Journal of Business Decision and Risk Sciences (JBDRS)

https://doi.org/

Journal Homepage: www.JBDRSJournal.com

ORIGINAL RESEARCH PAPER

Designing a Model for Defining Key Performance Indicators in Iranian Oil Companies

Ahmad Mousaei [a, *]; Majid Farzinfar [b]

[a] *Department of Market Research, Research Institute of Petroeum Industry, Tehran, Iran.*
[b] *Department of Statistics, Faculty of Mathematical Sciences and Statistics, University of Isfahan, Isfahan, Iran.*

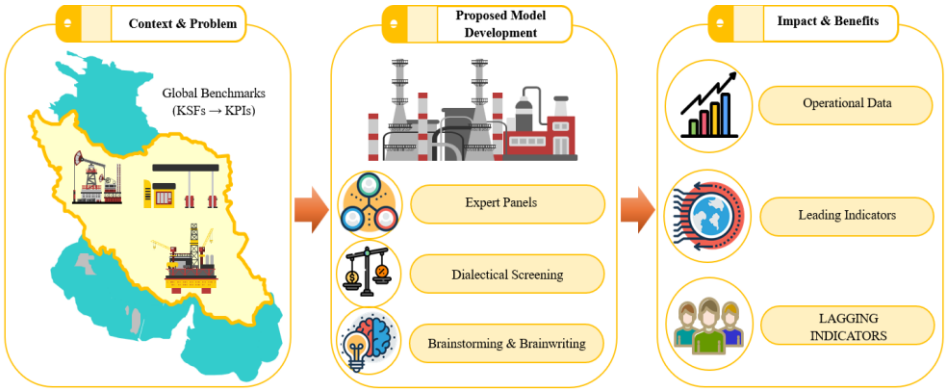
P A P E R I N F O

Paper history:
Received: 06/06/2026
Revised: 07/07/2026
Accepted in revised form: 09/09/2026
Published: 09/30/2026

***Keywords*:**
Performance Management;
Key Success Factors (KSFs);
Oil Industry.

A B S T R A C T

In leading global oil companies, the identification of Key Success Factors (KSFs) and the subsequent definition of Key Performance Indicators (KPIs) are essential for assessing performance and ensuring strategic alignment. Despite this industry standard, Iranian oil companies often lack a structured framework for performance measurement. This paper addresses this gap by proposing a localized model for establishing KPIs, developed through a qualitative analysis and extensive benchmarking of major international oil corporations. The research employs a hybrid methodology, incorporating expert panels, brainstorming, dialectical screening, and brainwriting to achieve consensus. The proposed model utilizes a hierarchical planning structure that distinguishes between leading and lagging indicators and classifies metrics into base parameters, preliminary indicators, and main managerial KPIs. This framework effectively translates granular operational data into high-level strategic insights, enabling senior management to monitor progress dynamically. By integrating these indicators with organizational objectives and periodic audits, the model establishes a continuous feedback loop that prevents resource waste, enhances decision-making, and ensures that operational activities within the Iranian oil industry remain firmly aligned with national strategic goals.



1. Introduction

In the literature on Performance Management, the subject of Performance Assessment is addressed. Performance Assessment is a process through which an individual, a process, a group, an organizational unit, an organization, or a project is measured and assessed over a specified period of time. Without a Performance Assessment system that continuously monitors and controls the performance of all organizational components in accordance with organizational strategies, an organization cannot effectively implement those strategies [1]. Such a system serves several objectives, the most important of which are identifying organizational strengths and weaknesses, fostering organizational growth, improving and refining activities, enhancing decision-making regarding future plans and objectives, and ultimately improving resource allocation and enabling more effective utilization of facilities and human resources in the implementation of approved plans [2].

One of the most important and critical components of Performance Assessment systems is the set of components or indicators that must be established and measured, which constitutes the main focus of the present study. Many management scholars hold that what cannot be measured cannot be properly managed. This belief has encouraged managers to develop mechanisms for performance measurement. Since 1980, many researchers have relied primarily on financial dimensions as criteria for evaluating performance [3].

* Corresponding Author: Ahmad Mousaei
E-mail address: Mousaei@gmail.com
ISSN:
URL: https://www.jbdrsjournal.com/article_735689.html

Please cite this article as: H. Mousaei, & M. Farzinfar, *Journal of Business Decision and Risk Sciences (JBDRS)*, 2026, 2(3), 97-102. https://doi.org/

/© 2026 The Author(s). Published by Power of New Vision Movement Institute.

Subsequently, organizations expanded performance measurement beyond accounting systems and developed more diverse Performance Assessment indicators [4]. Today, Performance Assessment indicators are highly diverse, spanning various technical and non-technical dimensions and frequently incorporating strategic factors and aspects of the external environment [5].

The aim of the present study is to benchmark major global oil organizations in order to develop a model for determining Key Performance Indicators (KPIs) for oil companies in Iran. To this end, several relevant topics are briefly discussed in the following section under the heading of "Theoretical Foundations." The next section reviews the research literature and related previous studies. The research methodology and findings are then presented in the subsequent sections, and the paper presents its conclusions.

1.1. Key Success Factors (KSFs)

All major and leading companies in the world tend to define and articulate their path to success; that is, they seek to identify their success criteria and use them as a guide. To achieve success, an organization (and, more broadly, any system) must pay attention to a set of factors known as Success Factors (SFs) [6,7]. When Success Factors are ranked and the importance of each is determined, some of them are considered more important than others. These factors are referred to as Key Success Factors (KSFs) or Critical Success Factors (CSFs). Compared with other Success Factors, Key Success Factors are more essential in nature. Therefore, Key Success Factors are a subset of Success Factors that a company must possess in order to succeed in its industry and business, rather than factors that it would merely be advantageous to possess. It should be noted that Key Success Factors are always limited in number [8].

Numerous definitions of Key Success Factors (KSFs) have been provided in the related literature. One of the most important definitions is attributed to Rockart, who defines KSFs as a limited number of areas of activity that will lead to successful competition. In another definition, Bruno and Leidecker state that KSFs are characteristics, conditions, or variables that, if properly managed, can have a significant impact on an organization's competitive success. Pinto and Slevin regard KSFs as factors that substantially improve the chances of successful project implementation. In the field of strategic management, the definition of Critical Success Factors (CSFs) is more comprehensive and represents an ideal link between environmental conditions and business characteristics. KSFs are those components of an organization's strategy in which the organization must excel in order to achieve competitive advantage. likewise argues that KSFs are factors that must be done well and that managers must continuously monitor them in order to achieve success[3].

1.2. Key Performance Indicators (KPIs)

The previous section described Key Success Factors (KSFs). By themselves, these factors remain at the level of concepts and criteria and are not quantified. With respect to the successful performance of an individual, a machine, a group, an organization, a project, and so forth, the means of quantifying and measuring these factors is to define Key Performance Indicators (KPIs). In practice, organizations establish a set of KPIs for each Key Success Factor in order to avoid futile efforts and the waste of energy and resources, as well as to move along the path of the organization's mission and strategic objectives. KPIs help organizations measure their progress toward organizational objectives. These indicators are used to measure, monitor, and evaluate the successful implementation and effectiveness of the management system. In fact, these metrics provide a high-level, real-time representation of a business or organization based on specific, predefined scales, and by showing the results, they can strengthen the conditions for organizational success. It should also be noted that the use of KPIs is an appropriate way of collecting data and information, which is an additional benefit beyond their primary purpose [9].

It is also worth noting that, similar to Success Factors (SFs), KPIs are, in practice, a subset of a larger set known as Performance Indicators (PIs). By examining these indicators, an analyst identifies the most useful and applicable ones and designates them as KPIs. Thus, KPIs constitute a subset of PIs that have strategic value and priority, and their continuous monitoring and tracking means controlling organizational strategies. Therefore, although dozens of indicators may be defined, it is not realistically possible to manage and control a large number of indicators. Accordingly, it is logical to establish a limited number of indicators and continuously monitor them.

It is useful to distinguish between the two concepts of Key Success Factors (KSFs) and Key Performance Indicators (KPIs) and to discuss their differences further. KSFs are qualitative in nature; that is, they are expressed descriptively. For example, a university might regard cash flow and academic programs as among its KSFs. If the university's president were asked about cash flow, they might state that greater cash flow would bring the institution closer to greater success, and vice versa. They might also argue that academic programs that are more closely aligned with contemporary concepts, such as artificial intelligence, would lead to greater success for the university. KPIs, however, are entirely quantitative in terms of their expression and, in fact, complement the concept of KSFs, because the factors are expressed purely qualitatively. In the university example above, KPIs related to cash flow might include the following: the amount of funding secured annually (in Rials), annual revenue generated from professional and open-enrollment courses (in Rials), and monthly current expenditure relative to the number of faculty members (%).

A KPI may have either a positive or a negative dimension. For example, the number of satisfied customers represents a positive dimension, whereas the loss rate represents a negative dimension. It should also be noted that two thresholds are often defined for indicators: (a) a success threshold, meaning that if the indicator's value improves beyond this level, success is achieved; and (b) a failure threshold, meaning that if the indicator's value deteriorates beyond this level, an emergency situation arises. Various guidelines exist for designing indicators. For example, indicators should be aligned with the organization's strategies; a balanced set of several indicators should be used; and indicators should be appealing, understandable, and usable for their intended users.

1.3. Key Performance Parameters (KPPs)

The Key Performance Indicator (KPI) described in the previous section relates to the performance of something that performs an action or activity and whose performance is intended to be measured. For example, an employee assigned the task of writing a report might be evaluated using a KPI such as the number of completed pages of the report.

Key Performance Parameters (KPPs), by contrast, provide another means of quantifying Success Factors (SFs). These parameters are used to measure the characteristics of a system rather than the performance of an action or activity. For example, in the case of a software system, database capacity, data processing speed, and the level of menu color coding might be considered KPPs. As another example, in a factory, a manager might establish and measure parameters such as the production waste rate and the average distance between workshops and warehouses.

1.4. Objectives and Key Results (OKRs)

Objectives and Key Results (OKRs) are a framework in an organization's strategic planning that defines objectives and the method for measuring progress toward those objectives. In other words, in the strategic planning of an organization, a set of objectives is established, and then several Key Results are defined for each objective. In fact, objectives represent the final or general points to be achieved, whereas Key Results tell the organization's managers what results must be achieved in order to reach those objectives. Thus, in practice, these results are themselves a type of lower-level objective.

To clarify these concepts, consider the following example. In a hypothetical manufacturing organization, one objective may be defined as increasing customer satisfaction with its products. Two Key Results may then be established: reducing the waiting time for customers to receive products to less than three days, and reducing the number of customer complaints regarding defective products to fewer than seven per month. Thus, from the perspective of the managers of this manufacturing organization, achieving these two expectations (results) would indicate that customer satisfaction has increased.

In a way, it can be said that the language used to express objectives is rooted in Key Success Factors (KSFs), whereas the language used to express results originates from Key Success Factors. In the example above, customer satisfaction is a Key Success Factor whose increase is considered an objective. Similarly, the number of customer complaints is a Key Performance Indicator (KPI), and reducing this indicator to a predefined Threshold is considered a Key Result.

1.5. Benchmarking

Benchmarking (or learning from benchmarks) was the first method employed by Xerox in 1980 and is now widely used and accepted. The company has a formal definition of Benchmarking: “a continuous process of measuring products, services, and practices against the toughest competitors or companies recognized as market leaders.

Benchmarking can be conducted in different ways. The three main types are Internal, Competitive, and Generic Benchmarking. Internal Benchmarking involves comparison between departments or internal units of an organization. Competitive Benchmarking involves comparing one's performance with that of direct competitors within the industry. Generic Benchmarking refers to comparing oneself with a process or a task from outside one's own industry.

Internal Benchmarking is the least expensive and most convenient option. The processes are likely to be similar, and the data can be easily compared. There are also fewer concerns about information confidentiality. However, with this approach, the company is less likely to experience substantial improvement because everything is limited to the organization's internal framework. When Competitive Benchmarking is conducted, knowledge can be gained from within the industry. Differences in the conditions faced by each company may create difficulties in comparing measures and processes. Generic Benchmarking is the most difficult approach, but its results may lead to very significant improvements.

Benchmarking can also be categorized according to levels and objectives, the main categories being Strategic, Performance, and Process Benchmarking. In Strategic Benchmarking, the experiences of organizations are compared at a

high level with regard to objectives, markets, investment levels, and so forth. Performance Benchmarking involves comparing a company's performance in various areas with that of its competitors. Process Benchmarking refers to comparing organizations' experiences regarding the ways in which tasks are performed at the operational level.

In the empirical research literature, Success Factors have included such factors as organizational mission, top management support, clarity and realism of goals and objectives, strategies and plans, communication, the quantity and quality of employees, change management, budget, and contractors and consultants [10-14].

Huser [15] concluded that the Key Success Factors (KSFs) for the upstream oil and gas industry in the world's leading successful companies include organizational strategies, core competencies, and industry Success Factors. In a study by Mir & Pinningto [16], the relationship between project performance and project success was examined. By investigating the effects of leadership factors, human resources, policies and strategies, participation, resources, and Key Performance Indicators (KPIs), they concluded that human resources, together with KPIs, have the greatest impact on project success, whereas the effects of policies and strategies on project success do not have a high priority.

In the context of Iran's oil industry, only a limited number of studies have addressed Success Factors [7], including the studies by Fatemi [17], Sheikhzadeh et al. [7], and Hatefi and Vahabi [6]. Fatemi [17] analyzed the strengths and weaknesses of major projects in Iran's oil and gas industry by examining Success Factors through comparison with project management standards and considered three case studies in the oil and gas industry. In the study by Sheikhzadeh et al. [7], three factors—human resource competency, financial strength, and technical capability—were identified as Key Success Factors for upstream oil industry projects. Their research method involved statistical analysis based on a survey of approximately 90 respondents. Hatefi and Vahabi [6], in addition to identifying and evaluating Success Factors in oil and gas projects, also addressed guidelines for project implementation. Their research findings included 42 Success Factors and 46 guidelines, according to which alignment between objectives and activities, clarity of the scope of projects and plans, and strong management in projects and plans were the most important among the identified Success Factors.

As mentioned earlier, a review of the literature indicates that only a limited number of studies have been conducted on identifying Success Factors in oil and gas projects and extracting strategies for achieving success based on these factors. Therefore, the present study, which focuses on this subject, is innovative from this perspective. In addition, the research methodology comprises a practical combination of methods and techniques, which also makes the present study novel from this perspective.

2. Materials and Methods

The main basis of the research methodology in this paper is Pros & Cons Analysis. Using this method, each Key Performance Indicator (KPI) is discussed, and the advantages and disadvantages of the indicators are analyzed. This is carried out in the form of a group discussion. Therefore, one of the approaches adopted in this research is a branch of Group Decision Making (GDM) known as Group Ideation techniques. The objective is for the group of experts to reach a Consensus, and various scientific methods have been developed for this purpose. Some of the relevant methods concern ideation, some concern how to organize the group of experts, and some concern the description of guidelines for ideation.

In this paper, rather than directly and individually using a particular method, a hybrid model has been devised for obtaining the opinions of experts. The purpose of the hybrid method is to benefit from the advantages of existing ideation methods. The devised ideation method consists of three stages entitled “Preparation,” “Obtaining Opinions,” and “Closing.” Figure 1 shows the research process. It should be noted that whenever experts are referred to, they mean selected experts from the oil industry who have comprehensive knowledge of Performance Management and Performance Assessment.

In the Preparation stage, the following five steps should be carried out:

a) A session secretary is appointed to guide and manage the process.

b) The session secretary forms three groups of experts (Panels 1, 2, and 3). All three panels should have between 3 and 5 members. Panel 1 consists of academic experts with extensive experience in the field of Performance Management. Panel 2 consists of experts with extensive executive and operational experience, such as individuals who have had many years of experience and responsibility in activities related to determining Performance Indicators and preparing the relevant regulations.

c) A sufficient number of documentation files are prepared in Excel spreadsheets so that everything can be recorded and documented. The required forms are provided in these files so that the secretary can easily record the information and retrieve it when necessary.

d) This step consists of two parts: (1) the subject of ideation and the provision of opinions regarding the Key Performance Indicators of oil companies is presented and explained to the panels; and (2) the theoretical aspects related to this subject are explained by the secretary to everyone, including topics such as Key Success Factors, Key Performance Indicators, Organizational Structure Benchmarking, and so forth.

This step consists of ten parts: (1) the procedures for conducting, managing, and performing the session are described to everyone; and (2) the session guidelines are reminded to the panel members, including avoiding criticism of others, refraining from ridiculing opinions, the need for members to focus on the subject and set aside other executive activities, and so forth.

In the Obtaining Opinions stage, the following three steps should be carried out:

a) The session or sessions of Panel 1 are based on the Brainstorming method. Regarding each Key Performance Indicator, the members discuss the subject with one another in order to approach group agreement. The session secretary attempts to guide the discussions only to prevent disorder and does not interfere in the discussions. In fact, the secretary acts only as a facilitator and records and documents the topics.

b) The ideas obtained from the previous step are provided to Panel 2 for screening. This panel operates using the Dialectic method as a complement to the previous method (open discussion). In the Dialectic method, the subject under consideration by the panel must be a matter of debate; that is, regardless of whether the ideas received from the group of experts are correct or incorrect, the panel members do not back down and attempt to address the subject critically and dialectically. The debate continues through successive and numerous questions, such that, ultimately, the contradictory points in the work become apparent and a screened list of ideas is extracted.

c) The result of the previous step is provided to Panel 3 in order to lead to the final list. The Brainwriting method is considered for this panel so that the final result can be obtained in a calm environment and away from discussion. In the Brainwriting method, the panel members sit around a table. Each person separately and independently writes their ideas for improvement on a sheet of paper (an anonymous card). At the end of everyone's writing, each expert gives their card to the person on their right. The experts may make any type of change to the ideas written on the card they have received, from adding something new to crossing out an idea, and so forth. At the discretion of the secretary responsible for guiding the ideation, this procedure may be carried out between 2 and 5 times until the final list is obtained.

In the Closing stage, two steps are carried out under the direction of the secretary responsible for guiding the ideation:

a) Summarizing the results obtained from the ideation sessions. This may be carried out with the assistance of the organization's senior manager. This matter depends on the level of expertise of the secretary responsible for guiding the ideation process.

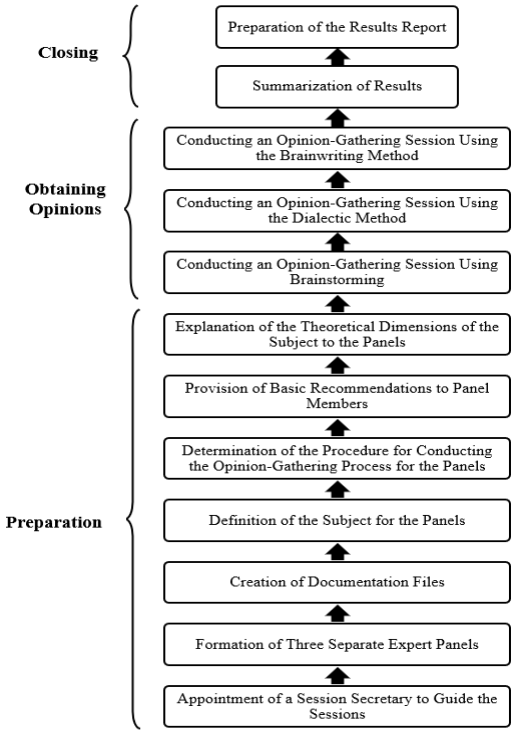


Figure 1. Research Implementation Process

b) Preparing a comprehensive report. This report is considered the comprehensive output document of the process. Its main contents include: (1) lists or tables of the final ideas; (2) lists or tables of the ideas that were gradually prepared and completed throughout the process; (3) lessons learned from implementing the process, including the advantages encountered as well as the challenges and problems of the process. This output is very important for improving the process and applying it more effectively in future projects; and (4) information about the panel members, their areas of expertise and organizations, the location of the sessions, the planned schedule of the sessions and the actual recorded times, and similar information.

3. Results and Discussion

3.1. Identified Indicators in Major Companies

The Key Performance Indicators (KPIs) identified in the major oil companies are presented in Table 1. To convey the meaning of the indicators more effectively, the table uses the indicators' English titles, and their translations have therefore been omitted. As shown, the measurement unit of each indicator is also provided at the beginning of its title.

Table 1. Key Performance Indicators in Major Oil Companies Worldwide

Shell
• # Total greenhouse gases, million tons CO2 equivalent
• # Operational spills and discharges
• # Injuries per million exposure hours
• # Countries where the company experienced major security incidents
• % Leadership staff by nationality
• $ Cost of crude oil processed or consumed
• # Operable crude oil distillation capacity (thousand barrels/day)
• # Refinery processing out turn (thousand barrels/day)
• % Profitability of new shell projects
BP
• # Reported recordable injury frequency
• # Oil spills
• % Employee satisfaction
• % Women among top leaders
• # Production (thousand barrels of oil equivalent per day)
• % Reserve replacement ratio
• % Refining availability
ExxonMobil
• % Average annual reduction in lost-time incident rate
• % Reduction in the number of spills greater than one barrel
• $ Combined corporate giving in cash, goods, and services worldwide
• % New professional hires - non-U.S.
• # Affiliates receiving dedicated human rights awareness training
• $ Research and development cost
• $ Market valuation at year end
Chevron
• $ Net income
• $ Annual cash dividends
• % Return on capital employed
• # Net production of crude oil and natural gas liquids
• # Net proved reserves of natural gas
• # GHG emissions
• % Energy efficiency improved
Sinopec
• # Domestic oil production
• # Newly added proved reserves of crude oil
• % Light products yield
• # Service stations
• # Domestic sales of refined oil products
• $ Turnover
• $ EBIT (Earnings Before Interest and Tax)
• $ Net profit attributable to equity shareholders of the company
Petrobras
• $ Net earnings
• $ Net income
• # Proven reserves of oil
• # Daily production
• % Debt ratio
• # Shipping fleet
Gazprom
• $ Proved reserves
• # Exploration well drilling
• # Drilling efficiency
• # Gas production
• $ Sales of gas
• $ Sales profit
• % Current liquidity ratio
• % Quick ratio
Rosneft
• # Wells horizon
• # Sidetracking
• # Frags at old wells
• # Incremental reserves engaged by geo-technical works
• % Gas utilization
• $ Domestic sales of oil products
Statoil
• $ Income
• $ Cash flow
• # Oil production
• # Serious incident frequency
• # Carbon dioxide emissions

3.2. Proposed Model

This section presents the proposed model for establishing Key Performance Indicators (KPIs) for oil companies in the country. From this point onward, let us refer to Key Performance Indicators simply as "indicators." Figure 1 shows the steps for designing and determining the indicators within a hierarchical planning framework. The following points should be noted in this figure:

1. More than one indicator may be considered for each strategy.
2. Each medium-term objective should have at least one strategy, indicating how that objective is to be achieved.
3. An indicator refers to what you want to measure.
4. As the name suggests, the measurement scale indicates how you want to measure the indicator.
5. For measurement purposes, quantitative and qualitative data may relate to inputs, the processes themselves, or outputs.
6. Short-term objectives indicate what result you want to achieve.
7. Results indicate what you have actually accomplished.

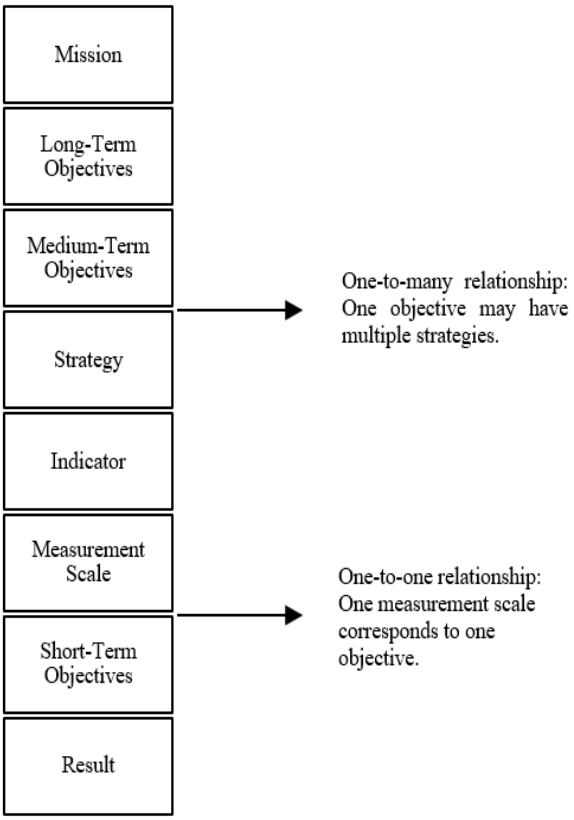


Figure 2. Hierarchical Planning of Indicators

One important distinction among Key Performance Indicators (KPIs) is between Leading Indicators and Lagging Indicators. Leading Indicators take a proactive perspective and help predict system performance. Lagging Indicators indicate whether a system is performing well; therefore, they have a reactive perspective. In many cases, Lagging Indicators focus on each revenue-oriented medium-term objective that is to be achieved, whereas Leading Indicators focus more on each strategy through which the medium-term objectives are to be achieved and that is being successfully implemented. In any case, in the hierarchical planning of indicators, the paths of Leading and Lagging Indicators are separated from each other. Figure 2 illustrates this feature.

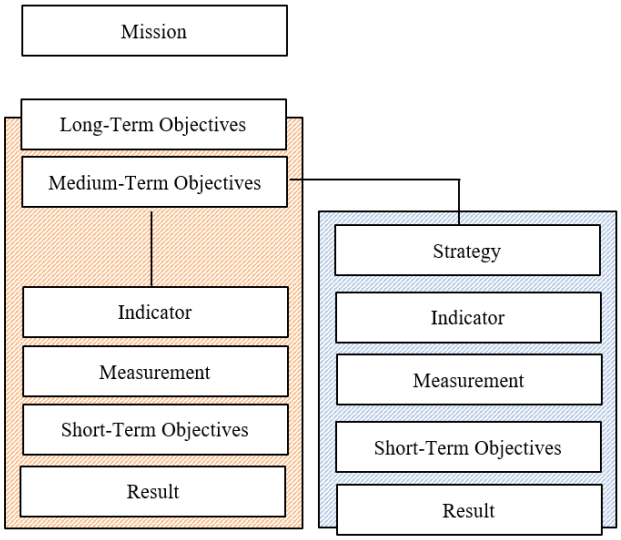


Figure 3. Hierarchical Planning of Indicators with the Leading (Right) and Lagging (Left) Distinction

The most important part is identifying the relationships among the indicators, strategies, and similar procedures within the area under consideration. This can be represented in the classification model as a relational dependency between actions and events among the indicators and strategies. The process of describing the basic procedures and deciding how to manually examine the indicators and each component of a given indicator, according to the developed model, and, where necessary, rewriting them until all the components of an indicator and their basic procedures and strategies are confirmed, and finally drawing the conclusions and formulating the superior strategies, is shown in Figure 4.

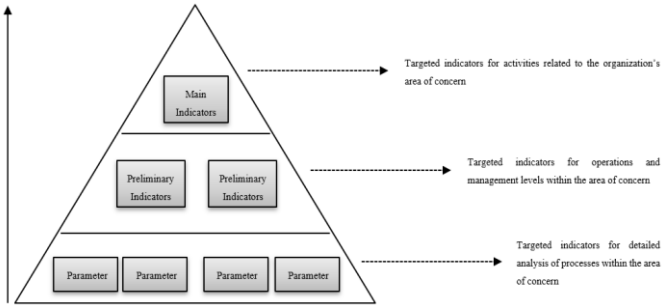


Figure 4. Targeted Indicators at Different Levels

The factors used for measurement should be selected carefully, as they can have a significant impact on individuals' performance and their efforts to improve measured values, as well as on the identification of meaningful factors for management. They can also serve as a motivational tool. Figure 5 illustrates this concept.

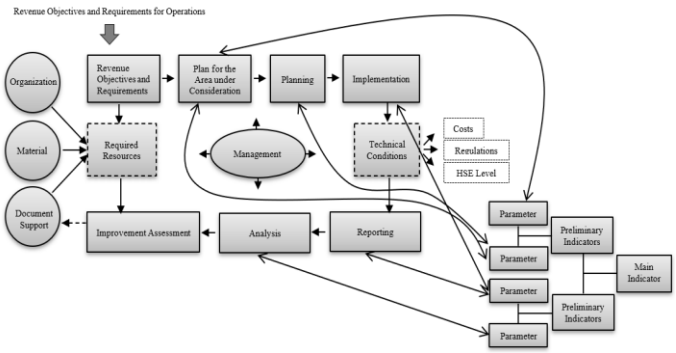


Figure 5. Model for Establishing Parameters, Preliminary Indicators, and Main Indicators in the Country's Oil Companies

Considerations for determining an indicator: An indicator should be defined in accordance with the level of the organizational hierarchy at which it is intended to be applied. The practical rationale for using an indicator is, where possible, to establish a three-level hierarchical procedure for the model: a high-level indicator for senior management, providing an overall view of performance (the main indicator); a much more detailed view at the operational management level (the preliminary indicators); and a highly detailed set of Key Performance Parameters (KPPs) associated with the indicators.

Considerations for determining a parameter: Parameters enable a comprehensive analysis of the details of the work process and the available capabilities for identifying the strengths and weaknesses of tasks within the area under consideration. A hierarchical approach allows different levels of management to focus on the specific indicators relevant to them, each of which can be determined in different ways. Further specification of the level of each indicator requires examining its background and clarifying the performance of the relevant area at different levels of the industry. Therefore, starting from the lower level, the collected parameters are used to calculate the preliminary indicators. Once the preliminary indicators have been calculated and applied, the main indicators are calculated. In this approach, high-level indicators can be better understood and managed through their constituent parameters [18, 19].

3.3. Interaction among parameters, preliminary indicators, and main indicators

Considerations for determining main indicators: The indicators used at the highest level of management should be selected appropriately so that they receive sufficient attention and are correctly interpreted. Where possible, the most effective approach is to express them in terms of cost, as this can be readily communicated and understood at the highest level of management.

Considerations for determining parameters: Each initial parameter describes several parts of the process under consideration. Indicators are decomposed into a number of more closely interrelated parameters within the actual process of the task under consideration. Improving the values of parameters and indicators through process improvement can only be achieved once the relationships between these processes and the parameters are clearly understood [20, 21].

Considerations for Defining Objectives and Requirements: Objectives and requirements should be carefully defined, as focusing on established objectives and requirements may have a significant impact on all the parameters under consideration, and these objectives and requirements should be addressed separately. The objectives and requirements for the task under consideration should be developed jointly with the operations department, based on a mutual understanding of each other's concerns. Reaching agreement on the objectives for the task under consideration will improve communication and mutual understanding. However, evaluating internal activities within the units under consideration is also an important task [22-25]. This can be accomplished by assessing the achievement of objectives and using various auditing tools. These results may, in turn, lead to the identification of new objectives and requirements. How objectives and requirements are effectively influenced by internal assessment from both the operations side and other parts of the organization is illustrated in Figure 6.

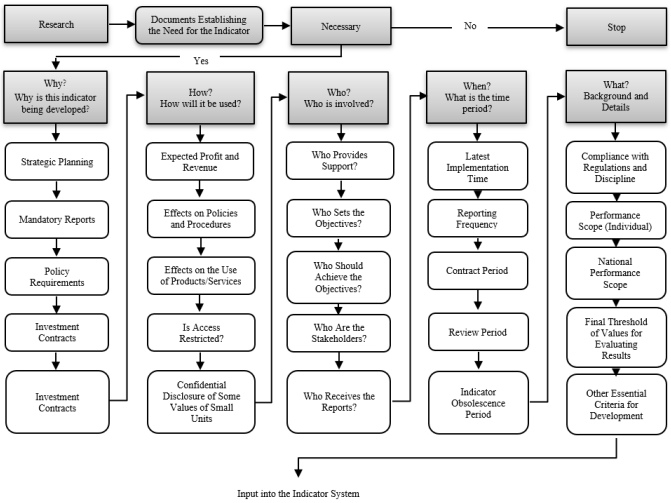


Figure 6. Model for Extracting the Information Required from Oil Companies for Entry into the Indicator System

4. Conclusions

The current research, aiming to design a comprehensive model for formulating Key Performance Indicators (KPIs) in Iranian oil companies, benchmarked the experiences of leading international companies such as Shell, BP, and Chevron, and introduced a structured process. By employing a three-stage hybrid methodology—consisting of preparation, interactive group surveys, and final synthesis—this study created a suitable platform for converging the opinions of academic experts and oil industry executives. The results demonstrated that the combined use of brainstorming, the dialectical screening approach, and the brainwriting technique could lead to continuous refinement and the reduction of bias in indicator selection.

The model proposed by this research is designed based on a hierarchical planning structure in which a clear distinction is established between leading and lagging indicators. By establishing a structured connection between medium-term

objectives, strategies, and indicators, this model offers a three-level framework consisting of base parameters, preliminary indicators, and main managerial indicators. Through this approach, granular process data at operational levels are refined and converted into macro-financial and strategic indicators that are understandable to senior management, thereby enabling dynamic monitoring.

The research findings indicate that successful implementation of this model requires a mutual understanding of operations department objectives and the broader needs of internal organizational assessments. By integrating process requirements and periodic audits, the final model creates a feedback loop that significantly assists in the continuous redefinition of organizational objectives. Ultimately, the deployment of this localized model can prevent resource waste and perceptibly improve the alignment between the operational plans of Iranian oil companies and the overarching goals of national development.

Author Contributions

All authors contributed equally to the conception, preparation, and writing of this manuscript.

Conflict of Interest

The authors, while observing publication ethics in the referencing, declare the absence of interest of conflict.

Acknowledgement

We sincerely thank the reviewers for their valuable and constructive comments, which helped us improve the quality of this manuscript.

AI Used Statment

The authors retain full responsibility for the accuracy, originality, integrity, legality, and ethical compliance of all text, data, tables, figures, analyses, references, and conclusions, and have verified all AI-assisted outputs. Any fabrication, falsification, manipulation, plagiarism, copyright infringement, or other misuse of AI remains solely the responsibility of the authors and does not transfer or diminish their accountability for the published work.

References

[1] T. Kim, M. Holzer, *Review of Public Personnel Administration*, 2016, **36(1)**, 31-56. https://doi.org/10.1177/0734371X14549673
[2] M. Khanna, S. Sharma, B. Kumar, R. Rajput, *BioMed Research International*, 2014, **2014(1)**, 5462741-7. https://doi.org/10.1155/2014/546274
[3] H. T. Johnson, R. S. Kaplan, *Strategic Finance*, 1987, **68(7)**, 36–44. https://doi.org/10.1109/EMR.1987.4306297
[4] H. Ahn, Long Range Planning, 2001, **34(4)**, 441-461. https://doi.org/10.1016/S0024-6301(01)00057-7
[5] K. Czerwińska, A. Pacana, Management and Quality–Zarządzanie i Jakość, 2020.
[6] M. A. Hatefi & M. Vahabi, *Strategic Management Researches*, 2018, **24(69)**, 35-55.
[7] M. Sheikhzadeh, M. R. Arasti, R. Kotbzadeh, *Iranian Journal of Management Sciences*, 2011, **6(22)**, 99-125. https://doi.org/10.5897/AJBM11.1618
[8] A. Thompson, A. Strickland, J. Gamble, Crafting and Executing Strategy: Text and Readings, New York: McGraw-Hill, 2005.
[9] P. S. Aithal, S. Aithal, *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 2023, **8(3)**, 294-325. https://doi.org/10.47992/ijmts.2581.6012.0304
[10] R. L. Englund, R. J. Graham, *Journal of Product Innovation Management*, 1999, **16(1)**, 52-64. https://doi.org/10.1111/1540-5885.1610052
[11] A. J. Shenhar, A. Tishler, D. Dvir, S. Lipovetsky, T. Lechler, *R&D Management*, 2002, **32(2)**, 111-126. https://doi.org/10.1111/1467-9310.00244
[12] D. J. Bryde, L. Robinson, International Journal of Project Management, 2005, **23(8)**, 622-629. https://doi.org/10.1016/j.ijproman.2005.05.003
[13] J. Fortune, D. White, *International Journal of Project Management*, 2006, **24(1)**, 53-65. https://doi.org/10.1016/j.ijproman.2005.07.004
[14] A. G. Sanjuan, T. Froese, *Procedia - Social and Behavioral Sciences*, 2013, **74**, 91-100. https://doi.org/10.1016/j.sbspro.2013.03.035
[15] N. Hüser, C. W. Michalski, M. Erkan, T. Schuster, R. Rosenberg, J. Kleeff, H. Friess, *Annals of Surgery*, 2008, **248(1)**, 52-60. https://doi.org/10.1097/SLA.0b013e318176bf65
[16] F. A. Mir, A. H. Pinnington, International Journal of Project Management, 2014, **32(2)**, 202-217. https://doi.org/10.1016/j.ijproman.2013.05.012
[17] S. M. H. Fatemi, *4th International Project Management Conference*, Tehran, 2008.
[18] T. Svantesson, A. Ranheim, *2001 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Salt Lake City, UT, 2001.
[19] S. A. Razavi, S. Pirani, Petroleum Business Review, 2019, **3(4)**, 28-36. https://doi.org/10.22050/pbr.2019.119151
[20] H. Mofid, M. R. Khosravi-Nikou, S. A. Razavi, M. Mohammadian, *Applied Thermal Engineering*, 2024, **245**, 122810-17. https://doi.org/10.1016/j.applthermaleng.2024.122810
[21] S. A. Razavi, H. Motavali, *Journal of Industrial Engineering and Management Studies*, 2023, **10(2)**, 106-115. https://doi.org/10.22116/jiems.2023.399150.1516
[22] S. A. Razavi, A. K. Manshad, L. Kashani, *Energy Strategy Reviews*, 2026, **65**, 102226-30. https://doi.org/10.1016/j.esr.2026.102226
[23] S. A. Razavi, F. Maralkhani Azar, *Iranian Energy Economics*, 2026, e20731-16 https://doi.org/10.22054/jiee.2026.89030.2177
[24] S. A. Razavi, L. Kashani, F. Maralkhani Azar, *Petroleum Business Review*, 2026, **10(2)**, 93-137. https://doi.org/10.22050/pbr.2026.579272.1432
[25] S. A. Razavi, E. Ordoei, *Journal of Environmental Economics and Chemical Processes*, 2025, **2(4)**, 129-133. https://doi.org/10.22034/jeecp.2025.735022