, while the population is placed at third preference in terms of statistical population and experts' view and the rest stakeholders have different preference in both views. In other words, in about 77% of stakeholders the preference varied and only in over 23% of them this preference was fixed. Therefore, the order preference in statistical population differs from in organizational experts; as a result, the hypothesis 1 is rejected in this study. Consequently, one could conclude that TOPSIS technique is not an appropriate model for order preference the stakeholders.

As Diagram 1 shows, in terms of statistical population's view, the preference of stakeholders in PGIT Company is as follows:

First customers, second suppliers, third population, fourth creditors, fifth personnel and sixth are stockholders.

And according to the experts' view, the stakeholders' preference is the followings:

First customers, second personnel, third population, fourth stockholders, fifth creditors and sixth are suppliers.

To achieve the organizational effectiveness, it is better for the given company to pay attention to customers' goals at first place and prioritize their needs (on time delivery, reasonable quality and appropriate price) and then consider the requirements respectively of suppliers, population, creditors, personnel and stockholders at last.

Hypothesis 2: Personnel are more important in organizational effectiveness.

Table 12: Order preference of stakeholders in terms of statistical population and experts

Stakeholders	In terms of statistical population		In terms of experts	
	Importance percentage	Rank	Importance percentage	Rank
Customers	76.09	1	20	1
Suppliers	0.50	2	14	6
Population	0.02	3	18	3
Creditors	0.012	4	15	5
Personnel	0.008	5	18	2
Stockholders	0.008	6	15	4
Total	100%		100%	

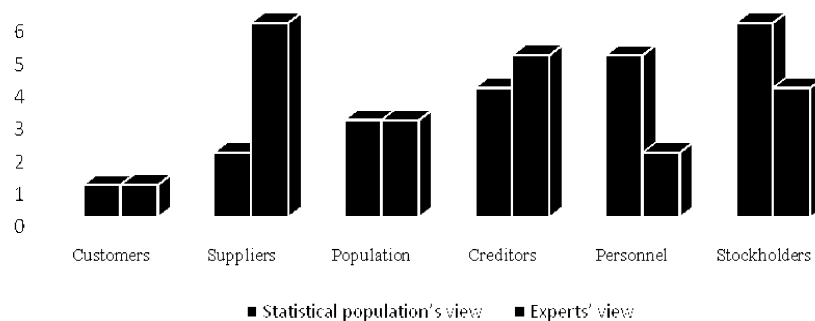


Diagram 1: Comparison between Stakeholders' order preference in terms of statistical population and experts

According to data in Table 12, one can conclude that customers are more significant in organizational effectiveness. Customers were placed at first preference both in terms of statistical population and experts, as well. However, personnel are placed at fifth preference in terms of statistical population (research goal). Therefore, hypothesis 2 which is based on this idea that personnel are more important in organizational effectiveness is also rejected.

Hypothesis 3: Customers' expectations are at highest preference.

According to the given data in this table, the goal of on time payment to suppliers is placed at first preference in statistical population's view (research goal). This goal is related to suppliers' expectations; thus, the hypothesis 3 will be also rejected in this study.

RESEARCH INNOVATION

In Table 14, the results which obtained from a conducted study on 97 institutions in Texas state for identifying stakeholder and effectiveness index were compared with the sample of stakeholder and effectiveness indices in Robbins' view and the present research results.

As it observed at the following table, at the maximum level the stakeholders are the same at all three approaches, like stockholders (company owners or proprietors), personnel, customers, suppliers (suppliers of raw materials), banks (creditors or loaner to institutions).

At the first view (97 institutions in Texas) the population stakeholder is identical in the present study; however, this is not implied in Robbins' view and it expressed unions. Government was stated as stakeholder at first and second approaches but it is not implied in the present study, because the stakeholder

governmental organizations of PGIT Company are mainly banks, while PGIT Company is also a governmental organization. For this reason, (by top managers' view) the governmental organizations were not determined as stakeholder.

There are some differences at effectiveness indices part in terms of three views which we deal with them.

- Based on view of the present study, all three stakeholder effectiveness indices of the stockholders differ from ones in two other approaches (On time, safe and fast delivery of basic commodities, execution of article-44 (Constitution) and entrance into Securities & Exchange Organization and capital return rate).
- Stakeholder effectiveness index for personnel, based on the current study view, is similar to two other approaches, but the index of occupational promotion designs in this study has not been mentioned in two other views.
- In two effectiveness indices for suppliers' expected sales to PGIT Company at the highest price and keeping market and satisfaction relating to the given company stakeholder suppliers, was only mentioned in the current research, while on time payment to suppliers was expressed both in this study and Robbins' view.
- All three effectiveness indices relating to stakeholder banks have been only implied in the present study. (On time repayment of banking credits and facilities, credit stakeholder for creditors, PGIT Company cash flow (turnover) in banking accounts).
- The indices which are related to Population stakeholder were only mentioned in the current study. (PGIT Company entrepreneurship, lack of acoustic pollution and observance of environmental standards, grant-in-aids and cooperation in cultural affairs of the activity region)

Table 13: Preference of stakeholders' goals in statistical population's view

Weight	Goals
0.4802	On time payment to suppliers
0.3764	On time and safe and fast transportation of basic commodities
0.0198	Credit stakeholder of creditors
0.0180	Satisfaction of salary, wage and services compensation by personnel
0.0153	Commodity suitable price
0.0152	On time delivery to customers
0.0119	grant-in-aids for activity region cultural affairs
0.0102	Keeping market and PGIT Company satisfaction
0.0097	Lack of acoustic pollution and observance Environmental standards
0.0080	Entrepreneurship by Persian Gulf company
0.0079	Occupational promotion designs for personnel
0.0053	Execution of article- 44 (Constitution) and enter into Securities & Exchange Organization
0.0047	Reasonable rate of capital return for Stockholders
0.0040	Reasonable quality and safety of goods
0.0040	Personnel's satisfaction of work conditions and existence of appropriate environment
0.0040	PGIT Company cash flow (turnover) in banking accounts
0.0034	Suppliers' expected sales to PGIT Company with the highest price
0.0020	On time repayment of banking credits and facilities to creditors

Table 14: Comparison between the mentioned results and view in chapter II and the present study

Results & Views	Stakeholder	Effectiveness Index
Study on 97 institutions in Texas state	Company owners	Financial efficiency
	Personnel	Personnel's satisfaction, salary & bonus, supervision & management
	Customers	Quality of goods & services
	Creditors	Quantity of credit
	Population	Company role in social affairs improvement
	Raw materials suppliers	Satisfactory transaction
	Government	Observance of rules & regulations
Robbins	Owners	Capital return rate, revenues growth
	Personnel	Service compensation method, benefits, satisfaction of work conditions
	Customers	Satisfaction of price, quality and services
	Raw materials suppliers	Satisfaction of payments
	Loaners to Institution	Ability to pay liabilities
	Unions	Competitive wages and benefits, satisfactory work conditions, collective negotiation
	Governmental organizations	Obeying of rules, Avoidance from committing crimes & offences
Present study	Stockholders	On time, safe and fast transport of basic commodities, execution of article- 44 (Constitution) and entering into Securities & Exchange Organization, capital return rate
	Personnel	Satisfaction of personnel's salary, wage and compensatory services, personnel's satisfaction of work conditions and the existing appropriate environment, occupational Promotion designs
	Customers	Goods on time delivery to customers, reasonable quality and safety of commodities, goods appropriate price
	Suppliers	Suppliers' expected sales to Persian Gulf Company with the highest price, maintenance of market and Persian Gulf Company satisfaction, on time payment to suppliers
	Banks	On time Repayment of banking credits & facilities to creditors, credit stakeholder of creditors, Persian Gulf company cash flow in banking accounts
	Population	Entrepreneurship by Persian Gulf company, lack of acoustic pollution and observance Environmental standards, grant-in-aids for activity region cultural affairs

Finally, we conclude that stakeholders and their goals may vary from one organization to another, so one could not define number of stakeholders and their goals for all organizations at a fixed rate.

CONCLUSION AND SUGGESTIONS

In the current research, first stakeholders of personnel of Persian Gulf International Transport Company and their goals were determined and ranked by TOPSIS technique based on order preference. To codify their strategic plans, these companies and organizations should pay more attention to the stakeholders and goals with higher level of preference. And then try toward achieving the stakeholders' objectives. According to research findings, customers' satisfaction is the first preference and then satisfaction of suppliers, society, creditors, personnel and stockholders, respectively. It is necessary, therefore, for the companies to consider these order preferences, to codify their strategies for organizational effectiveness improvement.

It is suggested that:

- Emphasize on tangible, realizable and measurable goals;
- Due to existing different views among individuals and units to identify organization stakeholders, it is purposed to use some techniques like Delphi, Brain storm etc while trying to employ professional experts.
- With respect to stakeholders' stand in organization and organizational strategy, it is suggested to establish stakeholders administration unit in organization.
- Within certain time intervals, organization performance report shall be delivered to stakeholders in order to be informed about the latest status of the organization.
- Within certain time intervals, it shall be negotiated with the stakeholders so that it is identified whether their satisfaction was meet or not, in order to take the needed measures by the organization to meet their satisfaction, if it needed.
- It should be asked stakeholders to present their views for determination of the goals.

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