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A systems approach to policy analysis and development planning: Construction sector in the Turkish 5-year development plans

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Abstract

In this study, we propose a new model for systems analysis ‘of’ policy and systems analysis ‘for’ policy with the example of construction sector in the Turkish 5-year development plans.

Our proposed model—integrated development management model (IDMM)—is conceptually based on the principles of systems thinking and integrated management approach.

We present and discuss the results of our work in which we extracted all construction-related policies and strategies from eight 5-year development plans and analyzed them using the IDMM. In the light of the analyses, we give several answers to the question: “Why did the development plans fail to meet their targets in Turkey?” We propose that any development plan has to have *claritas–unitas–integritas–consonantia* between the management levels (normative, strategic, and operational) and components (goals, structures, and behavior) of IDMM.

The paper is the first work that brings the concepts of development planning and foresight together. In a complementary stance, the time of integrating foresight and development planning has come.

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Keywords: Development planning; Systems thinking; Systemic analysis; Foresight; Turkey; Integrated development management model; Policy design; Country strategy; Construction sector

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1. Introduction

The rapid and unprecedented change in social, technological, economic, ecologic, and political issues creates an increasingly fluid, dynamic, and borderless environment that will be very different in the coming decades from the one we experience today.

Since the future is not the extension of the past—hence is uncertain—it will be different from anything we have seen before [1]. In the late 1990s and early 2000s, many developed and developing countries have adopted a future-oriented behavior and conducted institutionalized national foresight studies to shed light to their “undetermined future” [2]. Gavigan and Scapolo [3] define foresight in the broad sense of “anticipatory thinking as neither new nor particularly esoteric, but is a natural and essential feature of strategy and policy planning activities undertaken by private or public bodies.” One of the most advanced goals of the foresight studies is to develop robust policies and strategies that will guide and coordinate both public and private entrepreneurs while balancing the limited resources in the country.

We suggest that the policy and strategy makers/advisors should look back and understand what happened in the past and should explore how they can infer lessons from the past when they make/advice policy and strategy making. Flanagan [4] noticed that very few studies have gone back and asked the question: “Were our past forecasts correct?” Before the national foresight stream arose in the 1980s and 1990s, in the postwar era, the common practice among developed and developing countries was producing development plans. Development plans have been used to describe long-, medium-, and short-term policies and strategies to gain greater development.

Turkey has formulated eight development plans starting in 1963. In this study, we will analyze these eight development plans by assessing policies and strategies developed for the construction industry as a case. The reasons behind focusing on the construction industry are the industry’s vital socio-economic role in the country and its vulnerability to the economic, political, and social decisions taken by the government.

Stewart and Ayres [5] mention the use of systems analysis in policy making in two ways: systems analysis ‘of’ policy (understanding what is happening when policy is made) and systems analysis ‘for’ policy (generating concepts, ideas, and modes of action when policy makers try to make recommendations about policy problems). In this study, we apply both uses of systems analysis to examine construction policies and strategies in the Turkish development plans by proposing a new model, the integrated development management model (IDMM). Our proposed model is based on the principles of systems thinking [6,7] and integrated management approach [8,9]. The paper is the first work that combines development planning with foresight.

In Section 2, we will briefly review policy analysis and evaluation literature and development plans with their functions at the national level. Section 3 will review the vital role of the construction industry in Turkey’s economic and social life. In Section 4 of this study, we will set up a model based on systems thinking and integrated management concepts. In our study, we contend that the proposed model offers a different, and potentially useful, way of developing policies and their transformations into actions. In Section 5, we will show an application of this model on construction policies and strategies in the Turkish 5-year development plans. In Section 6, we give several answers to the question of: “Why did the development plans fail to meet their targets in Turkey?” Section 7 includes our conclusions.

2. Literature review

2.1. Role of policy analysis

Prior to discussing policy analysis, we will discuss the nature of the policy science. As an interplay between social, economic, and political sciences, the policy science is multidisciplinary in nature. Therefore, policy need not be understood merely as state action, but also as a culturally approved way of accomplishing social purposes. At this point, Portis [10] discusses the incorporation of social science and policy science.

Portis [10], in making several referrals to Weber's work, argues that social science is "policy science," but cannot be any sort of social engineering because the type of theoretical knowledge that legitimates the role of "scientific expert" is not attainable in social science. According to Portis [10], social scientists can contribute no more than a methodology or, at best, skill in applying it; hence, their role is that of technical adviser rather than the scientific expert. If an action is to be explained, it is necessary to "understand" the subjective meaning of the individuals and groups in question. This is the basis of causation in social affairs. Social science cannot hope to attain the degree of unity, prediction, and demonstrability displayed in chemistry or physics. The contingent relationships between value or desire and behavior dictate that explanations, in terms of motive, cannot be as conclusively confirmed as those by constant conjunction of events. Since uniformities in social science are the result of such contingencies as perceived advantages of cooperative behavior or the influence of shared cultural orientations, the social scientists will rarely be able to predict confidently the effects of social change. It is never possible to calculate the effects of a hypothetical policy initiative. All these arguments clearly point to the challenges of public decision making in development planning, management, and policy evaluation either by government agencies or other organizations.

The difficulties pointed by Portis [10] actually had already been clarified by Anderson [11] by defining different dimensions of "public responsibility":

1. Entrepreneurial judgment
2. Judgment of trusteeship
3. Critical judgment
4. Pragmatic judgment.

Anderson [11] suggests that these four approaches to decision making are associated through the following ways:

- a. There is an organic relationship among these modes of analysis.
- b. The meaning and significance of each as a style of inquiry and argument are dependent on the rest.
- c. These styles of thinking and decision making apply in the arts of governance in every form of organization.

When policy analysis is conducted, the abovementioned complex characteristics of policy science should be considered. Graham [12] discusses the implications of political science to policy analysis and enumerates four stages of policy analysis:

1. Research into the cause of a problem
2. Tracing the probable consequences of various responses to the problem

3. Making the decision as to which option will be legally adopted by the society
4. Actual application.

This list should include a fifth stage, namely, assessing the results of policy implementation and learning. Graham [12] cites Lasswell's definition that policy orientation is, in part, directed toward the policy process and, in part, toward the intelligence needs of policy. Lasswell emphasizes both process and contextual intelligence and focuses on the when, how, and what of policy decisions. Graham [12] notes that the why of politics is central, albeit only fuzzily outlined, and that Lasswell seems to build upon the assumption that knowledge evolves "to the fuller realization of human dignity," which he promptly calls "the policy sciences of democracy," hence the why of politics. Nevertheless, there is an important question often neglected. This question represents human beings. Any change in initiative starts in the hands of people who may act in many different ways. The question is 'who'.

In addition to Graham's four stage policy analysis, Hambrick [13] summarizes Bardach's proposed structure for policy analysis and deliberation. Bardach specifies various questions to be answered for a comprehensive analysis in each stage:

1. Program verification (technical–analytic discourse)
2. Situational validation (contextual discourse)
3. Societal vindication (systems discourse)
4. Social choice (ideological discourse).

The above discussion of important dimensions of policy analysis leads us to analyze the development planning from a systemic perspective due to its complex and dynamic nature.

2.2. *Development planning*

According to Gilbert [14], planning is primarily a postwar phenomenon like foreign aid and the concept of underdevelopment. In the 1950s, the interest for development plans widened to a global level. The damage of Second World War and the independence of colony nations put development plans into agenda for both developed and developing countries to recover and meet increasing public services.

Planning does not have a definition on which everyone agrees. Altintas [15] relates this with the political system because the meaning of planning differs according to the political system in which it is implemented. However, there are several definitions moving from the basic principles of planning. Mohamed and Appalanaidu [16] state that many economists have generally accepted development planning as the most direct way to achieve economic growth of a nation. They list some of the goals of development plans as a rapid increase in per capita income, a reduction of poverty and income inequalities, and a relatively high stability of price of primary commodities.

The UN Specialist Committee [17] defined planning as the frame in which the economic and social policies are established with numerical objectives and tasks. The Turkish State Planning Organization (SPO) of Turkey sees planning as a tool that shows the field and degree of intervention to the (economic and social) life to reach the (desired) results. According to Elkan [18], development plans more specifically take the form of planned increases in gross national product (GNP) for a period of years ahead, and a model that purports to predict the amount of capital formation required to achieve given target rates of growth of GNP.

Altintas [15] defines three basic functions of development plans: efficiency, coordination, and announcement. The development plans provide efficient distribution of limited resources. The plans also coordinate the links between industries and sectors, prevent idle capacity, and also present a balanced development. Additionally, development plans set economic, social, and cultural objectives, and announce these objectives to the society as a whole. By informing society particularly about future economic and social objectives, the plans guide the public and private entrepreneurs in their investment decisions and directions. The decisions taken under the guidance of development plans may be more appropriate.

Saeed [19] classifies the development issues focused on in the earlier decades as follows:

- a. The 1960s was a period of indiscriminate expansion in capital that exacerbated an already polarized income distribution pattern, fuelling conflict between economic classes.
- b. The 1970s called for public sector development, which not only created largely inefficient organizations, but also stymied entrepreneurship in the private sector.
- c. The 1980s advocated export-based development, with disregard to the composition of the trade and its terms, which drained many developing economies and devastated their natural endowments.
- d. The 1990s witnessed the advocacy of free enterprise and free world trade with disregard to the polarized control of productive resources existing within, as well as between, nations. This is accompanied by a drive to privatized public finance, with the question of sustaining welfare often swept under the rug. The 1990s have also seen an emphasis on environmental issues, but these remain somewhat disconnected from the other policies.

Verhage [20] describes pre-1980 planning as springing from a “hierarchic policy field” that employs “regulation” to achieve a “blueprint.” In contrast, post-1980 planning originates in an “interactive policy network” that employs “collaboration” to achieve a contract as Margerum [21] mentioned. Margerum calls for collaborative planning for effective implementation. DeLeon [22] calls for “participatory policy analysis” in order to reduce the isolation of policy analysts who often produce assessments and recommendations that seems out of touch with the needs and wants of the public. Alterman [23] reports negotiation as a major component of planning for its success.

Starting from the early 1990s, there has been a change from a ‘blueprint form’ of a plan to a ‘policy,’ ‘guideline,’ ‘framework,’ or ‘vision.’ It has shifted from regulation to contracts. As Alterman [23] states, planning at the national level is as less a product than a process. A more comprehensive and visionary future-oriented policy and strategy making, namely Foresight, has started to take root in Europe (e.g., German Foresight Study 1992, UK First Cycle of Foresight 1995, Second Cycle 1999, and Third Cycle 2002). It must be noted that Japan had started foresight-based policy and strategy making in the early 1970s. As it is seen, developed countries prefer national foresight studies over planning. Developing countries have started foresight studies mostly in the early 21st century.

Saeed [24] has examined the developments in developing countries since the 1960s. He acknowledges that any program or plan that initiates a change process with the aim of social development and wealth creation should fulfill the following four basic conditions:

1. A plan should provide the maximum increase in the goods and services that are offered to society as a whole.
2. The positive effects of growth in the country’s economy should be enjoyed by not only a small proportion of people, but in general by the whole society.

3. The technological choices incorporated in the development policy should not indiscriminately consume all the natural endowments of the society, but should help to maintain a reasonable level of slack in the resource system to serve as insurance against environmental shocks.
4. The development policy should cause as little increase as possible in the need for exercising control, so that the additional throughput created does not have to be consumed in the expansion of the organizational instruments of control.

However, the achievement of the plan is associated with not only its content but also the context and the process in which it is produced and implemented. The accomplishment of the plan is unlikely, if the content of the project is not embodied as an outcome of widespread participation of shareholders in a well-managed process. In this sense, Bryson [25] emphasizes the vitality of coordination and steering task of planning body (SPO in the present study). He states that unless these organizations increase their own capacity to think and act strategically, they are unlikely to be effective supporters of their communities' well being.

Gilbert [14] stresses the effects of implementation phase on the achievement of development plans. He relates the underachievement of development plans with a lack of skilled practitioners and institutional experience, major deficiencies in data, a lack of political support, and often a clear conception of what can or ought to be achieved through planning. In addition, many activities still remain without appropriate authorities to plan them.

Planning has a complex nature and a multidimensional character as discussed in the previous paragraphs. Bryson et al. [26] acknowledge four challenges to planning to reflect its features:

1. The human problem is the management of attention and commitment.
2. The process problem is the management of strategic ideas into good currency.
3. The structural problem is the management of part–whole relations.
4. The institutional problem is the exercise of transformative leadership.

The above review leads us to the following definition of “development planning”: “the contribution and intervention of the government to the social and economic life of country by utilizing the limited resources in order to create wealth and improve quality of life.”

This definition requires a systems perspective for successful development planning. Stewart and Ayres [5] see planning failures as the result of not anticipating the implications of change in one part of an interconnected system. They also relate those failures with the tools and techniques of policy makers that are at fault since they do not consider causes and consequences sufficiently deeply.

3. Turkish development plans: the case of construction industry

3.1. Turkish development plans

The idea of producing development plans in Turkey occurred mainly because of economic concerns. In order to change the underdeveloped scene of the pre-1960 period and to provide higher living standards to the country's increasing population, the SPO was established in 1960 to produce development plans in Turkey. Following the establishment of SPO, the concept of developing and

implementing 5-year development plans started in Turkey with 1961 constitution. The first 5-year development plan was put into practice in 1963 and, since then, the country has implemented eight development plans [27–35].

Turkish 5-year development plans indicate long-, medium-, and short-term characteristics in terms of their duration. The development plans generally take 15 years into consideration. Thus, it can be said that they have a prospective view by considering long-term perspective. However, development plans are primarily strategy documents and are produced for every 5 years. In addition to development plans, annual programs [36–38] are produced, listing the actions that have to be taken in order to balance the long- and medium-term objectives defined in development plans with resources.

In terms of their scope, the Turkish development plans might be characterized as national and macrolevel plans. Although plans were initially produced with economic concerns, they include not only policies and strategies for economic development, but also for social and cultural development. The development plans in Turkey might also be considered as guiding plans. On the other hand, Turkish development plans have also encouraging and coercing characteristics. For example, Altintas [15] states that while the plans indicate a guiding characteristic for agriculture, it has an encouraging characteristic for entrepreneurs by providing some benefits and help, and has a coercing characteristic for public bodies.

We will analyze the eight development plans by assessing policies and strategies developed for the construction industry as a case. The reasons behind particular focus on the construction industry are the industry's vital socio-economic role in the country and its vulnerability to the economic, political, and social decisions taken by the government.

3.2. General information on construction sector

As in most of the developed and developing countries, the construction industry plays an important economic and social role in Turkey. The industry's outstanding role can be evaluated using the following dimensions:

1. The construction industry's share in Turkey's total GNP is 5.8% [39].
2. The industry creates markets for products of other domestic sectors (backward linkages) and produces goods necessary for the growth of key consumer industries (forward linkages) [40]. According to the Eighth Five-Year Development Plan Construction, Contractors, Engineers, and Consultants Specialization Report data, the construction industry's strong input–output links with industries such as energy, cement, brick, stone, iron, and steel in manufacturing, and banking, insurance, and technical consulting in services make up another 28% of the Turkish GNP [39].
3. The input–output data provided by State Institute of Statistics indicate that the industry relies mostly on domestic inputs and production technologies consistent with national factor endowments. According to the 1996 input–output table, 66% of the whole construction industry input comes from the manufacturing and energy industries, and 30% comes from services [41]. Bon et al. [42] suggest that the economic pull of the construction industry is one of the highest among all sectors, and the government uses the construction industry as an instrument to increase the overall economic output.
4. Construction investments cover the 60% of total fixed investments in Turkey. The share of public construction investments in this proportion is 30% [39].

5. The construction industry provides employment to about 1.4 million people, representing 6% of the total employment in Turkey [35]. The number of people employed in the industry increases when unregistered employees considered.
6. Turkish contractors have a significant share in the total construction work in overseas markets. The share of Turkish contractors in the international market reached 4% in 1998 with a total amount of US\$39 billion.
7. The construction industry also meets basic human needs by creating the necessary built environment and physical infrastructure in domestic and foreign markets.

4. Integrated development management model (IDMM)

In this section, we will outline the components of our proposed IDMM. Conceptually, the model is based on the principles of systems thinking and integrated management approach.

Saritas and Öner [6] and Saritas [7] have already discussed different dimensions of systemic thinking in foresight studies in the example of British, Irish, and Turkish national foresight exercises. Alsan and Öner [8,9] have applied integrated management approach to foresight studies. Now, the present study brings these efforts together to develop a new approach to development planning and implementation. This is also the first attempt to consider foresight in development planning context.

4.1. General concept of IDMM

The central concept of a ‘system’ embodies “a set of elements connected together which form a whole, this showing properties which are properties of the whole, rather than properties of its component parts” [43]. Stemming from this definition, ‘systems thinking’ is about viewing ‘events’ as a system and/or part of larger systems [44]. Systems thinking advocates the treatment of systems as wholes, composed of related elements. According to Hwang [45], systems thinking enables to see the overlapping and ever-expanding relationships among systems in multiple dimensions to both problem farming and problem solving in (organizational) practice. The idea behind considering the wholes and related elements as a system is based on the perception of ‘causality’.

Stewart and Ayres [5] support systems approach in policy making by emphasizing the following points:

- a. The systems approach offers policy makers a fresh set of perspectives on the fundamentals of policy analysis.
- b. Policy design is as much a matter of choosing structures and relationships as of choosing instruments.
- c. Understanding causation means acknowledging two-way influence and the role of feedback.

The appropriateness of systemic approach for complex situations has been emphasized by Stewart and Ayres [5], who state that the systems theory enables analysts to get handles on complexity by reconceptualizing the task of exercising influence. Rather than selecting instruments to fit a particular kind of policy problem (the conventional approach to policy design), systems analysis suggests that the nature of the problem cannot be understood separately from its solution.

These form the first ingredients of our novel IDMM. The second ingredient of our model comes from the integrated management model (IMM) of Bleicher [46], which indicates several notions of systemic management [47]:

1. The framework is integrative and brings different components and levels of management together so as to provide a more complete picture.
2. Management is conceived as a multidimensional process. The IMM brings the three components of management together: goals, structures, and behavior. Churchman [48] pointed out the goal-oriented behavior of elements by stating that a system is a set of parts coordinated to accomplish a set of goals.
3. In logical terms, management is a multilevel process with normative, strategic, and operational management levels.
4. Management is a recursive process. In principle, the whole scheme applies to any level of recursion of an organization.
5. The components and levels that constitute the framework are dynamically interrelated.

The model assumes three management levels: normative, strategic, and operational. Each management level consists of three management components: goal, structure, and behavior (Fig. 1).

The three components of management levels—goals, structures, and behaviors—reflect the multidimensional nature of the IMM. This consideration is based on the assumption that the management activities influence the organizational activities in such a way that the goals are determined, the structures are manipulated, and a basic and determined behavioral pattern is created.

Goals might be quantitative or qualitative. The forming, steering, and development activities are related to goals. The structure covers both the order of elements in a system and their relationships, and the instruments for the generation of such arrangements. Finally, the behavior comprises internal, social, and cultural aspects, and the integration of the organization with its environment. Grundy and Wensley [49] define behavior to encompass cognitive, emotional, and territorial interplay.

In the IMM, the organization manages itself in three logical management levels: normative, strategic, and operational. While the normative management level fulfills the foundational function, the strategic management level executes the orientation function. Eventually, the operational management level carries the function of realization.

The IMM also reveals incorporation and communication between different logical levels of management. The upper levels exert a precontrol function for the lower levels. Schwaninger [47] acknowledges precontrol as an anticipative creation of prerequisites at a higher logical level for effective

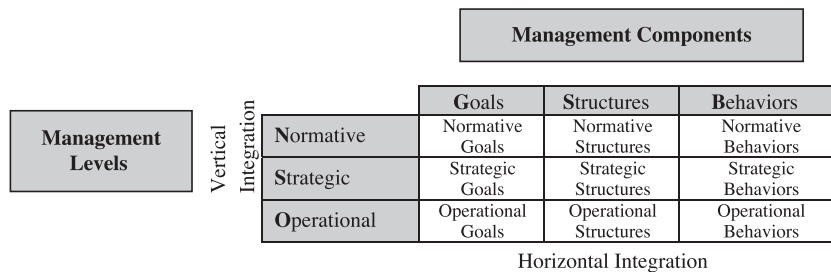


Fig. 1. Integrated management matrix.

control at lower logical levels of management. Additionally, the lower levels influence the upper levels in a feedback mechanism that might both widen or narrow the borders of the organization. In the literature review stage of our study, we could not locate any source that mentioned all fields of the IMM, except Bleicher, who developed the IMM and explained it in his book, and Schwaninger, who is from St. Gallen University as well. However, we note that their work does not include any sectoral application.

4.2. IDMM

From the IDMM perspective, a development plan is viable if it disposes of a set of management functions with a specific set of interrelationships, identified and formalized. Any deficiencies in this system, such as missing functions, insufficient capacity of the functions, or faulty communications or interactions between them, impair or jeopardize the viability of the development plan. The viability, cohesion, and self-organization of a development plan depend upon these functions being recursively present at all levels of the country. Below, we will discuss the nine elements of the IDMM by making use of management and organization literature in a development context. The functions of the IDMM are dynamically interrelated. Oner and Kalafat [50] emphasized the vitality of understanding the dynamic interrelation between the elements of IDMM in order not to cause any failure in organizational activities because the success of the planning that is produced in the light of IDMM is not only related with the occurrence of all the elements, but also their integration with each other. Oner and Kalafat [50] suggest the four criteria of Joyce [51] mentioned in his book ‘Portrait of the Artist as a Young Man’ to criticize an artwork to measure the success of plans and programs. These criteria are: *claritas*, *unitas*, *integritas*, and *consonantia*:

1. *Claritas*: the clarity and limpidness of the plan
2. *Unitas*: the unity of the plan
3. *Integritas*: the integration and totality of the plan
4. *Consonantia*: the coherence, harmony, and acceptability of the plan as a whole.

4.2.1. Normative goals

This is the field where obvious long-term objectives are established for the survival and development of the country. In normative goals, the mission and vision of the country are defined and shared. Mission and vision statements should describe the overall direction and orientation for the strategic and operative management levels. According to Bryson [25], normative goals develop a clear and succinct description of what the organization or community should look like as it successfully implements its strategies and achieves its full potential. Drucker [52] sees normative goals as a “fundamental strategy of business,” and states that they require the action commitments through which the mission of a business is to be carried out, and the standards against which performance is to be measured. Normative goals have a multifaceted character in which social, political, cultural, and environmental aspects have to be considered. Kotter and Heskett [53] point out the effects of the legitimate claims of different stakeholders, which must be met adequately for an organization (country) to be operable in the long term.

4.2.2. Strategic goals

This field is related with the creation, use, and development of success potentials. The strategic management process is about moving the country from its present position to a future strategic position,

in order to exploit new products and markets. Van Der Merwe [54] states that the modern business strategy deals with the matching of the activities of an organization to the environment in which it operates. In this case, the strategy is the extension of mission to form a bridge between an organization and its environment, as Bryson [25] emphasized. Then he connects the normative goals with the operational goals through strategic goals by stating that the strategic issues involve how best to translate goals and objectives into actions. According to Schwaninger [47], the criterion at this field is the effectiveness in both the cooperative and the competitive sense. Effectiveness—doing the right things—is a measure of the longer-term adaptation to those needs, and it can be measured by indicators that reflect such aspects as market position, critical success factors, core competencies, and innovation.

4.2.3. *Operational goals*

The goal and success criteria established on higher logical levels are adjusted to the functioning of the system in operational goals. Blanchard [55] believes that the operational requirements reflect the needs of the consumer (members of the society) relative to system utilization and the accomplishment of a mission. According to Drucker [52], the goals must be operational. They must be capable of being converted into specific targets and specific assignments. They also must be capable of becoming the basis, as well as the motivation, for work and achievement. The degree of this adjustment can be measured consecutively in terms of the benefits provided through ongoing activities. Schwaninger [47] specifies the criterion at the operational level as efficiency—doing things right—in terms such as productivity, quality, and profitability.

4.2.4. *Normative structures*

Normative structures are the values and principles that provide the overall direction for the organization. Beer [56] characterizes organizational structures in the normative level as the thinking part of the whole organization (country), with its concentration on where we are going rather than where we have come from, with its foresight that is to say. Schwaninger [47] clarifies the normative aspects of Beer's Viable System Model, which is about the structures of the organizations. Balancing present and future as well as internal and external perspectives; moderation of interaction with strategic and operational levels; ascertaining the identity of the organization (country) and its role in its environment; and embodiment of supreme values, rules, and norms reflect the peculiarities of normative structures. According to Blanchard [55], organization that refers to government structure in this study is the combining of resources in such a manner as to fulfill a need.

4.2.5. *Strategic structures*

As a support of long-term adaptation, strategic structures that decide the structures aim to build the government to support the strategic goals. According to Van Der Merwe [54], strategic structure is about planning the trip. This is the field where the organization deals with the future—especially the long term—and, with the overall outside environment, defines the strategies and models the organization (country) in its environment. Beer [56] acknowledges the manifestation envisaged here in creating a model, which has to be used as a tool for inventing the future, rather than fearfully predicting what it may hold.

4.2.6. *Operational structures*

It would be useful to remember the definition of organization structure by Mintzberg [57]. He defines organizational structure as the sum total of the ways in which the organization divides its labor into

distinct tasks and then achieves coordination amongst them. Schwaninger [47] cites from Beer to complete the structure side of his integrative conceptual framework and orders the functions of operational structures. Operational structures provide for management of the present and short term through the regulatory capacity of basic units, autonomous adaptation to their environment, and optimization of ongoing business, attenuation, and amplification to damp oscillations and coordinate activities via information and coordination, establishing an overall optimum among basic units, and providing for synergies, resource allocation, investigation, and validation of information flowing between systems.

4.2.7. Normative behaviors

The desired innovative social, economic, political, technological, and environmental behavioral systems that the country is expected to reach are set in this field. Normative behaviors then include the transformations in national culture to achieve these behavioral goals. State culture from the normative behavior includes the cognitive abilities of a state organization and the attitudes of its members towards duties, tasks, products, fellow members, management, and organization, which shape the perceptions and preferences against events and developments. National (state) culture acts as a catalyst between the past-oriented values and future-oriented behavior in the social evolution. Leifer and Delbecq [58] are likeminded that the links between people from both outside (citizens) and inside (bureaucrats) the state are established in the normative behaviors field.

4.2.8. Strategic behaviors

Strategic behavior is relevant to the development of the innovative and problem-solving skills of the members of the state in the light of the values and norms supplied by the state culture. Grundy and Wensley [49] define strategic behavior as the cognitive, emotional, and territorial interplay of managers within (or between) groups when the agenda relates to strategic issues. Leifer and Delbecq [58] state that the strategic behaviors translate policies and decisions into operations. Grundy [59] highlights that a focus on strategic behavior needs championing in the organization (state) as it represents a major shift in how things are done. This would require not merely input from internal human resources facilitators or from outside but also leadership executive or equivalent. For it is up to him/her ultimately if there is to be a new openness and incisiveness in the interaction within senior teams.

4.2.9. Operational behaviors

This field concerns with the development of attitudes in operational level in order to increase the performance of work processes. Creation of appropriate behaviors, motivation, coherency, and synergy among employees upon the state are all based on the operational behaviors. According to Hwang [45], the issue in this field is focus on day-to-day operational activities in line with corporate (country/national) strategy. He adds that organization members (bureaucrats) need to learn how to engage in systemic thinking themselves at this level. When state units are trying to be more flexible and adaptable to change with reduced hierarchy, increased local decision making, and individual autonomy, it requires empowered individuals to consider the interconnections and consequences of their local decisions. Ferrari and Fares [60] point out the necessity of developing and maintaining the strengthening principles of the knowledge and also translating them into practical mechanisms in the operational behaviors field.

5. Analysis of Turkish 5-year development plans with IDMM

This section covers the application of the IDMM on the construction policies and strategies in Turkish 5-year development plans. Our aim here is to introduce a new perspective to evaluate the development plans and thus to assess their achievement according to IDMM. The policies and strategies developed by the SPO should fit into the content of IDMM (see Section 4, components and levels of IDMM) in order to contribute to the socio-economic life of the country.

In this study, our aim is to indicate whether the construction policies and strategies meet the given IDMM criteria. At this point, we will not reveal whole construction-related policies and strategies that we derived from eight development plans. Rather, we will give the results of our work where we classified all the policies and strategies by comparing their content with the elements of IDMM. As an example of our analyses, we examined the eighth development plan in detail in this paper.

In our study, we also conceived of the possible differences among the different experts' views in the placement of policies and strategies into the integrated management matrix. Therefore, in order to test the possible differences, we took up one of the development plans with two professors from the Management and the Department of Project and Construction Management Departments. When we compared their classification with our previous work, we did not encounter any major differences.

Below we will first give an example of 'systems analysis "for" policy making' by the detailed analysis of the eighth development plan covering the period between 2001 and 2005. Along with the eighth development plan, we also analyzed its two associated annual programs and a support report for the 2002 annual program to see the logical connections between different hierarchy and recursivity levels. Then, we will give an example of 'systems analysis "of" policy making' by the analysis of all development plans.

5.1. Systems analysis "for" policy making

We extracted construction policy and strategies from the eighth development plan. We compared the content of policy and strategy statements with the contents of IDMM elements. In cases, where one statement covered more than one IDMM element, we divided it into sentences and phrases. As a result of this analysis, the breakdown of all construction sector-related Plan 8 statements into the IDMM is shown in Table 1.

From Table 1, we notice that:

1. The policies and strategies identified in the eighth development plan do not cover all the cells of IDMM. For instance, there is no sentence in normative behaviors. In addition, the statements in strategic level are far from directing the construction sector to create more value in medium term. Considering development plans as strategic documents guiding both public and private sector, particularly the lack of strategic goals, which should give strong clues about the future developments and the view of state, is not desirable. One last issue might be the dominance of operational level statements, which should be covered by annual programs.
2. Even if they cover some of the elements of IDMM, the relationships between statements are either poor or nonexistent. This means that there is insufficient or no causal relationships between different elements and they do not complement each other from normative to operational levels from goal, structure, and behavior aspects.

Table 1
Distribution of eighth 5-year plan construction statements in the IDMM [35]

Eighth 5-year development plan (2001–2005)			
	Goals	Structures	Behaviors
	6	9	4
Normative 5	2 Increase of the share of contractors and consultants in the world markets Increase of competitiveness and efficiency of the sector	3 Revision of the legislation structure concerned Harmonization with international standards and EU legislation in the sector Turkish Procurement Legislation shall be harmonized with the related EU standards and the legislation of the World Trade Organization	0
Strategic 6	2 Increase of the quality and effectiveness of external contracting and technical consultancy services Improvement of quality of services produced according to the international standards	2 Removal of the differences from the EU legislation Elimination of the existing disorganization in the legislation	2 Vocational and technical training studies carried out to meet the intermediate manpower needs of the sector, shall be supported. In-service training shall be emphasized; training and education shall be restructured according to the requirements.
Operational 8	2 A data bank concerning the construction, engineering, and contracting services should be established Chambers of Contractors shall be established	4 Regulation on building control implementation belonging to Decree Law on Technical Control and Supervision of Buildings, No. 595, shall be put into practice With respect to the Reconstruction Law No. 3194 on public works and related regulations, revision studies including a new building control system and technical measures ensuring building solidity against disasters shall be done Lack of sufficient control owing to lack of implementation reduces earthquake safety buildings; Decree Law on Technical Control and Supervision of Buildings shall be fully implemented through necessary arrangements to be made in related regulations of this law and the related legislation Aim of preventing natural events to turn into disasters and thus ensuring safer, regular, and healthy environment for people within economic criteria, available legislation on selection of location and control shall be revised and collected under a single legal arrangement	2 Vocational certification system shall be made operative. Legislation studies for meeting the requirements of qualified and experienced engineers and architects for an effective and efficient building control as stated in the Decree Law No.595 shall be concluded.

To clarify these points and to discuss how these statements could be integrated, we took two statements from the plan and examined them in detail. Below we have included the original English texts (as prepared by SPO) of these two plan statements in the eighth development plan:

1733. The aim is to ensure harmonization with international standards and EU legislation in the sector, and to increase the quality and effectiveness of external contracting and technical consultancy services within the country and their share in the world markets.
1734. Within the framework of these objectives and principles, main policies of the sector shall be: revision of the legislation structure concerned, elimination of the existing disorganisation in legislation, removal of the differences from the EU legislation, increase of competitiveness and efficiency of the sector, and the improvement of quality of services produced according to the international standards.

One may note two points from the above statements:

1. They contain similar sentences
2. They include more than one item as depicted below:

The aims of 1733 are:

- a. to ensure harmonization with international standards and EU legislation in the sector
- b. to increase the quality and effectiveness of external contracting and
- c. to increase the quality and effectiveness of technical consultancy services within the country
- d. to increase their share in world markets.

Within the framework of these objectives and principles, the 1734 main policies of the sector shall be:

- a. revision of the legislation structure concerned
 - i. elimination of the existing disorganization in legislation
- b. removal of the differences from the EU legislation
- c. increase in the competitiveness and efficiency of the sector
- d. improvement of quality of services produced according to international standards.

Actually, it is very difficult to see how harmonization with EU legislation on paper would affect the quality of services in reality. Each and every part of the statements may be a prerequisite or result of other statements in the plan. Systemic and causal relationships between plan statements are not shown, and difficult to follow from the text, which may prove difficult than the actual realization of statements. [Table 2](#) shows the distribution of some of the items from the statement into the IDMM.

The empty cells in the IDMM show the issues to be considered and completed when policies and strategies are proposed. According to integrated management philosophy, the empty cells of IDMM should be completed with appropriate statements in accordance with other cells in a complementary stance. Here, a simple roadmap [6] would be very useful to show the interdependencies and causal

Table 2
Sample IDMM breakdown of plan statements 1733 and 1734

	Goal	Structure	Behavior
Normative	To increase contractors' share in the world markets To increase competitiveness and efficiency of the sector	Revised legislation structure	?
Strategic	To increase the quality and effectiveness of technical consultancy services within the country To improve quality of services produced	Elimination of the existing disorganization in legislation	?
Operational	?	?	?

interrelationships between the items. Fig. 2 shows the systemic relationships between the parts of original plan statements.

This figure highlights to important issues to be considered in the development of a plan:

1. As marked above, there are multiple relationships between plan statements. A statement or an item in a statement might be causally related with other statements or items. Therefore, the formulation of plan statements is vital. If possible, these statements should be supported with some simple roadmaps as we indicated above. Sometimes presenting statements just as sentences is insufficient to explain the real intention and to show the connections the ideas produced.
2. From this figure, we also see the work breakdown between different type of studies targeting different time horizons. As shown in the figure, strategic plans should follow a longer-term Foresight exercises, where normative goals, structures, and behaviors are considered sufficiently deeply. Then, development plans in the midterm should show directions more explicitly and should define certain

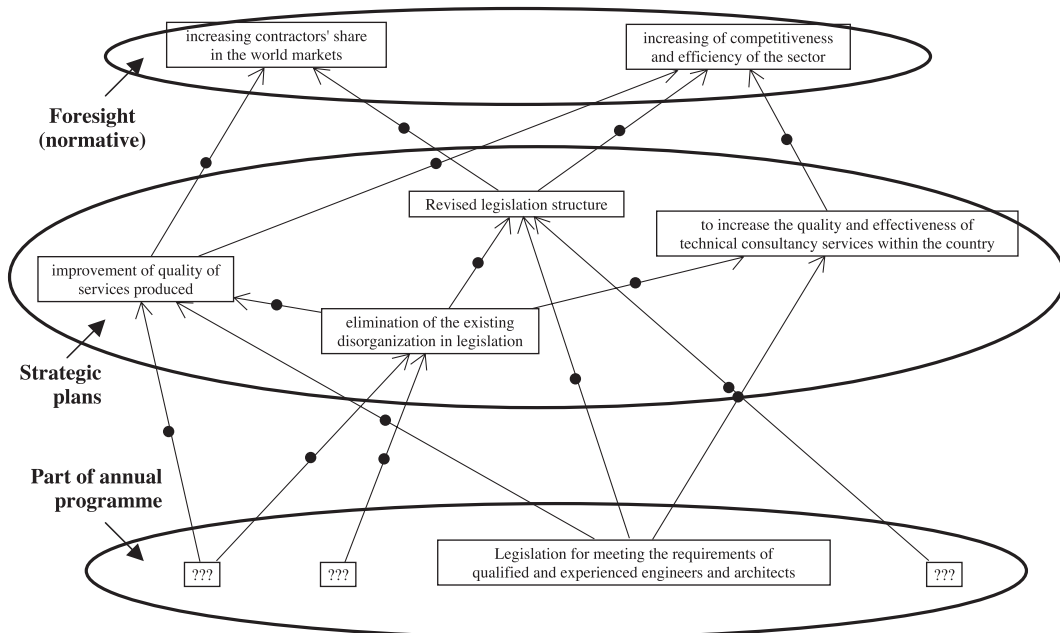


Fig. 2. Systemic relationships between the parts of plan statements 1733 and 1734.

Table 3
Distribution of policies in the eighth development plan with their percentages

	Total	Goals	Structures	Behaviors
		6 (30%)	9 (50%)	4 (20%)
Normative	5 (27%)	2 (10%)	3 (17%)	0 (0%)
Strategic	6 (30%)	2 (10%)	2 (10%)	2 (10%)
Operational	8 (43%)	2 (10%)	4 (23%)	2 (10%)

targets to be reached. Finally, operational plans, which are annual programs in our case, should explain how to implement all the strategies developed in higher hierarchy level.

Now we will examine two annual programs of 2001 and 2002, and a support report developed for the 2002 annual program, in order to see whether they fulfill their expected function or not.

Tables 4–6 illustrate the results of the analyses of 2001 and 2002 annual programs of the eighth development plan and the 2002 annual program support report that was published in April 2002. We placed all policies and strategies in the 2001 and 2002 annual program and 2002 program support report into the integrated management matrix as we carried out for eighth 5-year development plans above. Tables 3–6 show the number of statements or items in each IDMM cell and their percentages in total.

During our analysis, we observed that annual programs were mostly word-for-word copies of development plans. This similarity can be also noticed if Tables 4–6 are compared to Table 3. Furthermore, we see less number of operational level statements in annual programs and in support report. The relative number of normative level statements is maintained along annual programs. When we look at the support report for 2002 annual program, we see even the lowest number of statements among other plans and programs in terms of operational level decisions. Its only contribution was a new statement in operational behaviors cell, which was never mentioned before. From this picture, we can say that annual programs and even their support reports are far from satisfying the expectations from these types of operational plans.

5.2. Systems analysis “of” policy making

As a result of the analysis of seven previous development plans with a similar approach adopted for the eighth development plan, Fig. 3 indicates the numbers of policies and strategies developed for the construction industry in each plan. As we did in our previous analysis, we divided some of the statements into several partitions, since they contained more than one policy and strategy item that can

Table 4
Distribution of policies in the 2001 annual program with their percentages

	Total	Goals	Structures	Behaviors
		6 (39%)	8 (53%)	1 (8%)
Normative	5 (33%)	2 (13%)	3 (20%)	0 (%)
Strategic	5 (34%)	2 (13%)	2 (13%)	1 (8%)
Operational	5 (33%)	2 (13%)	3 (20%)	0 (%)

Table 5
Distribution of policies in the 2002 annual program with their percentages

	Total	Goals	Structures	Behaviors
		6 (42%)	7 (49%)	1 (9%)
Normative	5 (35%)	2 (14%)	3 (21%)	0 (0%)
Strategic	5 (37%)	2 (14%)	2 (14%)	1 (9%)
Operational	4 (28%)	2 (14%)	2 (14%)	0 (0%)

be attributed to more than one cell of integrated management matrix. The numbers below are the outcome of our intervention to plan paragraphs and sentences.

As indicated in Fig. 3, although there was a strong emphasis on construction industry statements in the first half of the plan-based development period, there is a decrease in the second half. It is noteworthy that as an industry which covers 5.8% of total GNP and 60% of fixed investments in Turkey, construction could not take place in the seventh development plan. However, there is a recovery in the eighth development plan where the construction industry is seemed to be dealt with more comprehensively under the “Construction, Engineering—Architecture, Technical Consultancy, and Contracting Services” heading. In other plans, except the third plan, the construction industry was dealt with under “Construction” heading. In the third plan, the industry was surprisingly taken up under “Drinking Water, Industrial Water, and Sewer System and General Management” subheading under “Settlement Problems” heading.

After placing all the construction industry-related policies and strategies into the IDMM, we counted the number of statements in each field to understand the general characteristics of the plan. Then, we summed up the values in both rows and columns to see the balance of fields. We also draw radar diagrams to better evaluate the overall directions of development plans (see Fig. 6). Additionally, we paired all the similar cells from the plans and indicated them with bar charts to show the trends developed in time (see Fig. 7).

5.3. Assessment according to levels of IDMM

When we examine the development plans in terms of management levels, we see the dominance in the number of statements in strategic and operational levels than normative level in general (see the tables above and Fig. 4).

The fifth development plan contained 28% of its policies and strategies in normative level that is the highest among others. When the numbers are considered, we see that eighth development plan has the

Table 6
Distribution of policies in support report for the 2002 annual program with their percentages

	Total	Goals	Structures	Behaviors
		6 (28%)	7 (49%)	3 (23%)
Normative	5 (35%)	2 (14%)	3 (21%)	0 (0%)
Strategic	5 (37%)	2 (14%)	2 (14%)	1 (9%)
Operational	4 (28%)	0 (0%)	2 (14%)	2 (14%)

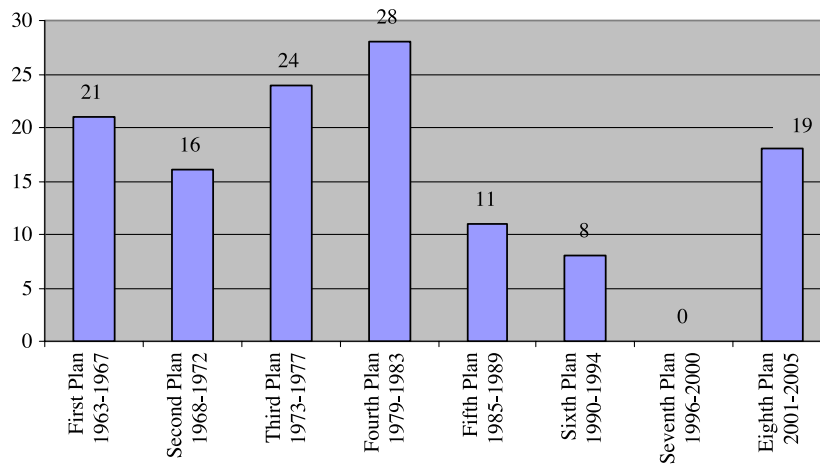


Fig. 3. Numbers of construction policies and strategies in years (derived from construction statements in Refs. [27–35]).

highest number of normative level statements that represents 27% of all policies and strategies in that term (see Table 3). Other plans carried fairly less policies and strategies in normative level.

Fig. 4 indicates that the percentage of normative level decisions in development plans increased during the first half of planning period. After a dramatic increase in fifth development plan, we see an imbalance in the sixth, seventh, and eighth development plans. This means that there was a further emphasis on longer-term concerns in the first half of planning period. However, we see that there is again a concern on normative level in the last development plan.

As we emphasized above, in 5-year development plans, we expect to see a weight in strategic level decisions because Turkish 5-year development plans are produced for 5 years by taking the next 15 years into consideration. When we look at the strategic level in the plans, we see that second development plan covered more than half of its policies and strategies in strategic level (Fig. 4). We see equalities among strategic and operational level decisions taken in the third and fifth development plans. The extremely low strategic level decisions in the eight development plan need particular consideration as the last produced development plan after 35 years of planning experience.

In operational level decisions, we see that there is a parallelism with strategic level except the first and eighth development plans where the operational level decisions are dominant. The first and eighth development plans focused mostly on operational levels and covered about 50–60% of all policies and strategies in operational levels. About all of the plans surprisingly contained a high proportion of operational level decisions. However, in the light of the general characteristics of Turkish development plans, the operational level decisions have to be taken mostly in annual programs. Nevertheless, our analyses of annual programs have shown that they do not satisfy these expectations.

5.4. Assessment according to components of IDMM

In advance of examining the development plans by the components of management, we assumed to see a continuity of decisions taken from goals to behaviors through structures. Our assumption is based on the thought that suggests the determination of goals, then manipulation of structures in the light of these goals, and, finally, creation of behavioral pattern consistent with the goals and structures.

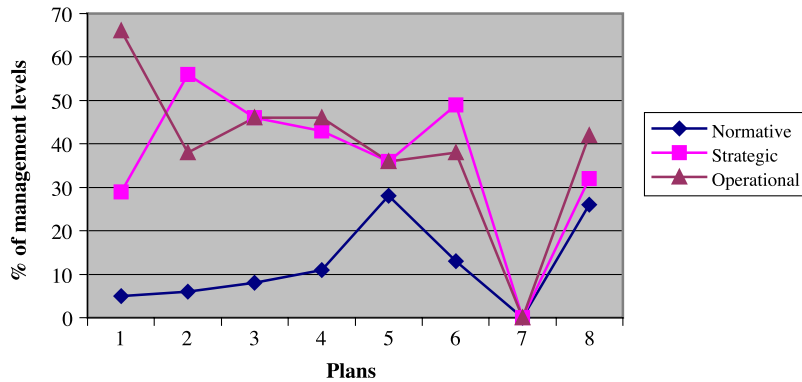


Fig. 4. Percentages of management levels in development plans.

After the analysis of development plans, we observed a strong emphasis in structures in general (Fig. 5). In the first, second, sixth, and eighth development plans, the proportion of decisions taken in structures reached 70%. However, the first and eighth development plans indicated the same characteristics in terms of the high number of decisions under structures while having a low number of decisions in goals. As a consequence, there is an inconsistency between goals and structures (Fig. 7).

A low number of goals particularly in the eighth development plan attracts attention, since there is a contradiction with the high number of statements under structures. This circumstance points out structuring the organization without objectives and means daily solutions to the problems occurred reactively. The third, fourth, fifth, and sixth plans indicate a more coherent composition in the distribution of policies and strategies produced.

The weakest component of all development plans is behaviors. The amount of policies and strategies in behaviors is very low, or there is no statement in all levels. It is the absence of humans, who implement all the decisions taken in all levels of organization, that was mostly out of the plan scope. This situation points out one of the most significant factors that caused the plans to fail.

5.5. Joint assessment of IDMM elements

During our analyses of development plans, we witnessed a strong emphasis on operational level decisions particularly under the goals and structures components of management (Fig. 7). Nevertheless, as we underlined above, the Turkish development plans are supported with annual programs to transform the normative and particularly the strategic level decisions into actions in operational levels.

We used radar diagrams and bar charts to assess both management levels and components simultaneously. Fig. 6 indicates the overall directions of the plans among integrated management elements. In a balanced radar diagram, we expect to see a balance in hatched areas. The balance here is not in the equality of the number of statements between different elements but in the presence of statements in each element. This situation could be better understood when the legislation system is considered where laws require many more regulations to be implemented.

When we look at the first development plan, we see a strong emphasis on operational structures and weaker emphasize on strategic structures, strategic goals, and operational goals. The second plan—a

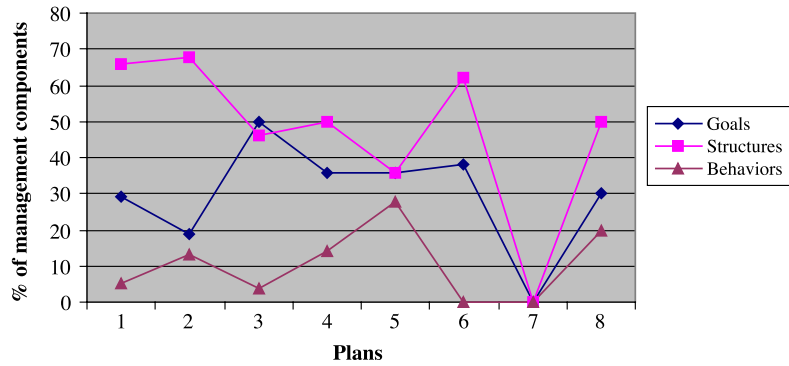


Fig. 5. Percentages of management components in development plans.

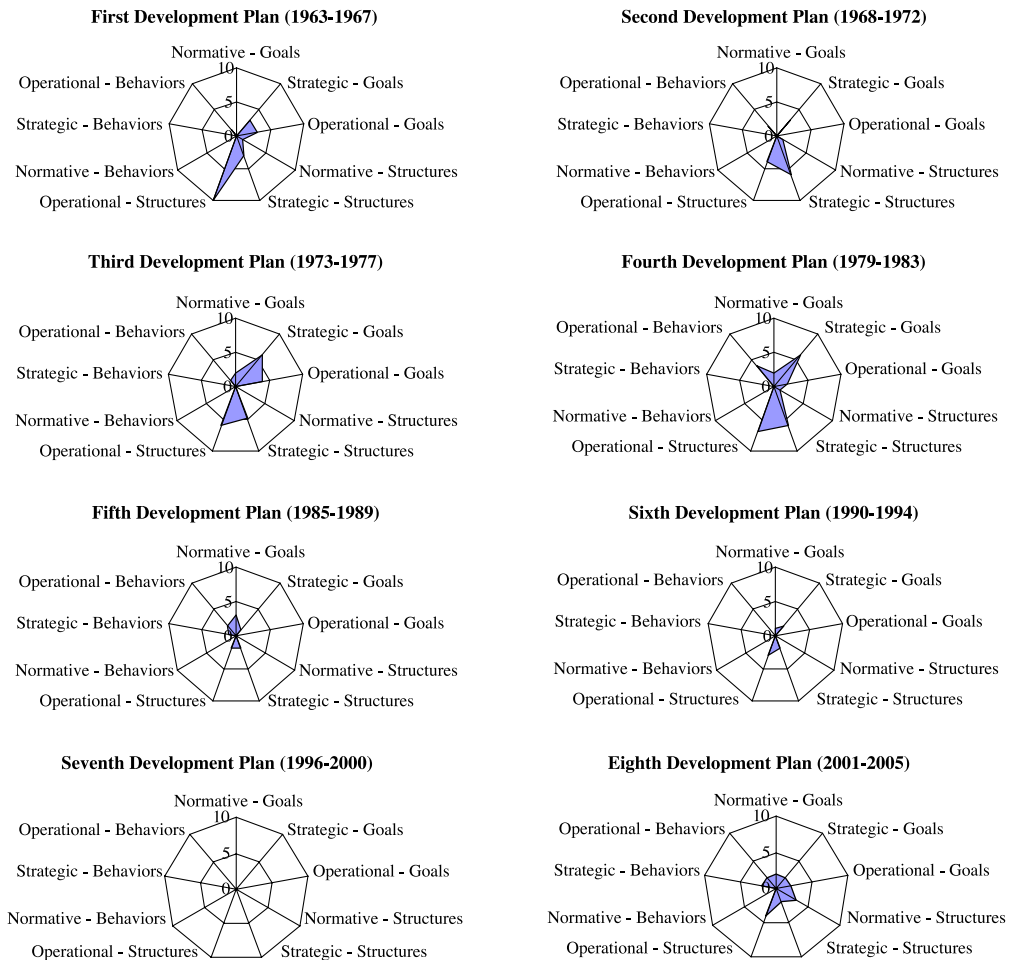


Fig. 6. Orientations of development plans.

balance between normative, strategic, and operational structures—can be said since it covers statements in structure consistently.

The third development plan hatched more area in the radar diagram since it covered goals in all levels. However, the other elements of IDMM remained absent. The most balanced diagram among development plans was indicated by the fourth development plan. The fourth plan oriented to both structures and goals as well as to behaviors in an unstressed way. This plan could be said to be the most consistent one with IDMM, among others. However, it still lacks normative and strategic behaviors that are keystones for the implementation of the plan.

We see that the fifth development plan indicated weak orientation to both normative and strategic goals. It emphasized the goals and tried to reflect these goals to the structures a little with a very small concern in strategic and operational behaviors. The fifth plan could be a balanced and coherent one, if it had contained more policies and strategies particularly in normative behaviors. However, there are only 11 decisions taken in the fifth development plan.

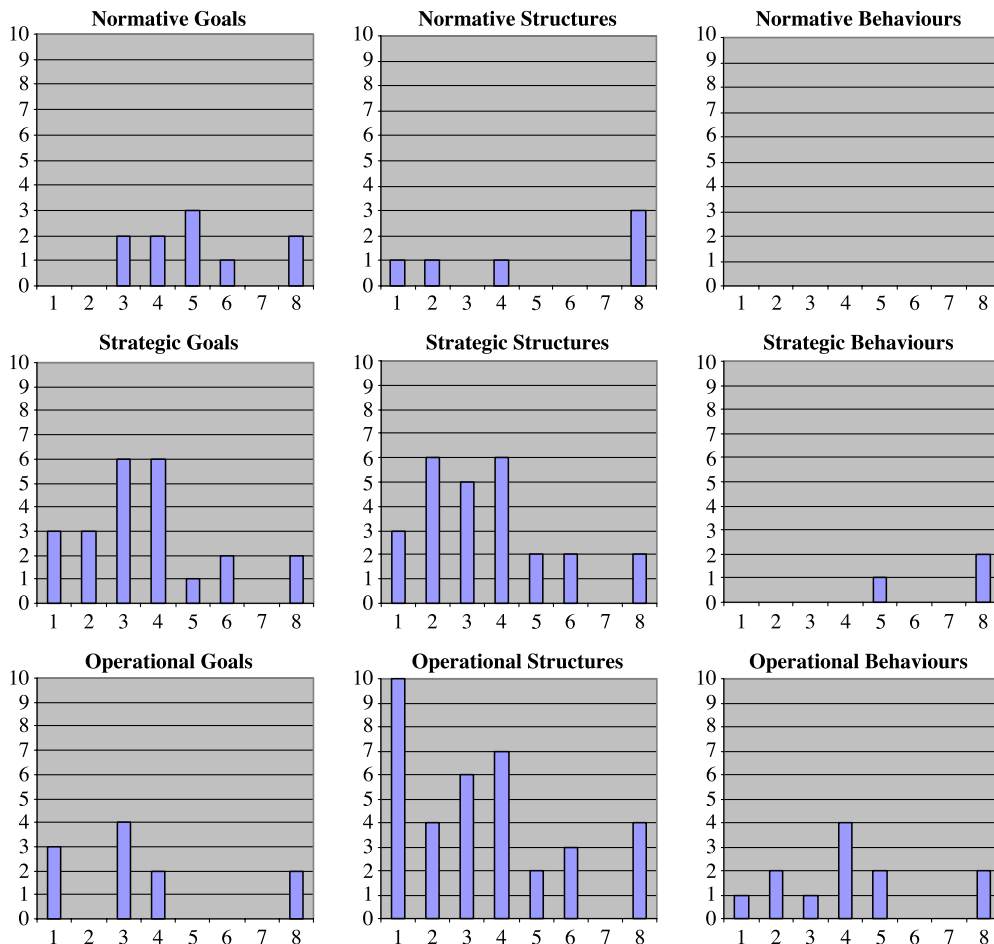


Fig. 7. Number of statements in each element of IDMM.

The sixth development plan contained even less decision than the fifth. The diagram belonging to the sixth development plan displayed very weak orientation to strategic and operational structures and normative and strategic goals. As we highlighted above, the seventh development plan contained no data on construction industry.

As the last development plan, the eight development plan indicates a return to the first development plan in terms of its emphasis on operational structures. In the plan, the operational structures are supported by normative and strategic structures. Additionally, there is a slight orientation to the strategic and operational behavior directions.

In Fig. 7, we brought all the similar cells from the plans together and showed them with bar charts in each element of IDMM to indicate the trends developed in time.

From the figures, we see that development plans mostly indicated a strong orientation to one, two, or a maximum of three fields in the fourth development plan. There is a strong emphasis on operational structures in general.

6. Diagnosis of problems

In the light of the analysis, we give several answers to the question: “Why did the development plans fail to meet their targets in Turkey?”

Although the construction industry is one of the key industries in Turkey, eight development plans were insufficient to provide the adequate policies and strategies for its development. Because of the lack of normative level policies, we see that the development plans do not open new horizons for the construction industry. Actually, as we discussed above, this normative level would be the subject of an institutional foresight activity, which could guide strategic development plans. Moreover, a higher number of operational level statements independent from normative and strategic level mean seeking daily solutions to most of the problems in the country.

Moving from the time perspective of the development plans we have, we were expecting to see that development plans could dominantly consist of strategic level decisions, which cover all three components of management, because we knew that the Turkish development plans were produced for 5 years by taking a 15-year perspective into consideration. Thus, we expected to find the operational level of goals, structures, and behaviors with numerical objectives in annual programs. Although we could not find enough normative and strategic level decisions in the development plans, we found an extremely high number of operational level decisions. However, when we look at the annual programs, which exactly duplicate the development plans, the number of normative or strategic level decisions is higher.

Another thought-provoking point is the parallelism between the attitudes of SPO and the Turkish Industrialists’ and Businessmen’s Association, which also repeated itself word-for-word in their two reports published in 2001 and 2002, which examine sectoral problems and propose solutions.

In addition, the lack of behaviors- and human-oriented decisions in both plans and programs might acknowledge at least one of the reasons behind the employment of low-qualified, uneducated, or less educated people of the society in the construction industry. This situation might also be attributed to the government policies that see the construction industry as a store for employment in the economy. As a consequence of poor workmanship and low quality of materials without proper inspection, the 1999 Marmara earthquakes turned to a real social, economic, and environmental catastrophe.

The Eighth Five-Year Development Plan Construction, Contractors, Engineers, and Consultants Specialization Report raises another essential point, which can help to understand to reveal the underachievement of plans about the role of government on construction industry. The report states that the government that holds legislative power and uses this power for its own favor, such as the delay in construction payments. According to the report, this status of government as a major entrepreneur increases the risks for the construction industry.

We also see that the development plans failed to learn from the past. We could expect more balanced plans (Fig. 6) in terms of their elements in recent years. However, we see that the sufficiency of development plans to satisfy these expectations has been decreased in later plans, since the strategic and normative level statements were lost or remained the same.

In the light of these arguments, we conclude that development plans do not appropriately fulfill their guiding, coordinating and announcement functions from the IDMM perspective. Forty-year experience in development planning by SPO in Turkey confirms all findings of Gilbert [14] (see Section 2). For example, the realized performance of SIS causes delays in reaching vital data on different parameters of socio-economic life in the country. Lack of data impairs the clarity of program. The development plans also failed in all dimensions mentioned by Bryson et al. [26] (see Section 2). Frequent changes in government and high-level bureaucrats caused problems in the management of:

1. attention, commitment, and focus on key issues, decisions, conflicts, and policy preferences at key places in the process and organizational hierarchy
2. strategic ideas into operational projects
3. part–whole relations
4. institutional transformation through strong leadership.

In none of the plans will we see an attempt by the SPO to handle complexity by reconceptualizing the task of exercising influence as stated by Stewart and Ayres [5] (see Section 4).

7. Conclusions

Our aim in this study has been to come up with a new integrative approach in policy and strategy making/analysis by proposing IDMM as a tool. Further studies could be conducted into the development plans in order to have more concrete ideas about their nature. However, we can say that the plan-based period must come to its end in Turkey. In a complementary stance, the time of integrating foresight and development planning has come.

Moving from “system analysis ‘for’ policy” basis, we contend that IDMM is a powerful tool for public policy making and recommend integrated development management perspective to the policy and strategy makers. We propose that any development plan has to have *claritas–unitas–integritas–consonantia* between the management levels (normative, strategic, and operational) and components (goals, structures, and behavior) of IDMM.

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