



An Application of Consistency Testing for Spatial Plans: Case of Trabzon, Türkiye

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Abstract

The starting point of this study is the problematic perspective of focusing only on the final product in spatial planning, while ignoring the planning process, and a lack of certain standards/criteria of the evaluation stage for the internal and external consistencies of spatial plans. Although it has recently attracted significant interest in the field, the methodological use of evaluation is not widespread in planning practice. Evaluation, which is considered to be a simple checking duty in the Turkish planning system (TPS), is not considered in the related literature and legislation. Focusing on the “evaluation stage” of spatial planning, this paper aims to demonstrate the contribution of the previously developed Guideline for Evaluation of Spatial Plans (GESp) in testing and ensuring the consistency of different scale and types of plans prior to their approval. The first phase of the study focuses on the concept of evaluation, reviews a series of related literature for the evaluation of plans, and discusses the evaluation stage in the TPS. In the second phase, the consistency of the selected case area plans after addition of new resources that comply with the input of the previously developed evaluation framework GESp is examined. This guideline, which is an analytical method proposal, is applied over the selected cases, involving the upper-scale plans that cover Trabzon province and lower-scale plans for some settlements that were selected from within this province. Consistencies of all the plan components (plan sheets, plan report, plan notes, plan legend) of plans with different scales for the case area were tested in terms of the criteria of the developed guideline. Most of these plans were found to be inconsistent, both internally and externally. In the study, it was determined that the plans in fact contained many inconsistencies on their approval without being subjected to such evaluation. Although the study did not focus on the frequency of evaluation of spatial plans, the parties that will make those evaluations, and how to use their output, it provides basis for future studies. The “evaluation stage”, an important theoretical issue in the international literature, is exemplified for both how it would be handled and tested in practice. Identifying the needs, processes, and problems related to the evaluation stage, mainly for its ex-ante stage, will allow the TPS to intervene in the preparation of plans before their approval. This may have a positive impact on the production of final plans that are more comprehensive, and do not require continuous changes during the planning process. The introduced use of the guideline will contribute to the limited number of studies, concerning the evaluation stage of the spatial plans in Türkiye, besides guiding the related possible legal regulations regarding the TP.

Keywords:

Spatial planning, evaluation, guideline for evaluation of spatial plans, Trabzon

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INTRODUCTION

The rapid development and change of population and environmental, social, and economic structure of the regions and the settlements they cover cause a continuous change in land-uses with different paces by means of spatial plans, i.e., tools for intervention into the space. "Spatial planning is complex and forms a dynamic process. Various parties make spatial plans from different spatial perspectives (local, regional, national)." (Vullings et al. 2007, p. 1). In this variety, control that provides a sound base for planning becomes important. In the international literature this control was especially included as an evaluation of spatial plans, in order to measure their success (Alterman and Hill, 1978; Calkins, 1979; Alexander and Faludi, 1989).

In the spatial planning process, the evaluation stage may form a basis for the accomplished works to reach a determined standard, by enabling for plans to be systematically evaluated, for their strong and weak aspects to be determined, and by questioning their integrity with respect to the current plans (Berke and Godschalk, 2009). According to Erdem and Meşhur (2005, p. 341) "[u]rban planning is a process of successive decisions, and the consistency between these decisions determines the level of success of planning." Defective aspects of the plan and unexpected developments can be closely monitored and supported by revisions of the plan, when needed. However, despite being part of the urban planning process, and becoming important in monitoring the direction of plan decisions towards targeted urban development, the stages that include the evaluation were not considered in the field of planning until the last few decades (Lichfield et al. 1975; Berke et al. 2006). Accordingly, the evaluation of urban planning (Roeseler, 1982; Talen, 1996) only gained importance after the mid-1980s. As Soria and Valenzuela (2013, p. 945) point out:

[v]arious studies highlight the appropriateness, and even the necessity, of incorporating evaluation systems in planning ... The main benefit derived from such systems is their power to legitimate and improve the planning process in the eyes of citizens, policy-makers and planners.

In the history of planning practice, a common opinion has been established that the evaluation of plans can be undertaken in three stages: 1) during plan preparation (ex-ante), 2) during plan implementation (on-going), and 3) after plan implementation (ex-post) (Oliveira and Pinho, 2008; Alexander, 2006; Laurian et al. 2010).

Testing the compatibility of plans with plan objectives, especially during the implementation stage, has been discussed in many studies (see Oliveira and Pinho, 2010; Bunnell and Jepson, 2011; Segura and Pedregal, 2017). In this respect, three types of studies were observed. The first study type, reveals how the plan decisions differ from the targeted or the observed future land-use (see Tian and Shen, 2007; Laurian et al. 2004). The second study type seeks answers to questions about the extent to which the upper- and lower-scale plan decisions of

the same place are consistent with each other (see Gölbaşı, 2014; Bacău et al. 2020; Olazabal and De Gopequi, 2021). The third study type, that takes the temporal perspective into account in the evaluation, determines whether the plan decisions of a settlement that were given in different periods are consistent with each other (see e.g., Alterman and Hill, 1978). Those who evaluate the plans by creating a systematic method, deal with the plans, which differ by scale and type, in terms of their inconsistency and interpretation of incompatibilities, according to the variety of evaluation criteria guidelines or scoring within the scope of the survey questions created. According to these evaluation results, various definitions are made, such as low-rated plans, inconsistent plans, or incompatible plans.

However, the above-mentioned studies have limitations, mainly due to the uncertainty in the concrete concept of evaluation and the lack of measurable criteria. Ultimately, there is a lack of consistent guidance for different policy scales, on how to ensure the internal consistency within the plans of a settlement, and horizontal-external consistency between similar-scale neighbouring plans, vertical-external consistency between upper- and lower-scale plans of the same settlement, and how to evaluate spatial development/improvement. Especially in developing countries, before the implementation of plans, evaluation criteria for their internal control and for their conformity with respect to other existing plans (i.e., preliminary evaluation) should be specified in planning systems, which is important for practitioners.

With the increase in concerns regarding the accountability of local governments to the central government and to citizens in the mid-1990s, an increase in interest regarding monitoring and evaluation practices is observed (Bernstein, 2001). An example in Türkiye is the evaluation of development plans by the related commissions and by the municipal council, prior to their approval. However, Ersoy (2005, p. 139) explains this situation by stating,

[t]he majority of members of the municipal council examine development plans, which they have never seen before, after the proposal of the commission and explanations of the mayor by a so-called review they assure it to pass a “political control”. What is actually done is the control of parcel-based interests.

This forms the starting point in the setting of the research question for the present study. The focus on the final product in spatial planning studies, and the fact that the evaluation stage is carried out under processes and conditions which include many limitations, such as not being based on standards and defined technical criteria, subjectivity, etc., cause irreversible physical, social, and economic problems in the implementation of the plan. This paper presents two basic discussions, by taking the problem of consistency among different scales one step further. The first is the examination of the above-mentioned internal consistency within the components of plans of a settlement, that is, within plan sheets, plan report, plan notes, and plan legend. The second

is the horizontal-external consistency between the same-scale neighbouring plans, and vertical-external consistency between the different scale plans of a settlement.

In addition, according to the Evaluation Report on the Spatial Planning System (2018, p. 46) of the former Ministry of Development;

the success of the upper-scale plans will be determined by the effectiveness of the inter-scale decision transfer system and the consistency and complementary relationships between the plans. However, in our country, the decision transfer system between scales does not function fully and monitoring, evaluation and control mechanisms cannot be operated effectively for plans of any scale.

In this context, this paper takes the interscale inconsistency problems one step further. Therefore, in addition to these problems, it discusses the lack of consistency between the plan's own components—plan sheets, plan report, plan notes, and plan legend—and inconsistencies between the same-scale neighbouring plans.

As an example of addressing these basic problems within the framework of Türkiye, planning processes of different scales and types of plans have been selected for Trabzon province. The purpose of the study is to demonstrate the contribution of previously developed Guideline for Evaluation of Spatial Plans (GESp) (Öztürk, 2018; Öztürk Saka and Erdoğan, 2021; 2022) in ensuring the consistency of the decisions of those plans prior to their approval. This guideline is composed of a series of criteria, to test spatial plans for their internal consistency in addition to their horizontal consistency, with respect to the neighbouring and vertical consistency with its the upper- and lower-scale plans, in terms of the plan hierarchy. Thus, it involves two basic tests that search for consistencies of spatial plans: (1) internal and (2) external. While internal consistency is examined within the plan itself, externally it is two-fold; firstly, in a horizontal manner with the same scale neighbouring settlement plans and, secondly, in a vertical manner with different (upper- and lower-scale) plans for the same settlement. There are sub-criteria under these basic criteria. They were based on the requirements of the related legislation and/or professional doctrines/tenets regarding the respective types and scales of plans. They involve process consistency, information flow consistency, plan decisions consistency, methodology consistency, and plan language consistency.

The research questions of this study are listed in the following. The first is related to setting a theoretical/ empirical/ legal-administrative/ professional background while the second is related to the application of the GESp.

- What does evaluation and consistency mean for spatial plans?
- How can internal, horizontal-, and vertical-external consistency tests be performed in ex-ante evaluations of spatial plans?

The present application-based study provides important results, in that, ex-ante evaluation of spatial plans serves as a guideline for the

means that will provide input into scientific research, and even legal regulations on how effective and viable local and regional plans are before their decisions are accomplished, in the long term. This guideline, which is discussed through the case of Türkiye, raises legitimate questions, with which to investigate the application of the consistency tests for spatial plans. In this sense, the novelty of the study is due to the way these problems, which are expressed by everyone in some way, are handled with a scientific basis.

The study consists of two basic phases. In the first phase, attention is paid to the concept of evaluation, which constitutes the basic theoretical/ empirical/ legal-administrative/ professional framework of the research, a series of key studies were reviewed, and the evaluation stage in the Turkish planning system was discussed. In the second phase, new sources, compatible with the input for the proposed guideline (GESP) in Öztürk (2018) and Öztürk Saka and Erdoğan (2021; 2022), were examined and the consistency of the selected case area plans were tested as if they were evaluated before their approval. With this guideline, which is an analytical method proposal, the upper-scale plans that cover the City of Trabzon and the lower-scale plans for some settlements from within this city were evaluated.

LITERATURE AND LEGISLATION

Concept of Evaluation and its Evolution in Planning Approaches

Akçay (2009, p. 85) refers to the concept of evaluation as “measuring the implementation results in comparison to the goals and objectives and analysing the consistency and suitability of such goals and objectives”. According to Güredin (2000, p. 5) “... it is a systematic process that collects and evaluates objective evidence in order to investigate the degree of conformity with predetermined criteria, and to inform those interested in the results.” Based on these definitions, it can be said that evaluation is closely linked to concepts of conformity or consistency. As Bacău (2020, p. 1) states, “[i]n an urban region, plans should be externally consistent, enhancing integration across policy domains (e.g., housing, transport, agriculture) at different spatial scales”.

Since the early 1970s, many studies have been conducted on the effects of a programme or policy, and how and why the implementation takes place. While the essence of political research projects on concept and method consisted of an emphasis on economic, social, and health-related policies (Mazmanian and Sabatier, 1989; Goggin et al. 1990), they refrained from entering the field of physical, spatial planning areas (e.g., handling of land use and the built environment). The evaluation, which was not adequately addressed within the scope of spatial planning at the beginning, has attracted attention within the scope of current problems over the last decade, and has also tended towards the special fields of planning, and thus evaluation of plans, including sustainability, climate change, natural disasters reduction, watershed

and coastal resource protection under criteria established with reference to various international conventions or agreements.

In recent periods, with the advent of strategic planning, the emphasis on procedural aspect of planning involved a need for an integrated approach for simultaneous handling of the evaluation stage with the planning process (Öztürk Saka and Erdoğan, 2022). According to Oliveira and Pinho (2008, p. 33), there are three types of evaluations:

Ex-ante evaluation occurs in the beginning of the planning process and it promotes the comparison of possible alternatives, in order to choose the best solution for further development. On-going evaluation takes place during plan implementation and its conclusions can lead to shifts in the planning process. Focusing on the plan results and on the use of resources, this kind of assessment requires a set of information that should be provided by an adequate data system. Ex-post evaluation occurs in the end of the plan implementation process and it focuses on the impacts of the plan. This type of evaluation reviews the whole process of preparation and implementation of the plan, and formulates a judgment about its success.

These three types of evaluation correspond to three common stages of planning: preparation, implementation, and revision of plans (Lichfield and Prat, 1998). Baer (1997, p. 330) defines five stages of the planning process, while relating the determination of the appropriate criteria for plan evaluation to those distinct stages of planning: “(1) plan assessment, (2) plan testing and evaluation, (3) plan critique, (4) comparative research and professional evaluation, and (5) post hoc evaluation of plan outcomes”. On the other hand, Connell and Daoust-Filiatrault (2018, p. 266) make an emphasis on the timing of stages, rather than defining them, and state that

[r]egardless of how the stages may be defined, the timing of the evaluation is strongly associated with the object of study, whereby one might focus on comparing possible alternatives during plan preparation, on results and use of resources during plan implementation, or on whether and to what degree plan policies are carried out (conformance) or their role in effecting change when the plan is implemented (performance).

It is not possible to think of the root cause of such changes in spatial planning separately from the evolutionary nature of planning approaches. Initially, only the final product (plan) was the focus in the approaches towards the content/essence of planning, and subsequently the planning process and the approaches, based on communicative rationality, began to gain importance. That is, in the words of Demirci (2004, p. 309);

premises on which the idea that sees plans as ideal policy decisions (such as plan’s introduction of the technical, rational, non-political, neutral, long-term, and comprehensive best-term solution, where knowledge is complete and precise, homogeneous society and unitary public interest) are now controversial.

This situation has affected the handling of the evaluation, in practice. While there was no concrete progress for the evaluation stage in the late 19th century, in the period of 1930-1960, characterised by prevailing rational comprehensive planning, this stage was defined within the planning process, despite the fact that the focus had been on the plan itself, that is, the final product (Oliveira and Pinho, 2010; Ayrancı, 2013). In this approach, “rational” assessments prevail in urban planning decisions. These evaluations, as Ersoy (2007, p. 118) point out, “emphasize objectivity rather than subjective, emotional attitudes; instead of highlighting and addressing social contradictions, it is the adoption of a public interest approach that defends the interests of the broadest segments of society.” Between the 1960s and 1980s, pluralistic, advocacy, and participatory approaches were raised in planning, and by supporting participation in society, and the plans began to be questioned and evaluated by this provision of a negotiation environment (Ersoy, 2007). In this respect, participation in urban planning, became “institutionalised” with an active and communication-based tendency, and the evaluations in this process have gained importance. However, since the challenge for different scale plans did not dominate, the plans are mostly handled on a singular scale as part of internal evaluations, that test the consistency of decisions that are made. In the period from the 1990s to the present day, the gain in importance of participatory mechanisms and developments in the evaluation stage of the process gave rise to the strategic planning approach (Camillus and Datta, 1991). However, with the importance of market-oriented movements in planning during this period (Ersoy, 2007), evaluations for “investment priority” began to prevail in urban planning. Thus, the evaluation took on a different dimension and the fact that it was an “intervention tool for the market economy”, which is one of the most important arguments in ensuring the legitimacy of planning (Ekiz and Somel, 2005, p. 2), resulted in the transformation of the plan, into an intervention tool, that mainly considers investment priorities. With this changing approach in planning, the plan hierarchy, which are diversified on the regional, sectoral, and local scale, and also appeal to different administrative levels, required a different type of evaluation; thus, external evaluations that address the consistency of decisions between plans have gained importance. “Nonetheless, these instruments do not exist in isolation, but as a part of a wider context, interacting with others.” (Bacău et al. 2020, p.1).

It can be said that the planning periods, described above, correspond to the general planning paradigms that Ataöv (2007, p. 141) grouped as “[n]ormative planning, rational planning, and participatory planning”, respectively. Subsequently, the strategic planning approach, which maintained its validity from the 1990s to the present day, is discussed, together with global trends (Ataöv, 2007). Accordingly, it is seen that “[c]ollectively, the different perspectives of and within plan evaluation have evolved considerably over the past fifty years during what is often

described as a shift from a positivist to constructivist paradigm” (Alexander, 2002 and Oliveira and Pinho 2010, as cited in Connell and Daoust-Filiatrault, 2018, p. 266) in addition to the current period where the global trends have an impact on the planning process (Ataöv, 2007). Due to the necessity of accountability for the plan decisions that were made in the period when communicative planning approaches have been on the agenda, the importance of the evaluation stage in planning increased the number of discussions on planning theory. However, in the Turkish planning system, for which “comprehensive planning approaches and principles form the bases of implementation” (Eraydın, 2017, p. 564), focus on final planning and implementation stages under rational comprehensive planning, has led to the evaluation of the plans being kept implicit. Therefore, even if planning is carried out by means of a holistic approach with its principles, problems such as irregular construction, building density, continuous intervention in natural areas, and disconnections between the decisions made and the implementation, are constantly on the agenda. Within the scope of eliminating this deficiency in the Turkish planning system, the theoretical background of the evaluation of spatial plans and their handling in practice are discussed in this study.

Theoretical and Practical Framework on the Evaluation of Plans

Since urban planning has become a part of the agenda, and especially covered by comprehensive planning approaches, the number of studies that are related to the quality of plans increased in the international literature. Berke and Godschalk (2009) stated that, at least sixteen studies related to plan quality were carried out in different regions of America, New Zealand, and the Netherlands, between 1997 and 2007. Five years after that work, Lyles and Stevens (2014, p. 439) conducted a descriptive and critical review of the methods in 47 peer-reviewed studies (articles, book chapter, etc.), published between 1994 and 2012, in which the unit of analysis was the plans and the provided quantitative plan quality data.

Building on ... distinction between the normative aspect of defining quality and the methodological aspect of generating replicable and reliable data, [the authors] ... address ... three questions ... First, why has there been so much growth in plan quality evaluation studies over the last twenty years? Second, are plan quality evaluation studies adequately relevant to practice and theoretically informative to merit such growth? The third question [they] ... seek to answer asks are the methods of plan content analysis being applied such that the data used to measure plan quality are replicable and reliable?

As a result, the need to develop/improve theories for plan quality was emphasised, by defining the benefits and limitations of the increase in such studies (Lyles and Stevens, 2014).

In particular, in the post-2010 period, studies concerning plan quality evaluations have focused on specific areas of planning (Öztürk

Saka and Erdoğan, 2021). These involve, but are not limited to, ecological systems (Brody et al. 2004), resilient cities (Pickett et al. 2004; Yaman Galantini, 2018), housing (Hoch, 2007), protection of open spaces and smart growth (Norton, 2008), climate change (Bassett and Shandas, 2010), and natural hazards (Baker et al. 2012). Moreover, items such as (9) industry, innovation and infrastructure, (10) reduced inequalities, (11) sustainable cities and communities, (12) responsible consumption and production, from among the 17 Sustainable Development Goals set by the UN under the 2030 Sustainable Development Agenda, may form some of the criteria that should be addressed as part of the evaluation of spatial plans, since they are directly related to cities (Hoşkara, 2020).

In the literature, there are both international and national (Turkish) studies that examine urban planning processes, and provide input to the formation of evaluation criteria.

International Literature Review

Alterman and Hill (1978) conducted an empirical study based on observational analysis of the implementation of the land use plan in the Krayot City of Israel. In the study, building permits were compared with detailed plans and plan notes. In the comparison made in the first stage, a 34% nonconformance was found between the outline plan and detailed plans involving plan changes, over an 11-year period. In the second stage, 25% incompatibility was found in the comparison of detailed plan notes with building permits.

Baer (1997) focused on the evaluation criteria proposed in the literature, and their relationship to various stages of planning, in the context of that author's criticism that few criteria were developed to evaluate the overall plan quality of the planning profession. The criteria from the literature are grouped into eight main groups as "adequacy of context", "rational model considerations", "procedural validity", "adequacy of scope", "guidance for implementation", "approach, data, and methodology", "quality of communication", and "plan format" (Baer, 1997, p. 338-339). Under these groups, sixty criteria were determined to introduce a theoretical framework, yet no sample plans were evaluated on the basis of this framework.

In the study by Laurian et al. (2004), on the degree to which land-use plans are implemented, the conformance-based Plan Implementation Evaluation (PIE) method is proposed for the evaluation of plans and permits. This method is based on the evaluation of the links between policies and implementations for improving the spatial quality. In the area case study the stormwater management and the impact of development on urban amenities in New Zealand's six land use plans of the same scale is examined. These plans were evaluated through the PIE process, defined in five steps. An important contribution of the method is to propose general indicators in measuring the two aspects of the implementation of the plan, including the implementation breadth (the

variety of policies implemented during the permitting process), and its depth (the ratio of policies implemented using the techniques specified in the plan in each permission document). As a result, it was determined that the implementation of approved plans, generally remained low (measured in percentage), that there were big differences between the plan objectives and its decisions, and that the plans did not achieve high scores from width and depth measurements, at any stage (Laurian et al. 2004).

Prompted by a lack of studies on the determination of the importance of planning in urban development, Tian and Shen (2007) conducted an empirical study for China's largest provincial capital, Guangzhou, to compare its 2001 and 2007 existing land-uses with its 2001 land-use plan. In the study, which combines quantitative and qualitative analyses, and focuses on evaluating the implementation of the plan, the aim was to determine the impact of the plan on urban growth, and the content of the factors describing the implementation of the plan. Plans were examined in the context of each land-use, in terms of the defined indicators suggested; such as "type of accordancy", "type of unfulfillment", and "type of deviation". Evaluations of existing land-uses and the plan, indicated that the Guangzhou land-use plan has limited impacts on the development of the city, where both the level of conformance with the master plan was low, except for open and green areas, and the fact that the deviation rate from the 2001 land-use plan was as high as around 50%. In addition to this quantitative evaluation of the plan implementation, Tian and Shen (2007, p. 15) investigated the qualitative impacts of the plan. In explaining these, they utilised Alterman and Hill's (1978, p. 277-278) implementation trio of "political-institutional factors", "attributes of the plan", and "urban system factors". Thus, unlike Laurian et al. (2004), they included quantitative as well as qualitative evaluations.

In their 2008 study, Oliveira and Pinho aimed to design and demonstrate the applicability of a plan evaluation method in which the urban form is analysed, based on the need for an integrated development of evaluation and planning processes. In this context, while developing the method known as Plan-Process-Results (PPR), which allows quantitative and qualitative testing for the evaluation of urban plans, they identified its main elements as general and specific criteria, evaluation questions, evaluation techniques and resources. Application of the method to a plan requires the utilisation of components of the plan, including its physical characteristics, other plans made, newspapers, interviews with key actors of planning, and statistical data. As a result, despite challenges and complexities, it was observed that it was possible to systematically evaluate urban planning, and it was determined that the plan for Portugal's second largest city, Porto, was successfully completed and implemented (Oliveira and Pinho, 2008).

As a continuation of their 2008 work, Oliveira and Pinho focused on the Lisbon plan in their 2010 empirical study, using the PPR method, which they developed further. In their study, in which they demonstrated the

possibility of evaluation of plan implementations, they argued that a method for this purpose should be clearly related to the theory, and compatible with the evaluation concept. Accordingly, these authors (2010), who developed the method that was applied for Porto in 2008 by integrating rationality, conformance- and performance-based plan evaluation types, evaluated the Lisbon plans based on nine criteria. These are;

internal coherence needs and ambitions, interpretation of the planning system, public participation in plan-making and implementation, making, commitment of human and financial resources, effectiveness (plan results), and finally, direction for the urban development process (Oliveira and Pinho, 2010, p. 316).

Of these evaluations, rationality, that is “ex-ante evaluation”, covers the 1st, 2nd, 3rd, and 4th criteria, performance covers the 5th and 6th, and conformance evaluation covers the 7th, 8th, and 9th criteria. Compared to earlier approaches, the method, which focuses on physical decisions and planning implementations and allows the use of many quantitative-qualitative data, is such that it facilitates the plans to be examined in physical dimensions (with criteria such as urban form, housing, land use, environment, and transportation systems). As a result, it was determined that there was more than 50% conformance between the main proposals and the results of the Lisbon plans (Oliveira and Pinho, 2010).

Approaching the evaluation with the concept of reliability, Olazabal et al. (2019), tested the adequacy of de facto plans for their adaptation to climate change in four cities that were selected from developed and developing countries having a population of over one million (Copenhagen, Durban, Quito, and Vancouver) with the Adaptation Policy Credibility (APC) framework they developed (Olazabal et al. 2019). The framework is composed of seven components under two major areas. These are “Policy and Economic Credibility”, consisting of (1) Resources, (2) Reliability, and (3) Institutional, Public and Private Support, and “Scientific and Technical Credibility” consisting of (1) Usable Knowledge, (2) Monitoring, Evaluation and Reporting, and (3) Adaptive Management, in addition to the “Legitimacy” component, that is found in each of the major areas (Olazabal et al., 2019, p. 281).

Seventeen (17) indicators and 53 evaluation criteria were developed to address these components, and the sample tests in their contexts were found to be Quito, Vancouver, Copenhagen, and Durban as the best result rankings with Quito being the first. It has been concluded that the framework which succeeded in pilot regions is qualified and necessary to ensure good plan making for solving regional, national, and global problems, and to provide effective use of allocated funds. Based on a more extensive application of APC in their 2021 work, Olazabal and De Gopequi, selected only 59 of 136 largest port cities with in-force adaptation planning, and tested them at the local level for their adaptation planning documents (Olazabal and De Gopequi, 2021). In concluding their evaluation of large cities worldwide, they (2021, p. 10)

state that “[a]ccording to available documents, planned adaptation is overall not likely to be effectively implemented, nor does it show sufficient capacity to reduce vulnerability, increase resilience, or to sustain action in the long term.”

Bacău et al. (2020) emphasise the need to evaluate external consistency, based on the lack of studies addressing of how different types of plans for the same region interact. It was concluded that “most studies consider plans as single cases” and that studies covering multiple cases addressed the same types of plans from different areas and, however, that different plans for the same area were not examined (Bacău et al. 2020, p. 2).

These authors (2020), in examining external consistency, by using social network analysis (SNA) among ten plans for Bucharest, Romania, and the surrounding region, have based their examination on: “(1) references to other plans (direct and indirect), (2) issues, (3) general planning intentions and (4) spatialized planning intentions.” (Bacău et al. 2020, p. 2). The results show that the Bucharest plans were quite consistent in terms of problems and overall planning intentions, and “[t]he SNA allowed us to identify which plans are prestigious (i.e., the most referenced by others), which are central (i.e., the most connected in the networks) and which are peripheral to the networks” (Bacău et al., 2020, p. 9).

National (Turkish) Literature Review

Ayrancı (2013) aimed to propose a monitoring-evaluation-feedback model to strengthen the relationship between planning and urban development, and comparatively examined the monitoring-evaluation process of different types and scales of plans for London, Paris, and Berlin. “[I]t was seen that plans were constantly monitored and evaluated and revised periodically in all three cities ... it was concluded that the monitoring and evaluation stages show different characteristics depending on the management and planning system and the type and scale of the plans” (Ayrancı, 2013, p. 107). In their study, the planning process of Istanbul, Türkiye’s largest metropolitan city was also examined; and it was found that the city’s plans were implemented by making numerous changes after their preparation, although they were not evaluated by any means, and in fact there was no model for this in the Urban Planning Law No. 3194 or in the plan reports. In summary, regarding ignoring monitoring and evaluation in planning, it has been emphasised that problems exist, such as an absence of control of plan implementation, arising inconsistencies, and the breakdown of the plan hierarchy (Ayrancı, 2013).

The Istanbul Historical Peninsula Management Plan (HPMP) Monitoring and Evaluation Model, proposed in the study, was examined in two topics as the regulation of the units in the model and the definition of the process. The main indicators that were discussed for the monitoring of the plan were presented, together with the plan

objectives and 24 basic performance indicators that were established in the monitoring of 37 targets. The model for HPMP evaluation consists of three stages: preliminary, annual, and general evaluation. The model proposal was focused on the organisation of the units involved in the process, and the definition of the process, while the monitoring and evaluation results of the plans were not dealt with.

As a result, the author (2013, p. 198) pointed out that the criteria that will be determined for the monitoring and evaluation stages will vary according to the scale cities and their administrations, and they will also vary depending on the types and scales of the plans.

Considering deficiencies in the planning process and implementation stages, Gölbaşı (2014) compared Provincial Territorial Plan (PTP) of Istanbul with the planning experiences of metropolitan cities that have similarities to this city, with reference to the criteria for plan success. Using the PPR method of Oliveira and Pinho (2010), these authors (2014) compared the plans of İstanbul, London, New York, Lisbon, Montreal, and Paris, based on the 1st, 2nd, 4th, 5th, 7th, and 8th of those criteria, since it is not possible to apply all of the nine criteria in the method to the planning process, in the circumstances of Türkiye. The results obtained were scored and converted to quantitative data, but the way in which the scoring is undertaken was not detailed. As a result, it is stated that with reference to the criteria, İstanbul PTP always lags behind according to the city plans examined, and the spatial examination of İstanbul-specific results will provide a guideline for subsequent studies (Gölbaşı, 2014).

Zoral and Varol (2016) discussed the development of a Sustainability Assessment Approach (SAA), that can be implemented in two of the few strategic territorial plans (TPs) (Bursa 2020 1/100,000 scale TP (1998) and Bilecik 2030 1/100,000 scale (2008) TP) in Türkiye, using SAA, pre-conformity analysis, determination of the method (stakeholders, control list and scoring, Analytical Hierarchy Process (AHP), optimisation and economic models, etc.), determination of sustainability criteria and weighting of criteria by the selected AHP method. In the study, the SAA, which was created “with reference to the sustainability principles and criteria of the Czech Republic” (Zoral and Varol, 2016, p. 60) is used in plan comparison. Finally, Bursa’s PTP received a score of 1.26, while Bilecik’s PTP, which is ahead in participation and consensus, organizational and administrative capacity and environmental resources protection, scored 1.91.

Evaluation Stage in the Turkish Planning System

Türk and Erkan (2018, p. 219) state the importance of the necessary technical tools and methods for systematic evaluation of spatial plans as “it is risky to plan without the use of technical tools and methods developed to accurately evaluate objective reality and external factors as much as possible”. It can be stated that in the Turkish spatial planning process, the evaluation stage is managed in two ways, both of which are

in the form of controlling. The first involves the consideration of the principle of hierarchical integrity between the administrative units with different levels. The second involves the examination of plans by the commissions formed within the local administrations.

In areas where local authorities are authorised, the review of Land Use Plans (LUPs) and 1/1000 scale Implementation Plans (IPs) was carried out in the related commission of each municipality. According to Yıldız (1995, p. 129), the following principles are taken into account in these commissions:

- *Whether regional data is taken into account in the plan,*
- *The possibility of the plan with reference to natural, social, and economic data,*
- *Whether future needs can be met with existing urban infrastructure and technical equipment,*
- *Whether the land use, zoning and settlement arrangement is planned in accordance with the needs of the town,*
- *The possibility of realising a plan, and its capacity to be implemented,*
- *Whether the plan is organised in accordance with the technical norms determined by the regulation,*
- *Conformance with the principles of upper-scale plan decisions (territorial plan, land-use plan, etc.) in the organisation of the implementation plan.*

It is a fact that these principles remain inadequate and highly coarse for a wide-context regulative process such as planning.

In the simplest way, the proclamation of plans after their preparation is also a kind of public evaluation process. In addition, in accordance with the traditional planning approach in Türkiye, the determination of the success of the plans is only discussed in the context of the degree to which the plan decisions are implemented. However, there is no guarantee that even a fully implemented plan will or has achieved its goal (Demirci, 2004), because planning is a such as multidimensional and multi-stakeholder order area, in which the process must be operated in a holistic manner. The perspectives of the actors participating in the implementation stage may vary from the perspective of the decision makers during the planning process (Demirci, 2004). Therefore, it is important to evaluate the capacity of the plans to achieve the goals set by certain criteria. Evaluation discussed in a small number of national studies at the spatial level (see Ayrancı, 2013; Gölbaşı, 2014; Aşgın and Yaman, 2018, Değerli and Erbaş, 2021) are also used in many different areas such as the evaluation of participation activities of municipalities, workplace performances, and assessment of education policies (see Akpınar and Özer, 2008; Akman and İpek, 2019; Üngüren and Koç, 2015).

In the development of a framework for evaluation, the legal and administrative instruments of the relevant country (laws, regulations, specifications, etc.) should also be considered (Segura and Pedregal, 2017). Accordingly, there is no explanation in the effective Urban

Planning Law No. 3194, and in the Regulation on the Principles of Planning, which was effective for thirty years, that will improve the planning process or emphasise the evaluation stage under such titles as planning hierarchy, base maps and zoning plans, preparation and implementation of plans. Although the Regulation on the Principles of Planning was found to be important for its emphasis on the integrity of the plan and plan report, its involvement is no provision or guarantee that might be an input for a concrete evaluation criterion.

With the introduction of the Regulation on Spatial Planning (RoSP), that went into effect with Official Gazette dated 14.06.2014 and numbered 29030, the “Regulation on the Principles of Planning” (RoPP) and the “Regulation on Territorial Plans” were repealed. The RoSP, which brings various reforms to planning, includes explanations that improve the planning process, and emphasise the evaluation stage (Öztürk, 2018; Öztürk Saka and Erdoğan, 2021; 2022). In sum, the RoSP is the first regulation to indicate that plan reports should provide important information on planning, in detail, rather than by using general explanations. Moreover, the public facility standards of the previous regulation have been revised and especially facilities such as green area, education, and health services have been detailed.

The Technical Specifications of the Bank of Provinces for Urban Planning (TSBPFUP) support the evaluation stage in the planning process. Although it is important in this regard, it has no details that specify the objective criteria for this stage. However, it is important in emphasising the need to have plan, sheet-plan, report-plan, notes-plan, and legend in the final product, i.e., the settlement plans.

MATERIAL AND METHODOLOGY

The Case Area and Its Plans

Trabzon is not independent of the problems in the Turkish planning system, in terms of its planning practice, which is the central province and settlement of the Eastern Black Sea Region. Due to topographic thresholds, the value of scarce lands of their settlements, which are located in an adjacent form in a narrow band on the shore, is high. Trabzon Municipality became Trabzon Metropolitan Municipality in 2014, when law no. 6360 came into force, and the small municipalities were closed and connected to the relevant district municipalities. Currently, the area of the province, consisting of 19 municipalities (1 metropolitan and 18 district) and 692 neighbourhoods, is 4,671 km², (1/50,000 scale Trabzon PTP Report, 2017) and has a population of 811,901 as of 2020 (TURKSTAT ADNKS, 2020).

Trabzon has been selected as a case area because it has two important criteria that are determined in this study. These are: 1) there was a need to ensure that the city would have nearly all of the spatial plans defined in legislation from the upper-scale to the lower-scale, and 2) there would be plans for the neighbouring settlements.

In application of the GESP, upper-scale plan data involve: 1/100,000 scale, Ordu, Giresun, Gümüşhane, Trabzon, Rize, Artvin Territorial Plan (TP) and 1/50,000 scale Provincial Territorial Plan of Trabzon (PTP) and lower-scale plan data involve 1/5000 scale, Land Use Plans (LUPs), and 1/1000 scale, Implementation Plans (IPs), which were all made for revision and extension purposes for three neighbouring settlements. These earlier approved plans, which belong to currently closed town municipalities, are Akyazı neighbourhood in the District of Ortahisar, and Yıldızlı and Söğütlü neighbourhoods in the District of Akçaabat (Figure 1).

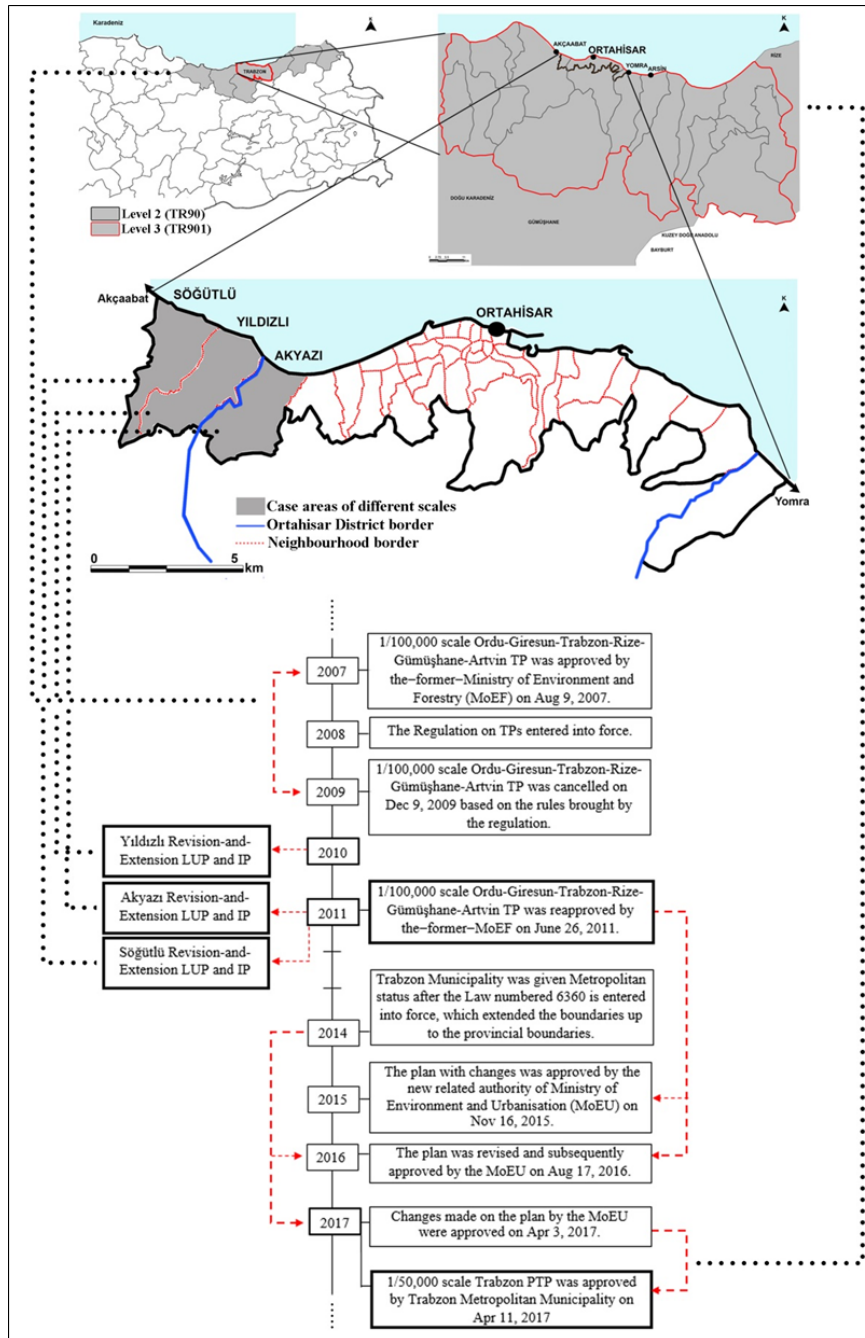


Figure 1. Location of upper- and lower-scale case areas. (Text reorganised from Öztürk, 2018, p. 57, maps from Öztürk, 2018, p. 51 and were originally prepared by using the 1/50,000 scale Trabzon Provincial Territorial Plan data, 2014.)

The following limitations for the consistency tests were identified for the plans of case areas.

- Within the scope of this study, the evaluation of plans using consistency tests was regarded as a technical work. Political and bureaucratic processes are not examined.

- Due to the limits defined for the study area boundaries, it was not possible to test 1/100,000 scale TP and 1/50,000 scale PTP for horizontal-external consistency with their similar-scale neighbouring plans.

- In the consistency tests of lower-scale plans, since new lower-scale plans that were prepared after their recent upper-scale plans were not finalised according to the objections made, the earlier revision and extension plans of the three settlements, mentioned above (before Trabzon became a metropolitan municipality in 2014), were used. In the following sections, for purposes of simplicity and flux, the wordings of “revision and extension” are not repeated in the names of those plans.

- Since a single plan report (PR) has been prepared without differentiating plan scales between 1/5000 scale LUP and 1/1000 scale IP for Akyazı settlement, this report was assumed to be the report for the IP. Accordingly, internal consistency tests for 1/5000 scale LUP for Akyazı was made by using plan sheets (PSs), plan notes (PNs), and plan legend (PL). For the same reason, in the horizontal-external consistency test of this settlement with 1/5000 scale LUPs and vertical-external consistency tests with both 1/50,000 scale PTP above and 1/1000 scale IP below, the same plan components (PSs, PNs, and PL) were evaluated.

- Similarly, horizontal- and vertical-external consistency tests for Yıldızlı were also limited to the use of PSs, PNs, and PL.

- For Söğütlü settlement, since PR was available only for the 1/1000 scale IP, in consistency tests, the report examination was possible only at this scale. Thus, for a similar reason, all the limitations stated for Akyazı were also valid for Söğütlü. In addition, since there were no PNs for 1/5000 scale Söğütlü LUP, it was not possible to examine this plan component for internal, horizontal- and vertical-external consistency tests applied at this scale.

Guideline for Evaluation of Spatial Plans

Within the scope of the GESP, the developed conformity-based approach (Baer, 1997; Faludi, 2000; Tong and Zhang, 2016) was taken into account in evaluating plans, input from the reviewed literature, and legislation, which were instrumental in establishing the criteria of the guideline (Table 1) (see Öztürk Saka and Erdoğan, 2022).

The common features of the analytical approaches described for the evaluation of plans, is that they focus on examining the implementation stages after their approval. In each of the related studies, it was seen that different methods were developed and used. What makes the GESP different from other studies, is the order of the stage in which it takes part in the planning process. In this respect, the GESP makes recommendations that are not on the implementation of the plans, but

Table 1. The way in which the reviews in the literature contributed to the proposed GESP; and their context (Taken from Öztürk Saka and Erdoğan (2022, p. 349) after making additions mentioned in the table footnote above, and some briefings in the utilisation part of the 3rd literature review, and briefing of some repeating conjunctions)

Reviews	What part is utilised	How it is utilised/Which additions were made		
		Internal consistency	External Consistency	
			Horizontal-external consistency	Vertical-external consistency
Literature	The first and the fourth criteria of Oliveira and Pinho (2008; 2010)	The first criterion (internal consistency) is directly used as basic test type .	The fourth criterion (external consistency) is detailed as horizontal-external consistency and used as basic test type .	The fourth criterion (external consistency) is detailed as vertical-external consistency and used as basic test type .
	Bacău et al. (2020)*	–	It complies with the basic test type , that is created for the need to address different types of plans decisions as a whole for the same area.	
	The qualitative evaluation criteria in the works of Ayrancı (2013) and Tian and Shen (2007)	Qualitative data type from Ayrancı (2013): Face-to-face communications, review of reports and documents, subjective observations Qualitative data type from Tian and Shen (2007): Political-institutional factors, characteristics of the plan, and factors of the urban system		
Legislation	The requirement for the integrity and consistency of the plan components (sheets-report-notes-legend)	The main and sub-criteria of “ consistency of plan decisions ” were created.	–	The main and sub-criteria of “ consistency of plan decisions ” were created.
	The factors that need to be undertaken, to detail the analyses and syntheses in plan reports, by emphasising the planning process	The main and sub-criteria of “ process consistency ” and “ information flow consistency ” were created, in which the transfer of planning processes was investigated.	–	The main and sub-criteria of “ process consistency ” were created, in which the transfer of planning processes was investigated.
	The need for differentiation of detail levels among different scale plans	–	–	The main and sub-criteria of “ plan language consistency ” were created.
Professional doctrines/tenets	–	–	The main and sub-criteria of “ consistency of plan decisions ” were created.	–
	–	–	The main and sub-criteria of “ process consistency ” and “ information flow consistency ” were created, in which the transfer of planning processes was investigated.	–
	The main and sub-criteria of “ methodology consistency ” were created.			

* Added as new resource that complies with the input of the previously proposed evaluation framework of GESP in Öztürk (2018) and Öztürk Saka and Erdoğan (2021).

rather on the determination of the issues that will need to be re-focused, with feedback, when the plan-making process is being completed, combined with plan evaluation prior to plan approval.

Qualitative evaluation criteria in the studies of Ayrancı (2013) and Tian and Shen (2007) were developed with quantitative data (population and public facility computations), and with these criteria of the guideline, the integrity of plan components was evaluated (Table 1).

The first and fourth of the nine criteria, determined by Oliveira and Pinho (2008, 2010) in their PPR method for plan evaluation, were used as the two basic tests of the GESP (Öztürk, 2018; Öztürk Saka and Erdoğan, 2021; 2022) (Table 1).

External consistency, which includes the need to address different types of plan decisions, as a whole for the same area, as highlighted by Bacău et al. (2020), is also complied with, in the input of one of these two main tests (Table 1). These tests, which are considered as internal and external consistency (further detailed as horizontally and vertically within it) aim to guide the criteria to be created, in order to evaluate the plans for each city and the region in Türkiye, within the context of the specified scale.

The guideline’s basic test for internal consistency addresses the examination of different scales and types of plans, in a “singular” manner within themselves; the horizontal-external consistency test addresses the holistic consideration of a plan, together with its same scale “neighbouring border” plans; and the vertical-external consistency test addresses holistic consideration of a plan together with its all upper- and lower-scale plans, in line with the principle of hierarchical integrity (Figure 2).

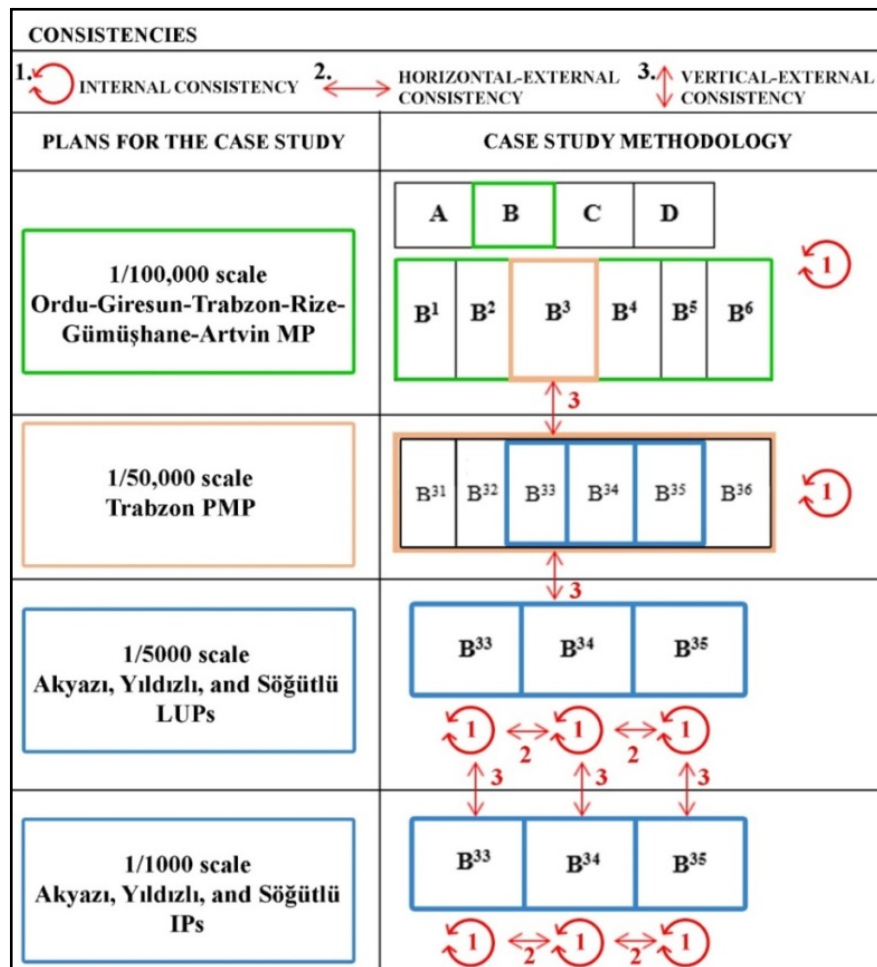


Figure 2. Visualisation of the application of the consistency tests on the case area plans (Reorganised from Öztürk, 2018, p. 9.)

With the criteria that make up the tests; no results are presented in terms of probability, error margin, or measure of consistency, but a

conclusion is made on the existence/non-existence of consistency within the context of the specified criteria. In this regard, it can be said that the proposed guideline produces deterministic results. Input from the legislation into the GESP is outlined below (Öztürk Saka and Erdoğan, 2021, p.1720-1721).

Although the contents of the Urban Planning Law No. 3194, the Regulation on the Principles of Planning (RoPP), and the Technical Specifications of the Bank of Provinces for Urban Planning (TSBPfUP) differ from general to particular, in all of them, it is clearly stated that the plan components (sheets-report-notes-legend) are integrated and must be consistent with each other. This resulted in the need for “internal consistency” in the plans, which is one of the basic tests of the GESP, and as a result, this basic test and the “consistency of plan decisions”, which is one of the main criteria of this test was developed within the GESP, and detailed with sub-criteria. In this context, the consistency of plan decisions can be investigated through the plan and plan reports, by means of the test based on the public facility standards in the RoPP and RoSP. RoSP highlights the planning process and specifies what is required for undertaking the analyses and syntheses to be detailed in the plan reports. Accordingly, the main criteria of “process consistency” and “information flow consistency” and their sub-criteria were introduced into GESP, in which the transfer of these processes was investigated. In addition, the provisions of this regulation for controlling the suitability of lower-scale plans to the upper-scale plans, formed the basis of the “vertical-external consistency” basic test in the GESP, in which the hierarchical integrity of the plans was investigated. One of the main criteria of this basic test, which is included in the legislation for the first time with RoSP, despite being a professional teaching, has been established in the MPDK as the main criteria of “plan language consistency”, and its sub-criteria in relation to the need for differentiation of the level of detail between scales.

From the literature and legislation review, no finding came out for the GESP that would directly constitute its input for the basic test of “horizontal-external consistency” and its criteria, which address the consistency of neighbouring plans. Nevertheless, such a requirement was extracted from the general rules of professional doctrines/tenets on the importance of ensuring the consistency with the neighbouring plans, as well as the consistency of the plans with the upper- [and lower-] scale plans. Similarly, for “methodology consistency”, which is one of the main criteria of all the basic tests of the GESP, no finding came out from the literature and legislation review, that will generate an input in this regard. On the other hand, this criterion is also based on the need to use the correct techniques and methods for population and employment projections, and to harmonise ... [their] results between the neighbouring plans [of nearby settlements] and upper- [and lower-] scale plans for the same settlement.

In the context of the GESP, the three-step consistency tests (i.e., internal, horizontal-external, and vertical-external) are applied for the components of the plan (i.e., plan sheets, plan report, plan notes, plan legend), and the same components for its upper- and/or lower-scale and neighbouring settlement(s) plan(s). The consistency tests mainly involve criteria that have been developed in relation to the “process”, “information flow”, “method”, “plan decisions”, and “plan language” (Figure 3).

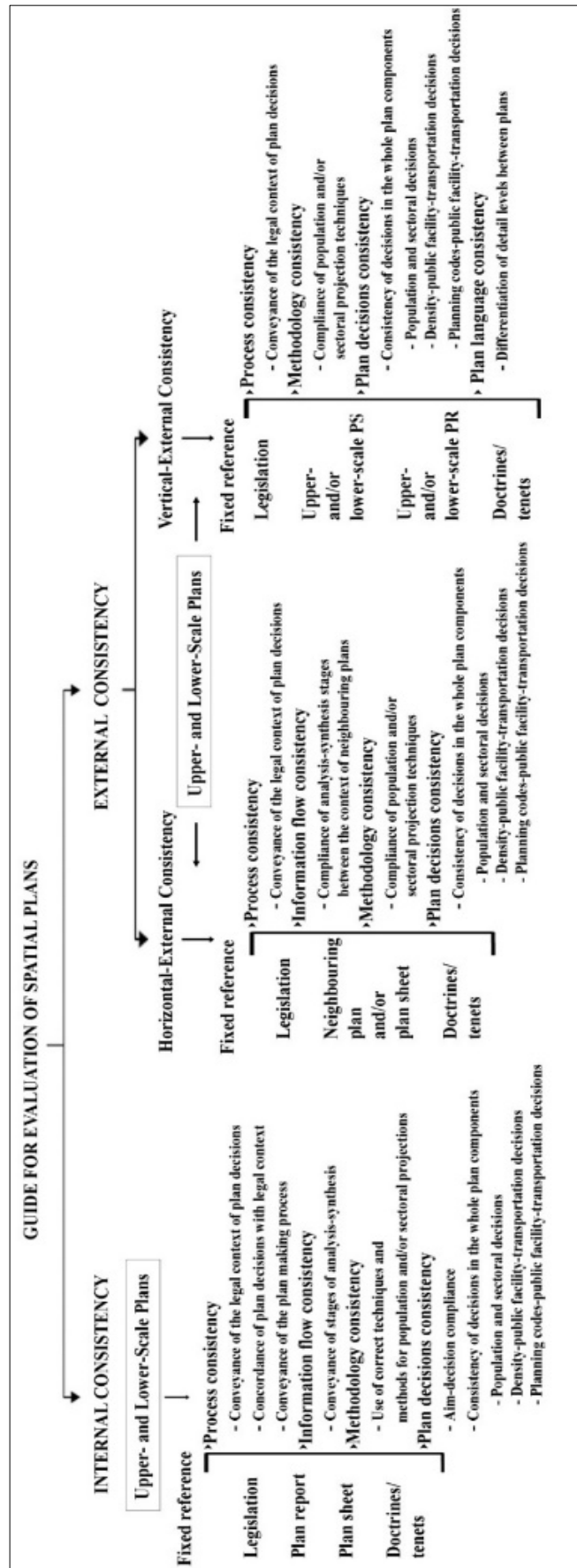


Figure 3. Criteria of GESP. (Öztürk, 2018, p. 49; Öztürk Saka and Erdoğan, 2021, p. 1725; Öztürk Saka and Erdoğan, 2022, p. 353)

RESULTS

Each of the consistency tests for the application of the GESP, are examined individually, in terms of the criteria given in Figure 4 (internal), Figure 6 (horizontal-external), and Figure 9 (vertical-external) in the related sub-sections from upper- to lower-scale planning, in line with planning hierarchy.



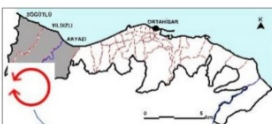
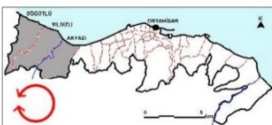
The results of this examination are summarised in Table 2. It was concluded that the plans of the case study displayed inconsistency, regarding their respective criteria in many evaluation tests. In particular, it is noteworthy that the upper-scale evaluation, i.e., the 1/100,000 scale TP, and the lower-scale evaluation 1/5000 scale LUPs displayed inconsistency for all the relevant internal criteria (Table 2). Similarly, as expected, the horizontal-external inconsistencies also dominate, in between the same scale plans and vertical-external inconsistencies, between different scale plans for almost all criteria evaluated (Table 2).

Table 1. The results of the application of GESP to the selected case area plans (NA: Not Applicable)

Basic Tests	Internal Consistency				External Consistency				
					Horizontal		Vertical		
Plans	1/100.000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP	1/50.000 scale Trabzon PTP	1/5000 scale Akyazi, Yıldızlı and Söğütli LUPs	1/1000 scale Akyazi, Yıldızlı and Söğütli IPs	1/5000 scale Akyazi, Yıldızlı and Söğütli LUPs	1/1000 scale Akyazi, Yıldızlı and Söğütli IPs	Between 1/100.000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP and 1/50.000 scale Trabzon PTP	Between 1/50.000 scale Trabzon PTP and 1/5000 scale Akyazi, Yıldızlı and Söğütli LUPs	Between 1/5000 scale Akyazi, Yıldızlı and Söğütli LUPs and 1/1000 scale Akyazi, Yıldızlı and Söğütli IPs
Main-criteria									
Process consistency	-	-	-	-	NA	NA	-	NA	NA
Information flow consistency	-	+	-	NA	-	-	NA	NA	NA
Plan decisions consistency	-	-	-	-	-	-	-	-	-
Methodology consistency	-	-	-	NA	NA	NA	NA	-	NA
Plan language consistency	NA	NA	NA	NA	NA	NA	NA	NA	+

Internal Consistency Tests

Internal consistency tests were applied to different scales and types of plans that involve 1/100,000 scale TP, 1/50,000 scale PTP, and 1/5000 scale Akyazi, Yıldızlı, and Söğütli LUPs and their IPs, which were all made for the purposes of revision and extension under the aforementioned limitations (Figure 4).

Plans	Tests	Fixed reference (**)	Examined components (**)
1/100,000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP 	Process consistency Conveyance of the legal context of plan decisions Concordance of plan decisions with legal context Conveyance of the plan making process	Legislation Legislation Legislation	PR PR PR
	Information flow consistency Conveyance of stages of analysis-synthesis	Legislation- Doctrines/ tenets	PR
	Methodology consistency Use of correct techniques and methods for population and/or sectoral projections	Doctrines/ tenets	PR
	Plan decisions consistency Aim-decision compliance Population and sectoral decisions	PR-PS PR-PS	PR-PS-PN-PL PR-PS-PN-PL
1/50,000 scale Trabzon PTP 	Process consistency Conveyance of the legal context of plan decisions Concordance of plan decisions with legal context Conveyance of the plan making process	Legislation Legislation Legislation	PR PR PR
	Information flow consistency Conveyance of stages of analysis-synthesis	Legislation- Doctrines/ tenets	PR
	Methodology consistency Use of correct techniques and methods for population and/or sectoral projections	Doctrines/ tenets	PR
	Plan decisions consistency Aim-decision compliance Population and sectoral decisions	PR-PS PR-PS	PR-PS-PN-PL PR-PS-PN-PL
1/5000 scale Akyazi, Yıldızlı, and Söğütü LUPs (*) 	Process consistency Concordance of plan decisions with legal context Conveyance of the plan making process	Legislation Legislation	PR PR
	Information flow consistency Conveyance of stages of analysis-synthesis	Legislation- Doctrines/ tenets	PR
	Methodology consistency Use of correct techniques and methods for population and/or sectoral projections	Doctrines/ tenets	PR
	Plan decisions consistency Density-public facility-transportation decisions	PR-PS	PR-PS-PN-PL
1/1000 scale Akyazi, Yıldızlı, and Söğütü IPs 	Process consistency Concordance of plan decisions with legal context Conveyance of the plan making process	Legislation Legislation	PR PR
	Plan decisions consistency Planning codes-public facility-transportation decisions	PR-PS	PR-PS-PN-PL

(*) Based on the identified limitations of the study, having all the plan components only at the 1/5000 scale LUP, Yıldızlı settlement was examined at this scale. However, for a complete and detailed sample expansion for the scheme seen in Figure 3, here the names of those plans are also included in this table.
 (**) Plan Components: PS: Plan Sheet, PR: Plan Report, PN: Plan Notes, PL: Plan Legend

Figure 4. Internal consistency tests of GESP within the context of the spatial plans for the study area. (Reorganized from Öztürk, 2018, pp. 54-55.)

1/100,000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP

In order to exemplify application of internal consistency test to a 1/100,000 scale plan, tests for the main criteria of process, information flow, methodology and plan decision consistencies and their sub-criteria were carried out.

In process consistency, it was observed that the legal context of plan decisions is not conveyed and the process of plan making is not included in the PR. In information flow consistency, it was identified that the necessary analyses and syntheses were not made in preparation of the plan report, and even if they had been made, they were not included in the report. When methodology consistency is examined in terms of the use of correct techniques and methods for population and/or sectoral projections; it was observed that techniques other than simple extrapolation methods were not used in determining the future population and the results found were averaged, when they should not be. Furthermore, only the total value of five districts could achieve almost the projection value determined by TSI for the whole province of Trabzon in year 2025, a period that is very close to the projection year of the plan. The reasons for this are non-questioning of the population capacities that were determined for the former town municipalities in the TP and ignorance of the necessary details in the projection

computations. Similarly, the sectoral projections at the provincial and regional levels were left incomplete in the PR. Hence, it was seen that it was not possible to determine what this upper-scale plan forecasted for the region. Finally, with respect to plan decisions consistency, when aim-decision conformance was examined, it was found that the population projection values, sectoral and planning decisions were not compatible with the plan's aim. The main criterion on population and sectoral decisions requires that population forecasts must include future employment figures. To get those figures, employment capacities of sectoral decisions that involve land-uses such as organised industrial zones and airports need to be given. In this respect, in the plan it was observed that those capacities for the province or region that would be brought mainly by the land-uses for industry and tourism were not given and thus the forecasts were not based on concrete data. In addition, it was found that the decisions made for industrial areas and the protection of water basins were not covered on the PSs, but were limited to the explanations made in the PR, and there were no data and plan decisions in PR for tourism. In this context, in PSs, it was seen that only the areas for tourism centres were shown, but without any explanation of how those borders were drawn and without any specification of the required details for those decisions in the PNs, which were also left incomplete in the PL.

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1/50,000 scale Trabzon PTP

The example for the application of the internal consistency test to a 1/50,000 scale plan, similar to 1/100,000 scale tests for the main criteria of process, information flow, methodology and plan decision consistencies and their sub-criteria were carried out. In the introduction section of the PR for the plan revision made in year 2017, where scale, scope and legal grounds of the plan are stated, it is seen that the legal basis was taken as the Regulation on Territorial Plans dated 2008 that has ceases to have effect by way of the Regulation on Spatial Plan Making dated 2014. As a result of reference to a legal context that is not in effect, an inconsistency was found in the examination of this upper-scale plan in terms of process consistency. In addition, even if such a legal context would be up-to-date, it was observed that the concordance of the plan decisions with respect to legal context and the planning process is not included in PR. Regarding the information flow consistency, it was observed that the analyses and syntheses were conveyed using up-to-date data in PR. In terms of methodology, consistency in PR, including the use of correct techniques and methods for population and/or sectoral projections, it was seen that the projection year of the plan was taken as 2040, which turned out to be 2026 in its upper-scale 1/100,000 scale TP. In PR, where there is no explanation for this difference, it was also found that there was no computation for the rural population, and that sectoral and spatial decisions are not included in the computations for urban population and

the lower-scale plans were used without questioning the population capacities. Moreover, the computation for the future population was determined by taking average of the results of extrapolation methods, but they should not have been. Similarly, when plan decisions consistency is examined in terms of aim-decision conformance, it was found that the aim of the plan is not compatible with the computed population values, sectoral and planning decisions. When plan decisions consistency is examined with respect to population and sectoral decisions, it was seen, as in the upper-scale plan, that employment capacities for the province or region that would be brought mainly by the land-uses for industry and tourism were not given and thus the population forecasts were not based on concrete data. In terms of plan decisions, it is further observed that the decisions on sub-zoning, transportation and tourism were not drawn on the plan, the required details were not given in PNs, and there are also inadequacies in the PL.

1/5000 scale Akyazı, Yıldızlı, and Söğütlü LUPs

Due to the limitations of the study regarding the data, in the application of internal consistency tests applied to 1/5000 scale plans, examination of 1/5000 scale LUPs of Akyazı and Söğütlü settlements were limited to PSs, PNs and PLs.

In the examinations made on Akyazı 1/5000 scale LUP, not being included in PNs, deficiencies were found in for plan decisions on public facilities and transportation while the integrity of PP and PL was ensured. As for the examination made on Söğütlü 1/5000 scale LUP, it was observed that the plan did not have PNs. Based on these shortcomings, it was not possible to discuss the internal consistency of a plan. The internal consistency test was applied on 1/5000 scale LUP of Yıldızlı settlement based on the criteria shown in Figure 5. With a population size of 11,640, obtained by using the average of the results of extrapolation techniques given in PR and population size of 15,250 accepted as a result of forecasts made, were also calculated from the plan by using density decisions that were specified in the report for testing of related internal consistency, which was found to be 14,480. Since all the required analyses for settlement were not made in detail, the plan could not go beyond meeting the minimum standards for public facility decisions. In terms of the accepted standards for public facility areas in the plan presented in the related table of its report, which takes the year 2030 as a basis, it was observed that the sizes of those areas defined in the report were found to be similar with those that were calculated using the plan, yet both remained below the standards for almost all types of public facilities.

In the analysis of internal consistency in terms of transportation, particular focus is given to road widths. As seen in Figure 5, varying widths of the same road on the plan affected the result of the test. In addition to a lack of explanations on the pedestrian roads in the PR, the

PNs do not contain any explanation of the transport connections described in the PR and specified in the PL.

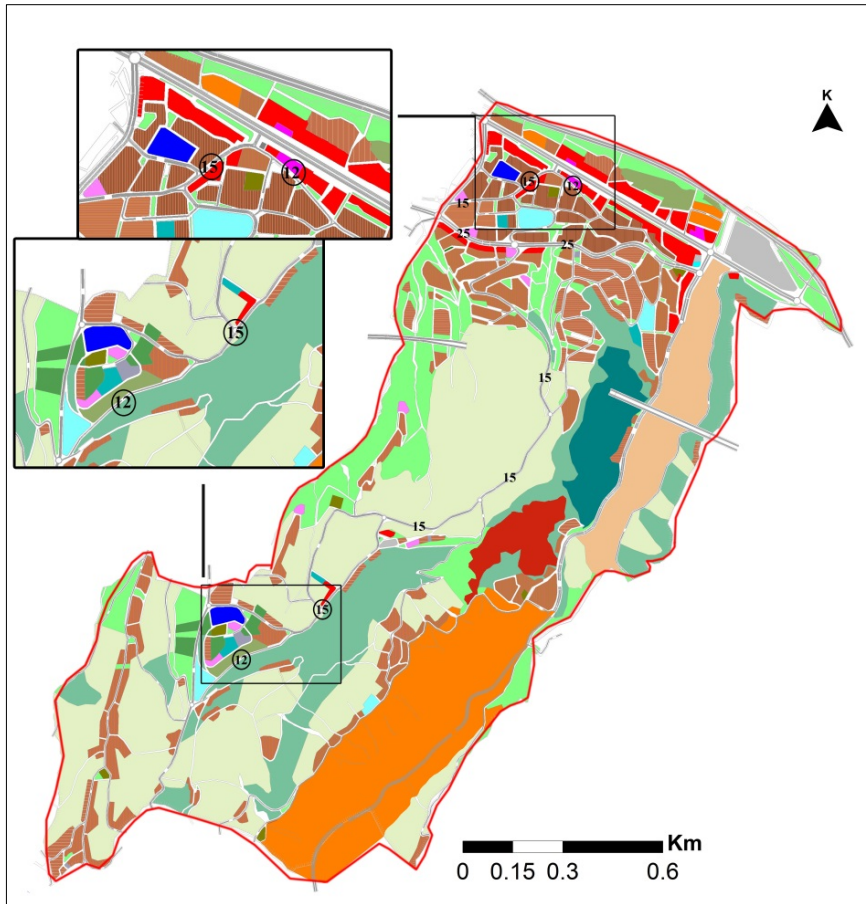


Figure 5. Example of the change of the vehicle road in Yıldızlı LUP. (Öztürk, 2018, p. 69, maps originally prepared by using 1/5000 scale Yıldızlı LUP, 2010.)

1/1000 scale Akyazı, Yıldızlı, and Söğütlü IPs



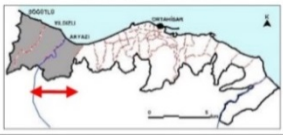
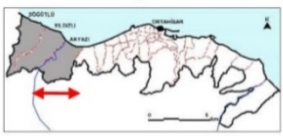
Internal consistency tests were applied on the 1/1000 scale IP of Akyazı, Yıldızlı, and Söğütlü based on the criteria seen in Figure 4. Firstly, the population capacity was calculated using the planning codes seen in the PSs for comparing and testing the size of the population specified in the PR. In examining the public facilities, plan components were considered as a whole. Areas of public facilities were measured using the PSs and they were compared with those given in the PR. In the context of internal consistency regarding transportation connections, the focus was given to road widths and, similar to 1/5000 scale Yıldızlı LUP, the varying widths of the same road on the plan affected the result of the test.

In the examination made to exemplify the application of the internal consistency test on a 1/1000 scale plan in terms of process consistency, it was observed that in all of the three plans there was no conveyance of the plan making process in respective PRs. For plan decisions consistency criterion regarding planning codes, differences were found between those stated in PRs of all the three plans and their populations calculated from PSs. Under this criterion, in terms of public facilities, it was observed that for Akyazı some public facilities were not found in PR despite their presence in PSs and that detailed explanations concerning

public facility areas seen in PSs were not presented in detail in PNs. Furthermore, regarding public facilities, it was observed that there was no integrity among PSs, PR, PNs, and PL in Yıldızlı and Söğütlü plans. Concerning transportation decisions, in Akyazı and Yıldızlı plans, it was found that the widths of vehicle roads are different in their respective PSs and PRs, the pedestrian roads were not explained in their PRs, there was no information on transportation in their PNs and the pedestrian roads were not shown in their PLs. Additionally, in the PR of the Söğütlü plan, it was seen that there was no information on widths of vehicle roads, and also there was no explanation of the pedestrian roads, whereas they were shown in the PL.

Horizontal-External Consistency Tests

As the second basic test of GESP, horizontal-external consistency tests, due to the scope of the study, were not applied to 1/100,000 scale TP and to 1/50,000 scale PTP (i.e. the first two parts in Figure 6) and due to the above constraints were partially applied to 1/5000 scale plans (i.e. the third part in Figure 7). However, the guideline containing the horizontal-external consistency criteria seen in the fourth part of Figure 7, were applied with no problem to the 1/1000 scale IPs of the three neighbouring settlements (Akyazı, Yıldız and Söğütlü).

Plans	Tests	Fixed reference (**)	Examined components (**)
Between 1/100,000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP and the neighbouring TPs(*) 	Process consistency Conveyance of the legal context of plan decisions	Legislation	PR
	Information flow consistency Compliance of analysis-synthesis stages between the context of neighbouring plans	Legislation-Doctrines/tenets	PR-PS
	Methodology consistency Compliance of population and/or sectoral projection techniques	Doctrines/tenets	PR
	Plan decisions consistency Population and sectoral decisions	Neighbouring PS-PR	PR-PS-PN-PL
Between 1/50,000 scale Trabzon PTP and the neighbouring 1/50,000 scale PTPs(*) 	Process consistency Conveyance of the legal context of plan decisions	Legislation	PR
	Information flow consistency Compliance of analysis-synthesis stages between the context of neighbouring plans	Legislation-Doctrines/tenets	PR-PS
	Methodology consistency Compliance of population and/or sectoral projection techniques	Doctrines/tenets	PR
	Plan decisions consistency Population and sectoral decisions	Neighbouring PS-PR	PR-PS-PN-PL
Between 1/5000 scale Akyazı, Yıldızlı, and Söğütlü LUPs 	Information flow consistency Compliance of analysis-synthesis stages between the context of neighbouring plans	Legislation-Doctrines/tenets	PS
	Plan decisions consistency Compliance of population density-public facility-transportation decisions between the context of plan components	Neighbouring PS-PR	PR-PS
Between 1/1000 scale Akyazı, Yıldızlı, and Söğütlü IPs 	Information flow consistency Compliance of analysis-synthesis stages between the context of neighbouring plans	Legislation-Doctrines/tenets	PR-PS
	Plan decisions consistency Compliance of planning codes-public facility-transportation decisions between the context of plan components	Neighbouring PS-PR	PR-PS-PN

(*) Based on the identified scope of the study, horizontal-external consistency tests were not applied to the two upper-scale plans.
 (**) Plan Components: PS: Plan Sheet, PR: Plan Report, PN: Plan Notes, PL: Plan Legend

Figure 6. Horizontal-external consistency tests of GESP within the context of the spatial plans for the study area. (Reorganized from Öztürk, 2018, p. 85.)

Between 1/5000 scale Akyazı, Yıldızlı, and Söğütlü LUPs and their 1/1000 scale IPs

Based on the related planning legislation in Türkiye, the principle of hierarchical integrity is directly related to external consistencies in terms of vertical tests. Horizontal tests also need to comply with this scale ordering in between the same scale plans. In other words, these latter consistency tests should first be examined in the context of ordering of 1/5000 scale LUPs and 1/1000 scale IPs that should be prepared according to LUPs. However, since the planning process especially focuses on the implementation dimension of the plans in the last decades, in general 1/1000 scale IPs are prepared first and then based on the legislative requirements, their upper-level 1/5000 scale LUPs are mainly produced, from 1/1000 scale plans by using information technologies. For this reason, in a sense, plans are similar in each of the other's enlargement and reduction, which certainly should not be the case. Although the horizontal examinations in two scales need to be done separately, since it was observed that the LUPs of the three settlements were prepared in this manner, in order not to fall into repletion, the horizontal consistency tests of these two scales are discussed together.

Planning decisions are expected to form a holistic vision/perspective for settlements having similar economic, social and demographic characteristics in the same geography. In this context, examinations for horizontal-external consistency tests of neighbouring settlements of Akyazı and Söğütlü at 1/5000 scale were limited to PP, PH and PL due to their limitations for PRs (Figure 6). However, horizontal-external consistencies of all the components of 1/1000 scale Akyazı, Yıldızlı, and Söğütlü IPs were tested for the evaluation criteria given in Figure 6.

In order to perform this test, firstly, it is required to compile and tabulate the information that will facilitate the evaluation of plans. The examinations made using the information given in Figure 8 that was created for this purpose and over the plan showed that the plan-making years of the three settlements are very close to each other. Differences in planning teams have also changed the features that are taken into account for plan preparation in the planning process. In the examinations made for 1/5000 scale density decisions on PSs, it was determined that these decisions are not compatible between the neighbouring settlements of Yıldızlı and Söğütlü. While low density residential development decisions were given as 90 people per hectare, the low density in existing settlements is given as 107 people per hectare. Nevertheless, the corresponding former value in Söğütlü is found to be 50-100 people per hectare and also found to be not given for the latter value (Figure 7). When scaled down to 1/1000, the differences in planning teams changed the features that were taken into consideration, not only in the planning process, but also the plans and their reports, such that there is a notable difference in household sizes between the two plans (Akyazı and Söğütlü) that were made in the same

period and approved in the same year. Moreover, the explanations given for population forecasts in the reports revealed that there is a difference of 26,024 (84%) between the computed population projection and the population forecast for Akyazı, while in its immediate neighbour (Yıldızlı) this difference is 3,610 (23%) and 23,772 (59%) in Söğütlü (the neighbour of Yıldızlı). In addition to the problem of deviances of forecasts from the projections, the level of those differences between the neighbouring settlements, without disclosing the rationale behind them and without considering the nearby settlement, add further complications to the case.

Features	Söğütlü ^(*)	Yıldızlı	Akyazı	
Plan Type: Revision-and-Extension Plans 	LUP			
	IP			
Plan Approval Year	2011	2010	2011	
Plan Projection Year	2030-2035	2030	2030	
Planning area (ha)				
LUP	481	612	800	
IP	481	612	800	
Household size	4.5	4.5	3	
Average flat size	150 m ²	110 m ²	150 m ²	
Density decisions (people/ha) in residential areas	Development	Existing	Development	Existing
Low	50-100	-	90	107
Medium	150-200	150-200	200	200
High	250-300	250-300	287	287
Population				
In the report				
Computed	16,228	11,640	4,958	
Forecasted as in LUP and/or IP	40,000	15,250	31,000	
Calculated from LUP	45,867	14,480	-	
Calculated from IP	79,747	35,830	40,115	
(*) Since the density decisions on residential areas in 1/5000 scale Söğütlü LUP were not given in integer numbers but in ranges, the highest value of this range was used in the population calculation. Source: Reorganised from XXX, 2018, pp. 88-92, original data source for planning area, plan approval year, plan projection year, average flat size, household size, and populations forecasts of the plans are PRs of 1/5000 and/or 1/1000 scale LUP and/or IP, i.e. Akyazı report(s), 2011; Yıldızlı report(s), 2010; Söğütlü report(s), 2011); and the calculated populations values obtained from the calculations made using related PSs.				

Figure 7. Features of 1/5000 scale LUPs and 1/1000 scale IPs in relation to horizontal-external consistency test. (Reorganised from Öztürk, 2018, pp. 88-92, original data source for planning area, plan approval year, plan projection year, average flat size, household size, and populations forecasts of the plans are PRs of 1/5000 and/or 1/1000 scale LUP and/or IP, i.e. Akyazı report(s), 2011; Yıldızlı report(s), 2010; Söğütlü report(s), 2011); and the calculated populations values obtained from the calculations made using related PSs.)

The reasons for population forecasts for the three settlements are indicated in the PRs of 1/5000 and/or 1/1000 scale plans. In these reasons, it needs to be explained how the decisions given within their own borders will actually be affecting the plans for their neighbouring settlements. However, in the final population decisions, such differentiations emerged as if they were the settlements of three different and even non-neighbouring provinces.

In examining 1/5000 scale LUPs in terms of the decisions for public facilities and transportation, it is expected that plan decisions for neighbouring settlements will affect each other and, therefore, those

decisions should have been given after undertaking the related work for analyses and syntheses. However, in the examination made on PSs, it was observed that administrative boundaries are taken into account for public facility locations and there are inconsistencies on intersecting boundaries, for example, while one side of the boundary is planned as park and agricultural area, the other side is planned as a medium density residential area. In addition, it was observed that analyses for public facilities in terms of accessibility, catchment distances, and served populations were not conducted, and related decisions for those facilities such as primary schools and healthcare are given in very close proximities at the intersections of administrative borders of neighbouring settlements (Figure 9). In short, as with the public facility decisions in the plans, which seemed to adhere to the administrative boundaries, the differentiations for the settlements were observed that would give the impression that they were located in three different and even non-neighbouring provinces. Similarly, in neighbouring settlements, while the width of the main vehicle roads between settlements should not change and their continuity should be ensured, it was seen that the main road that connects the neighbouring settlements of Söğütlü and Yıldızlı was planned as 25 m in width and that the same road passing through Akyazı in the continuation of Yıldızlı was planned as 30 m in width (Figure 8). PSs lack a holistic proposal regarding the pedestrian roads for all of the neighbouring settlements; those roads were suggested as a single road axis within the administrative boundaries of the plans and with a discontinuous road axis in between.

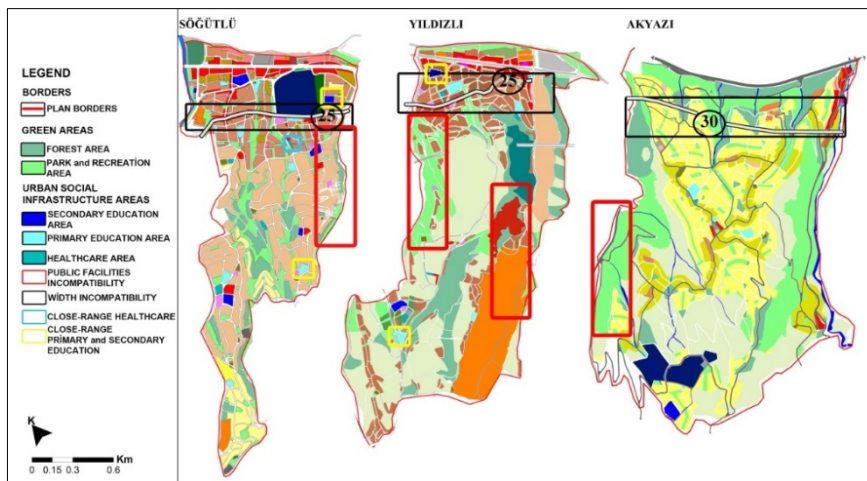


Figure 8. Comparison of planning decisions for Akyazı, Yıldızlı, and Söğütlü in the context of horizontal-external consistency test. (Öztürk, 2018, p. 89, maps originally prepared by using 1/5000 scale Akyazı (2011), Yıldızlı (2010), and Söğütlü (2011) LUPs.)

When 1/1000 scale IPs are examined in terms of public facility and transportation decisions, the inconsistencies indicated in 1/5000 scale LUPs were also found to be valid for the horizontal-external test at this scale. The examinations of 1/1000 scale PRs for public facilities in the three neighbouring settlements, despite the planning decisions such as sea-fill area, cruise port and sports complexes (including stadium), hospitals, and university campus, which can even affect regional decisions, it is seen that there are no explanations for these decisions in




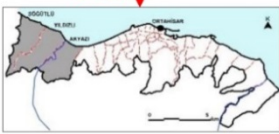

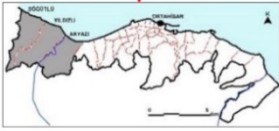
the PR of its immediate neighbour. Since there are no analysis and synthesis stages in PRs, it is implied that the plan decisions neither define the spatial potentials nor are they given in a holistic manner with reference to the decisions given for neighbouring settlements. In PRs, it was observed that there was no explanation about integrated/holistic handling of transportation connections in three neighbouring settlements and that there were even no transportation decisions in the PR of Söğütlü. In addition, it was seen that there was no explanation of the relations between neighbouring settlements in terms of pedestrian roads and that transportation decisions were made only for vehicle transportation, as mentioned earlier.

In the examinations made on 1/1000 scale IPs, PRs and PNs were considered as a whole, and planning codes defined for the population were evaluated from PSs. From among the neighbouring settlements, variation in the planning codes of Söğütlü IP were found to be striking. Again, the highest Floor Area Ratio (FAR) in the same plan is considerably higher than those of other plans. In addition to examining the planning codes of the plans, the interventions made to population decisions through PNs were also evaluated. As a result of the support of PNs of these plans for the lot consolidation or hidden FAR, or in other terms bonus building volume, population and thus density increases were found to be highly likely in residential areas. Therefore, the necessary explanations for the population increases that emerged with those PNs were shaping the implementation after the plan approval and they were not included in the PRs, and the population differences already existing between those neighbouring settlements were further encouraged by these plan notes. These hidden FAR rights that were provided with PNs also affect the public facility decisions. In that, it is clear that the area standards for public facilities, which are currently low for the present populations of the settlements, will decrease even more for the projected population with these privileges.

Vertical-External Consistency Tests

Vertical-external consistency tests based on relationships between different scale and type plans were first applied between 1/100,000 scale TP and 1/50,000 scale PTP, then between 1/50,000 scale PTP and 1/5000 scale Akyazı, Yıldızlı, and Söğütlü LUPs, and finally between these LUPs and their 1/1000 scale IPs within the scope of the criteria in Figure 9. However, the problems experienced in practice, especially in terms of the principle of hierarchical integrity between LUPs and IPs, made it difficult to perform vertical-external consistency tests at the desired level. Moreover, regarding the dates of the used lower-scale plans of LUPs and IPs plans from within Trabzon, the necessity for upper-scale plan making, i.e. TP and then PTP, before the lower-scale plans did not become a valid process and thus, the level of consideration of the decisions from the upper scales could not have been examined in lower scales. Nevertheless, due to the necessity of the feedback stage in

planning, it is also an important step to evaluate to what extent lower-scale plan decisions, settlement potentials, and population projections are taken into account in upper-scale plan decisions.

Plans	Tests	Fixed reference (*)	Examined components (*)
Between 1/100,000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TP and 1/50,000 scale Trabzon PTP  1st test	Process consistency Conveyance of the legal context of plan decisions	Legislation	PR
	Plan decisions consistency Population and sectoral decisions	Upper- or lower-scale PS Upper- or lower-scale PR	PR-PS-PN-PL
Between 1/50,000 scale Trabzon PTP and 1/5000 scale Akyazi, Yıldızlı, and Söğütü LUPs  2nd test	Methodology consistency Compliance of population and/or sectoral projection techniques	Doctrines/tenets	PR
	Plan decisions consistency Population and sectoral decisions	Upper- or lower-scale PS	PR-PS-PN-PL
Between 1/5000 scale Akyazi, Yıldızlı, and Söğütü LUPs and 1/1000 scale Akyazi, Yıldızlı, and Söğütü IPs  3rd test	Plan decisions consistency Population decisions Compliance of population density-planning codes-public facility-transportation decisions between the contexts of plan components	Upper- or lower-scale PP	PR-PS-PN-PL
	Plan language consistency Differentiation of detail levels between plans	Doctrines/tenets	PP

(*) Plan Components: PS: Plan Sheet, PR: Plan Report, PN: Plan Notes, PL: Plan Legend

Figure 9. Vertical-external consistency tests of GESP within the context of spatial plans for the study area. (Reorganized from Öztürk, 2018, p. 86.)

Between 1/100,000 scale Ordu-Giresun-Trabzon-Rize-Gümüşhane-Artvin TPÇDP and 1/50,000 scale Trabzon PTP

In the application of the vertical-external consistency test between 1/100,000 and 1/50,000 scale plans, firstly, the main criterion of process consistency was considered. According to this criterion, it was found that the legal reference is not indicated in the PR of the 1/100,000 scale plan, and in the PR of 1/50,000 scale plan an outdated legal reference is made. In testing the main criterion of consistency of plan decisions, population and sectoral decisions were considered. In this

context, based on the examinations of PRs, at the 1/50,000 scale it was seen that no explanation of the difference in the projection year of this plan from that of the upper-scale plan, despite the fact that the plan note of the lower-scale plan required conformance with upper-scale decisions. Furthermore, the potentials specified for the settlements in PRs became important in the test of this sub-criterion. Similarly, in the application of the test, the plan decisions for settlements as given on PSs were also compared, and it was seen that the plans in two scales were incompatible in terms of various land uses. For example, it was observed that for the areas defined as forest area at the upper-scale, decisions such as areas for industry, urban amenities or agriculture were given and also that some of the land-use decisions such as irrigation areas at the upper-scale were not found at the lower-scale.

Between 1/50,000 scale Trabzon PTP and 1/5000 scale Akyazı, Yıldızlı, and Sögütlü LUPs

If an upper-scale plan is made after the lower-scale plans, it is expected that this upper-scale plan would not ignore the decisions that have been ongoing for years at the lower scales, and consequently would revise these plans if necessary. Hence, it has been stated in the PR and PNs of 1/50,000 scale Trabzon PTP that lower-scale plan decisions have been accepted. In this line, the vertical-external consistency tests that were carried out between 1/50,000 scale Trabzon PTP and 1/5000 scale LUPs, were limited to examinations of PSs, PNs, and PLs due to the limitations regarding the conformance of population and sectoral decisions and of 1/5000 scale LUP reports for Akyazı and Sögütlü settlements, as explained in Section 2.2.

In the application of this test of GESP, under the main criteria of methodology consistency, firstly, the conformance of population and/or sectoral projection techniques was tested. The projection period of the upper-scale plan is 25 years while this period turns out to be 20 years for the lower-scale plans. However, the reason for this differentiation, which also corresponds to separate years, is not specified in the PR of the upper-scale plan that was made later.

Consistency of plan decisions was tested by comparing population and sectoral decisions in terms of the components of upper- and lower-scale plans. The population and sectoral computations given in the PR of the 1/50,000 scale plan, which will affect the land-use decisions for industry and tourism in the province or region, are not based on concrete data, and the evaluation of the population and sectoral decisions from the lower-scale plans were not made in the PR. As for the sectoral decisions that were examined at the 1/5000 scale PSs, although the decision to plan the sea-fill area of Akyazı settlement as a cruise port and sports complexes (including stadium) that concern the whole city was a regional decision, and in PSs and PR of 1/50,000 scale Trabzon PTP it was expressed only in general terms and the effects of this decision on population, transportation and public facility distribution

were not explained. Moreover, even if this decision is stated as one of the reasons for the population increase in the PR of 1/1000 scale IP of Akyazı settlement, it is not included in 1/5000 scale LUP PSs. On 1/5000 scale PSs of Söğütlü and Yıldızlı settlements, day-trip tourism facilities are planned and thus, the tourism potential of these settlements is highlighted. However, there are no decisions directing the tourism potential of these settlements in lower-scale plans in 1/50,000 scale Trabzon PTP. Therefore, when plan decisions are examined on PSs, PNs and PLs, since the identified 1/5000 scale plan decisions for Akyazı and Yıldızlı have changed in 1/50,000 scale PTP, inconsistencies were observed between the same components of different scales, for example between PLs and PNs of two scales.

Between 1/5000 scale Akyazı, Yıldızlı, and Söğütlü LUPs and their 1/1000 scale Akyazı, Yıldızlı, and Söğütlü IPs

While in the third test of vertical-external consistency of GESP, the practical problem concerning the principle of hierarchical integrity is valid, and especially for these scales, those tests were still applied between 1/5000 scale LUPs of Akyazı, Yıldızlı, and Söğütlü and their 1/1000 scale IPs based on the criteria listed in Figure 10. Accordingly, differences in population decisions as part of plan decisions consistency were observed in the capacity calculations that were made with reference to hectare and FAR, respectively, between 1/5000 scale LUP and 1/1000 scale IP of each settlement. When the plans were examined in terms of public facility decisions, with respect to the sub-criterion of population density-planning codes-public facility-transportation decisions, it was seen that the sea-fill area in Akyazı, which is not found in 1/5000 scale LUP but rather in 1/1000 scale IP, was planned as a cruise port and sports complexes. In Yıldızlı, between 1/5000 scale LUP and 1/1000 scale IP some of the green, residential, and commercial areas were transformed, respectively, into afforestation, commercial, and tourism areas and similarly in Söğütlü, some parks and green areas in 1/5000 scale LUP were transformed into residential areas in 1/1000 scale IP. These changes for public facilities in the plan hierarchy caused differences between PSs, PNs, PLs in Akyazı and Yıldızlı, and between PSs and PLs in Söğütlü.

Similarly, as for transportation decisions, the widths of the vehicle roads differ between the two scales of Akyazı and Söğütlü plans. Furthermore, in Akyazı, the transportation decisions for the cruise port and the sports complexes seen in the 1/1000 scale IP are not found in the 1/5000 scale LUP.

Although the main criterion of plan language was examined in the vertical-external consistency of only these two scales and types of plans (Figure 10), it should also be considered between all scales and types of plans. The examination of this criterion is exemplified for Söğütlü settlement in terms of the required differentiation of detail levels between upper- and lower-scale plans. Accordingly, it was observed that between

1/5000 scale LUPs and their 1/1000 scale IPs, population density and planning codes were differentiated, and the required levels of detail for public facilities and roads were given in the lower-scale (Figure 10).

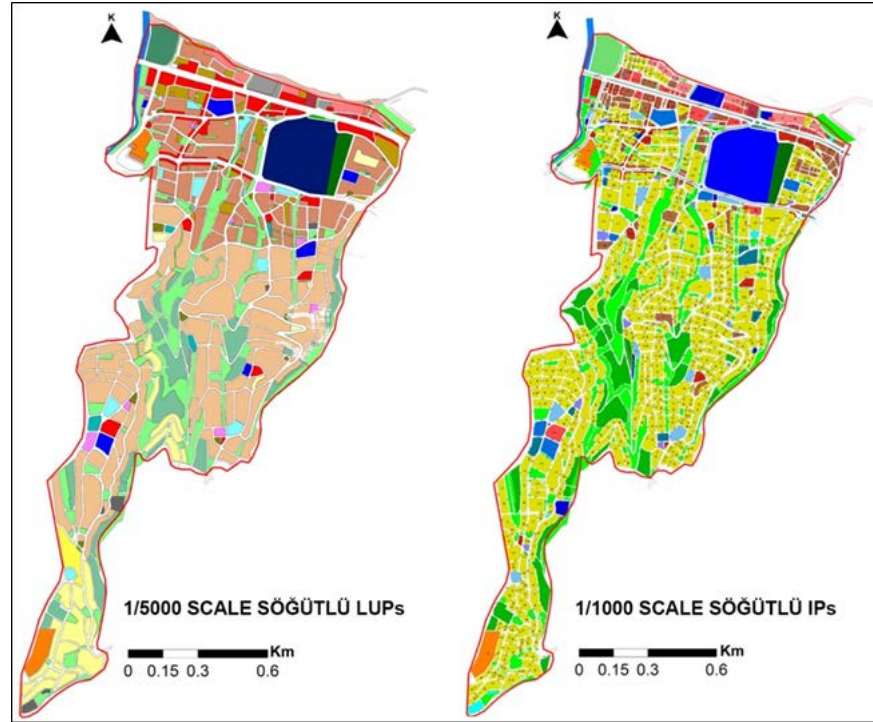


Figure 10. An example for the comparison of 1/5000 scale LUPs and their 1/1000 scale IPs in terms of plan language (For comparative purposes, the 1/1000 scale plan was reduced 5 times and reduced to the same size as the 1/5000 scale plan). (Simplified and reorganised from Öztürk, 2018, p. 104, maps originally prepared by using 1/5000 scale Söğütlü LUP and 1/1000 scale Söğütlü IP, 2011.)

DISCUSSION AND CONCLUSION

Based on the importance of the evaluation stage in the plan making process, in the present study, case area spatial plans were evaluated with concrete criteria using the Guideline for Evaluation of Spatial Plans (GESp), which was proposed in 2018 (Öztürk, 2018) and published in 2021 and 2022 (Öztürk Saka and Erdoğan, 2021; 2022).

In the first phase of this two-phase study, initially, with the focus on the evaluation of spatial plans, the research question of what the concepts of evaluation and consistency mean for spatial plans was reviewed. This phase was important for the creation of the theoretical/empirical/legal-administrative/professional background of this study. It has been mainly observed that the studies carried out for evaluation in both international and national (Turkish) studies have increased, and the evaluation phase in the spatial planning process in the legal-administrative aspect has become important, with the Regulation on Spatial Planning (RoSP). In the second phase of the study, where the GESp is applied to area plan cases, an examination of how internal, horizontal-, and vertical-external consistency tests can be performed in the ex-ante evaluation of spatial plans was made. This phase revealed how the consistency tests for spatial plans will/should be carried out regarding the application of the GESp.

Within the context of limitations that were identified at the beginning and the spatial requirements for the tests to be carried out (cities having spatial plans of different scales and types), the 1/50,000 scale plan of

the study area could partially pass the internal consistency tests, while its 1/100,000, 1/5000, and 1/1000 scale plans could not. It was also observed that none of the plans could pass horizontal- and vertical-external consistency tests.

In general, it is not even possible to state that all of the stages of the planning process, in so far as they appear in the current Turkish legislation, are carried out in a complete and required manner. In this regard, it can be stated that the settlements and the regions are in a continuous vicious circle, where feedback and corrective changes are not possible. It can be suggested that “internal” inconsistencies regarding upper scales, that are not being controlled and revised, reach the lower-scale plans in the “vertical” direction, and the resulting “internal” inconsistencies in the lower-scale plans and their “horizontal” inconsistencies with their neighbours, later, cumulatively affect upper-scale decisions negatively, and the cycle is perpetuated. It is considered that the use of the proposed guideline will most probably bring an end to this unchangeable situation for the settlements and their regions for approved plans, as presented in this study, and for the renewal process of those plans, or for new plan making for other settlements, before their approval.

The outputs of the present study can be used in future studies on this subject, after they are further developed, and when the limitations are taken into consideration. The proposed guideline in this study is applied to external consistencies of neighbouring settlements in a city and for its upper-scale plans, and in between those plans, in addition to internal consistencies of individual plans at different scales. However, the guideline can also be used for testing consistencies between plans of non-neighbouring settlements of the same city, or of the upper- and lower-scale plans of neighbouring settlements of two different cities, after its development.

As a limitation, the scope of this study did not address at which frequency, and by whom, the evaluation would be made, the actors’ dimension, and bureaucratic procedures. However, in future studies, answers should be sought for the question of “what should be done after plans are evaluated?”, which may eliminate this shortcoming. Having a multi-dimensional structured planning discipline, would certainly involve many actors. For this reason, after ex-ante evaluation of plans is undertaken, the sharing of results with all relevant stakeholders, the questioning of negative outcomes, and the revising of the plan, accordingly, will constitute another important stage following this evaluation, where consistencies are tested within the process. Supporting the plans by participation, after carrying out ex-ante evaluations, may become an effective solution for avoiding the fact of this evaluation remaining solely at the technical dimension.

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REFERENCES

- Akçay, A. (2009). Kamuda stratejik plan amaçlarının gerçekleştirilmesine yönelik değerlendirme ve denetim modeli, *TÜBAV Bilim Dergisi*, 2(1), 82-98.
- Akpınar, B., & Bayram, Ö. (2008). Genel ortaöğretimde yapılan öğretim planlarının okul müdürü ve öğretmen görüşlerine göre değerlendirilmesi, *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 5(10), 121-145.
- Akman, Ç., & İpek, E. (2019). Son dönemde yapılan değişiklikler çerçevesinde belediyelerde stratejik planlama süreci, *Uluslararası Yönetim Akademisi Dergisi*, 2(2), 359-373.
- Alexander, E. R., & Faludi, A. (1989). Planning and plan implementation: Notes on evaluation criteria, *Environment and Planning B Planning and Design*, 16(2), 127-140.
- Alexander, E. R. (2006). Evolution and status. Where is planning evaluation today and how did it get here? In: Alexander E.R. (Eds.). *Evaluation in Planning: Evolution and Prospects*. Aldershot: Ashgate, 3-16.
- Alterman, R., & Hill, E. (1978). Implementation of urban land use plans, *Journal of the American Institute of Planners*, 44(3), 274-285.
- Aşgın, S., & Yaman, K. (2018). Türkiye’de Bakanlıkların stratejik plan uygulamalarında mevcut yapı ve sürecin değerlendirilmesi, *International Journal of Academic Value Studies*, 4(19), 449-466.
- Ataöv, A. (2007). Planlamada sosyal bilimcinin değişen rolü: Toplumdan biri olmak, *Metu Journal of The Faculty of Architecture*, 24(1), 139-152.
- Ayrancı, İ. (2013). Metropoliten alanlarda planlama - kentsel gelişimin yönetimi ilişkisi ve bir izleme değerlendirme model önerisi [Relation of planning-urban development management in metropolitan areas and a monitoring and evaluation model proposal]. PhD Thesis, İstanbul Technical Universtiy, İstanbul.
- Bacău, S., Grădinar, S, R., & Hersperger, A, M. (2020). Spatial plans as relational data: Using social network analysis to assess consistency among Bucharest’s planning instruments, *Land Use Policy*, 92,104484.
- Baer, W. C. (1997). General plan evaluation criteria: An approach to making better plans, *Journal of the American Planning Association*, 63(3), 329-344.
- Baker, I, Peterson, A., Brown, G., & McAlpine, C. (2012). Local government response to the impacts of climate change: An evaluation of local climate adaptation plans, *Landscape and Urban Planning*, 107(2), 127-136.

- Bassett, E., & Shandas, V. (2010). Innovation and climate action planning: Perspectives from municipal plans, *Journal of the American Planning Association*, 76(4), 435-450.
- Bernstein, D. (2001). Local government measurement use to focus on performance and results, *Evaluation and Program Planning*, 24, 95-101.
- Berke, P., Backhurst, M., Day, M., Ericksen, N., Laurian, L., Crawford, J., & Dixon, J. (2006). What makes plan implementation successful? An evaluation of local plans and implementation practices in New Zealand, *Environment and Planning B: Planning and Design*, 33(4), 581-600.
- Berke, P., & Godschalk, D. (2009). Searching for the good plan: A meta-analysis of plan quality studies, *Journal of Planning Literature*, 23(3), 227-40.
- Brody, S. D., & Highfield, W. E. (2005). Does planning work? Testing the implementation of local environmental planning in Florida, *Journal of the American Planning Association*, 71(2), 159-175.
- Brody, S. D., Highfield, W., & Carrasco, V. (2004). Measuring the collective planning capabilities of local jurisdictions to manage ecological systems in Southern Florida, *Landscape and Urban Planning*, 69(1), 33-50.
- Bunnell, G., & Jepson Jr, E. J. (2011). The effect of mandated planning on plan quality: A fresh look at what makes "a good plan", *Journal of the American Planning Association*, 77(4), 338-353.
- Calkins, H. (1979). The planning monitor: An accountability theory of plan evaluation, *Environment and Planning A*, 11(7), 745-758.
- Camillus, J. C., & Datta, K. D. (1991). Managing strategic issues in a Turbulent Environment, *Long Range Planning*, 24(2), 67-74.
- Carmona, M., & Sieh, L. (2008). Performance measurement in planning - Towards a holistic view, *Environment and Planning C: Government and Policy*, 26(2), 428-454.
- Connell, D. J., & Daoust-Filiatrault, L.-A. (2018). Better than good: Three dimensions of plan quality, *Journal of Planning Education and Research*, 38(3), 265-272.
- Demirci, M. (2004). Kent planlamada uygulama anlayışına eleştirel bir yaklaşım: Dikmen Vadisi Projesi örneği [A Critical approach to the understanding of implementation in urban planning the case Dikmen valley project]. PhD Thesis, Ankara University, Social Sciences Institute, Ankara.
- Değerli, B., & Erbaş, A. E. (2021). Bütünleşik kıyı alanları planları ve mekansal planlama ilişkisi, İzmit Körfezi ve Bursa İli örneği üzerinden bir değerlendirme, *Journal of Awareness*, 6(1), 1-11.
- Ekiz, C., & Somel, A. (2005, Ocak). Türkiye'de planlama ve planlama anlayışının değişimi. Ankara Üniversitesi, Siyasi Bilimler Fakültesi, Geliştirme ve Toplum Araştırma Merkezi Tartışma Metinleri (SBF-GETA), 81, 1-38.
- <http://politics.ankara.edu.tr/dergi/tartisma/2005/anlayis-planlama.pdf>
- Eraydın, A. (2017). Planlamada yeni eğilimler. In Özdemir, S. S., Sarı, Özdemir, B. Ö., & Uzun, N (Eds). *Kent Planlama* (pp.561-581). İmge Kitapevi Yayınları, Ankara,

- Erdem, R., & Meşhur, Ç. (2005). İmar planları marifetiyle plansız gelişme. In *Planlamada Yeni Politikalar ve Stratejiler, Riskler ve Fırsatlar Bildiriler Kitabı*. 8 Kasım Dünya Şehircilik Günü 29.Kolokyumu, pp.339-344.
- Ersoy, M. (2005). Türkiye’de kent planlamasının güncel sorunları [Current problems of urban planning in Türkiye]. In *9. Ulusal Halk Sağlığı Kongresi Bildiri Özet Kitabı*, Ankara, Türkiye, 3-6 Kasım 2004, pp.137-144. Ankara: Hacettepe Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı.
- Ersoy, M. (2007). Planlama kuramına giriş [Introduction to planning theory]. In: Ersoy M. (Eds). *Kentsel Planlama Kuramları*. Ankara: İmge Yayınevi, pp.9-340.
- Goggin, M., Bowman, A., Lester, J., & O'Toole Jr, L. (1990). *Implementation theory and practice: Toward a third generation*. Glenview, IL: Scott, Foresman and Little, Brown, p.230.
- Gölbaşı, İ. (2014). Kentsel planlama deneyimlerinin plan başarı ölçütleri çerçevesinde karşılaştırılması ve değerlendirilmesi-İstanbul Örneği, *Planlama Dergisi*, 24(1), 18-25.
- Güredin, E. (2000). *Denetim, Beta Yayınları*. 10. Basım, İstanbul.
- Hoskara, Ş. (2020, Kasım). Dünya Şehircilik Günü Mesajı. 44. Dünya Şehircilik Günü Kolokyumunda sunulan bildiri, Ankara.
- Hoch, C. (2007). How plan mandates work: Affordable housing in Illinois, *Journal of the American planning Association*, 73(1), 86-99.
- Laurian, L., Day, M., Berke, P., Ericksen, N., Backhurst, M., Crawford, J., & Dixon, J. (2004). Evaluating plan implementation: A conformance-based methodology, *Journal of the American Planning Association*, 70(4), 471-480.
- Laurian, L., Crawford, J., Maxine, D., Kouwenhoven, P., Mason, G., Ericksen, N., & Beattiem, L. (2010). Evaluating the outcomes of plans: Theory, practice and methodology, *Environment and Planning B: Planning and Design*, 37(4), 740-757.
- Lichfield, N., & Prat, A. (1998). Linking ex-ante and ex-post evaluation in British Town Planning. In N. Lichfield, A. Barbanente, D. Borri, A. Khakee, & A. Prat (Eds.). *Evaluation in planning: Facing the challenge of complexity* (pp. 283-298). Dordrecht: Kluwer.
- Lichfield, N., Kettle, P., & Whitbread, M. (1975). The Urban and Regional Planning Series: Vol. 10. Evaluation in the Planning Process. Oxford, UK: Pergamon.
- Lyles, W., & Stevens, M. (2014). Plan quality evaluation 1994–2012: Growth and contributions, limitations, and new directions, *Journal of Planning Education and Research*, 34(4), 433-450.
- Mazmanian, D. A., & Sabatier, P. A. (1989). *Implementation and public policy*. With a new postscript, Lanham, MD: The University Press of America, Inc.
- Olazabal, M., Galarraga, I., Ford, J., Sainz De Murieta, E., & Lesnikowski, A. (2019). Are local climate adaptation policies credible? A conceptual and operational assessment framework, *International Journal of Urban Sustainable Development*, 11(3), 277-296.

- Norton, R. K. (2008). Using content analysis to evaluate local master plans and zoning codes, *Land Use Policy*, 25(3), 432-454.
- Olazabal, M., & De Gopegui, M.R. (2021). Adaptation planning in large cities is unlikely to be effective, *Landscape and Urban Planning*, 206, 103974.
- Oliveira, V., & Pinho, P. (2008). Evaluation in urban planning: From theory to practice. In: Pinho P. and Oliveira V. (Eds.). Proceedings of CITTA 1st Annual Conference on Planning Research: Evaluation in Planning. Porto, Portugal: The Research Center for Territory, Transports and Environment, Faculdade de Engenharia da Universidade do Porto, pp.31-49.
- Oliveira, V., & Pinho, P. (2010). Measuring success in planning: Developing and testing a methodology for planning evaluation, *The Town Planning Review*, 81(3), 307-332.
- Öztürk, M. (2018). Mekânsal planların değerlendirilmesinde tutarlılık tespiti üzerine bir yöntem önerisi: Trabzon örneği [A methodology proposal for detecting consistencies in the evaluation of spatial plans: Case of Trabzon], MsSci Thesis, Karadeniz Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Trabzon.
- Öztürk Saka, M., & Erdoğan, A. (2021). Plan tutarlılıklarının testi için bir yöntem önerisi: Mekânsal planlar değerlendirme kılavuzu, *DEÜ Sosyal Bilimler Enstitüsü Dergisi*, 23(4), 1709-1735.
- Öztürk Saka, M., & Erdoğan, A. (2022). Krizler İçin Plan mı (!)? Kriz Riskine Karşı Planlama mı? In: Akşit, A., Mercanoğlu, C., Alaydın, D., Çetinkaya, H., Yeni, G. & Karasüleymanoğlu, S. (Eds.). 8 Kasım Dünya Şehircilik Günü 44. Kolokyumu Bildiriler Kitabı. TMMOB Şehir Plancıları Odası Genel Merkezi, pp. 335-356.
- Pickett, S. T., Cadenasso, M. L., & Grove, J. M. (2004). Resilient cities: Meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms, *Landscape and Urban Planning*, 69(4), 369-384.
- Roeseler, W. G. (1982). *Successful American urban plans*. Lexington, MA: Lexington Books.
- Segura, S., & Pedregal, B. (2017). Monitoring and evaluation framework for spatial plans: A Spanish case study, *Sustainability*, 9(1706), 1-19.
- Soria, A. J., & Valenzuela, L. M. (2013). A method for the evaluation of metropolitan planning: Application to the context in Spain, *European Planning Studies*, 21(6), 944-966.
- Talen, E. (1996). After the plans: Methods to evaluate the implementation success of plans, *Journal of Planning Education and Research*, 16(1), 79-91.
- Tian, L., & Shen, T. (2007, September). Evaluation of plan implementation in the transitional China: A case of Guangzhou city master plan. 43rd ISOCARP Congress on Urban Dialogues: Co-productive ways to relate visioning and strategic urban projects konulu kongrede sunulan bildiri. Antwerp, Belgium.
- http://www.isocarp.net/Data/case_studies/928.pdf
- Türk, E., & Erkan, G. H. (2018). Gömleğin her düğmesini yanlış iliklemek: Artvin Yusufeli zorunlu yeniden yerleştirme sürecinin eleştirel incelemesi, *Planlama Dergisi*, 28(2), 218-235.

- Tong, Z., & Zhang, Q. (2016). Urban planning implementation evaluation: A multilevel fuzzy comprehensive evaluation approach, *The Open Civil Engineering Journal*, 10(1), 200-211.
- TÜİK, 2020, Adrese Dayalı Nüfus Kayıt Sistemi Sonuçları Verisi
- Üngüren, E., & Koç, T. S. (2015). İş sağlığı ve güvenliği uygulamaları performans değerlendirme ölçeği: Geçerlik ve güvenilirlik çalışması, *SGD-Sosyal Güvenlik Dergisi*, 5(2), 124-144.
- Vullings, W., Vries, M., & Borman, L. (2007). Dealing with uncertainty in spatial planning. 10th AGILE International Conference on Geographic Information Science, Aalborg University, Denmark.
- Yaman Galantini, Z. D. (2018). Sürdürülebilir kent planlama ve kentsel kalkınma için bir politika paradigması olarak kentsel dayanıklılık: İstanbul örneği [Urban resilience as a policy paradigm for sustainable urban planning and urban development: The case of Istanbul]. PhD Thesis, İstanbul Technical University, İstanbul.
- Yıldız, F. (1995). *İmar Bilgisi*. Nobel Yayıncılık, Ankara, p.563.
- Zoral, P., & Varol, Ç. (2016). Sürdürülebilirlik değerlendirmesi yaklaşımının mekansal planlama pratiğine uyarlanması: Türkiye için yeni bir öneri. In *Seksen Sonrası Mekan ve Planlama*, pp. 51-79.

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