Grant Agreement No.: 730468

Project acronym: Nature4Cities

Project title: Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models

Research and Innovation Action

Topic: SCC-03-2016: New governance, business, financing models and economic impact assessment tools for sustainable cities with nature-based solutions (urban re-naturing)

Starting date of project: 1st of November 2016

Duration: 48 months

D5.3 – VALUES of SOCIETAL ACCEPTANCE

Organisation name of lead contractor for this deliverable: METU		
Version 3 – Rev.1	Due Date	08/31/2018
	Submission Date	09/17/2018
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Dissemination Level		
PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	X

Document history

History			
Version	**Date**	**Author**	**Comment**
1	August/17/2018	Ramazan Sari, Ugur Soytas, Dilge Kanoglu, Melek Akın Ates, Demet Islambay, Cagdas Kilic	First draft sent to partners
2	September/06/2018	Ramazan Sari, Ugur Soytas, Dilge Kanoglu, Melek Akın Ates, Sylvia Breuker	This version was sent to coordinator and partners for review
3	September/17/2018	Ramazan Sari, Ugur Soytas, Demet Islambay	This version was sent to coordinator as a final version
4	April/20/2020	Ramazan Sari, Ugur Soytas, Aytekin Guven	New version following the review report comments
5	April/11/21	Ramazan Sari, Aysen Sivrikaya	New version following the reviewing report/comments/

List of Updates
Executive Summary was update, Figure 2.1 was revized.

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Abbreviations

NBS : Nature Based Solution
WP : Work Package
METU : Middle East Technical University
CMM : The Metropolitan City of Milan
ARPA : Environmental Protection Organizations
QoL : Quality of Life
NGO : Non-governmental Organizations
SEM : Structural Equation Modeling
PLS : Partial Least Squares

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Executive Summary

This document presents the framework and results of the Task 5.3, which is about the social acceptance of and barriers to NBSs. It starts with a note on the importance of social acceptance and barriers to implementation of NBSs. Then it provides an overview of the theoretical background and presents the behavioral model adopted based on literature review. The theoretical framework mainly relies on the theory of planned behavior, norm activation theory, and theories on affect.

The report emphasizes that the impact of policies, projects and technologies on well-being of society and environment may not be effective or sustainable without quantified and properly determined social factors. The assessments of economic and environmental dimension without considering the social effects is insufficient. In this report, “social acceptance” is considered as a promising factor for such social assessment. As an emerging solution to environmental problems, nature-based solutions related projects or technologies are subject to social acceptance. It is crucial to identify the causes of objection, if any, and refraining from resisting the NBS for future urban planning.

The report considers behavioral theories and provides suggestions for constructing behavioral models for NBSs. Then it also explains the systematic method proposed for questionnaire development based on the theoretical model. The link of each question to the behavioral model is also presented so that urban planners can follow the steps to collect data and to quantitatively evaluate the social acceptance of the NBS in concern. Sampling strategy and the partial least squares methodology used in the quantitative analysis are discussed. For parametric statistical methods to be applicable a type of probabilistic sampling method must be adopted which also allows direct testing of the NIMBY problem. the report makes suggestions to this respect. Partial least squares (PLS) method allows testing the significance of antecedent factors of social acceptance with a relatively smaller sample size and it is simpler to conduct and interpret compared to alternatives. PLS estimation uses an iterative estimation algorithm, which consists of a series of ordinary least squares regression analyses. The model in PLS is analysed and interpreted sequentially in two stages: (1) The assessment of the reliability and validity of the measurement model. (2)

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The assessment of the structural model. Questionnaires both in English and in local languages can be found in the appendices.

The methodology description for qualitative analysis talks about structured interviews used to determine barriers to implementation of NBSs. Sampling strategy and structured interview methods are introduced.

The report provides a step by step tool for urban planners who would like to assess the social acceptance of any NBS pre or post implementation. Figure 8.1 provides a visual display of this general implementation strategy. The guideline includes theoretical behavioral model considerations (See figure 4.1 for theoretical model), systematic sample selection and data collection methodology, questionnaire development with common and NBS specific question suggestions (See figure 4.2 for questionnaire development strategy), and conducting empirical application. This step by step approach is used and the quantitative findings are provided in detail for the 4 selected cases: METU forest in Ankara, Turkey; Tisza river bank in Szeged, Hungary; forest garden in Alcalà de Henares, Spain; quarries in Milan, Italy. SmartPLS software, version 3.0M2 (www.smartpls.de), is used for calculations in this report. Key points are presented at the end of each case that enables to identify common factors as well as differences across cases.

For METU forest results show that perceived benefits of the urban forest dominate the perceived risks, perceived benefits of urban forest are at the societal level rather than at the individual level, involvement in decision making processes increases acceptance, and causality runs from experience to knowledge and from knowledge to trust.

For Tisza river bank results indicate that distributional justice (for both benefits and risks) and procedural justice are key drivers of acceptance, procedural fairness improves trust for authorities, strong trust leads cost, benefit, and risk assessments by the citizens, and causality runs from procedural fairness to trust and from trust to evaluation of costs, benefits, and risks, which in turn drive social acceptance.

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For forest garden in Alcalà de Henares our results show that Involvement in decision making processes increases trust and acceptance of forest garden, and causality runs from experience to knowledge and from knowledge to trust, which directly influences personal assessments of risks, costs and benefits and formation of personal norms about the NBS.

Finally, for quarries in Milan, we find that procedural fairness, cost, and outcome efficacy are driving factors of social acceptance, outcome efficacy refers to formation of personal norm due to citizens' beliefs that their behavior will have positive impact on the implementation plan, and causality runs from procedural fairness that leads to trust for authorities and the NBS itself. Trust then forms perceptions about the effects of the NBS and assessment of costs and benefits that shape the the attitudes towards the NBS

Qualitative results for barriers follow the quantitative results. Experts think that among other things resistance by the society is an important problem in NBS implementations. Qualitative and quantitative results do not only confirm, but also complement each other. We uncover that different antecedents may be important for different cases. This difference can be partly attributed to different cultures and partly to different type of NBSs studied. We conclude that the social acceptance has rich and complicated dynamics and must be assessed separately for each NBS and in different countries.

The importance of citizens' experiences with the NBS and their inclusion in the decision processes improve trust for the authorities and in return social acceptance is affected positively. There are also factors that differ across cases. For example, personal norms are significant in Alcalà de Henares and Milan, but not in Ankara or Szeged. These differences may be attributed to different NBS types, city characteristics, decision making procedures, and to political and cultural differences among other things.

A general implementation strategy is depicted for future reference as a guideline. Policy suggestions to increase the acceptability of the NBSs are provided along with the flowcharts for case specific implementation strategies. The suggestions range from different knowledge sharing activities to direct involvement of citizens in decision making and implementation

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procedures to improve procedural fairness perceptions and personal norm formations, which lead to higher acceptability.

The report highlights the replicability of the framework that is utilized for this task. The most important advantage of the proposed framework is ease of adaptability. From questionnaire development to the links between variables, it is flexible enough to be easily adapted to any type of NBS as well as to any other technology or project where determining the antecedent factors of social acceptance is important. Procedural fairness, positive and negative affects, perceived risk and benefits are the key factors of trust which in turn influences acceptability of the NBS in 4 cases. Perceived benefits have a direct impact on social acceptance in all cases. There are, however, case specific antecedent factors of NBS acceptance that are significant, like knowledge, personal norms, perceived risks and costs in 2 of the 4 cases. Distributive fairness is one of the three dimensions of the social acceptance; however, it is only in Szeged that it has a direct impact on the social acceptance. For further replicability, the report explaines why and how the framework is integrated in Citizen Say (T5.2) platform.

The document also includes suggested strategies for improving social acceptance of the selected cases. The strategies are different from each other in all cases due to the differences in key factors. Experience is significant for knowledge; however, knowledge is significant only in METU Forest and Forest Garden cases. Thus, experience and knowledge-based strategies are important only in these NBSs. Fairness should be one of the major issues in strategy development, however, only in Szeged, both distribution and procedural fairness are significant determinants of acceptance while in other three cases it is the distributional fairness only.

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1 Introduction

1.1 Purpose

This deliverable deals with social acceptance of and barriers to nature based solutions in cities. It refers to the Task 5.3 “Societal Acceptance and Barriers to implementation of NBS” of Nature4Cities project. It determines the factors of social acceptance and possible barriers for NBS implementations and develops a framework for the assessments after implementations. It also develops a framework for pre-assessment of all types of NBSs determined and categorized in WP1. The framework is flexible enough to be adopted for pre and/or post implementations of NBS.

The objectives of T5.3 can be stated as follows:

- Collecting primary data about factors of societal acceptance of an NBS, taking into account the multidimensional nature of societal acceptance.
- Identifying social, economic and cultural barriers for NBSs.
- Developing quantitative measures of societal acceptance to be integrated as inputs into sustainability assessments of different NBSs.

In addition to these general objectives, we will also present a framework for the questionnaire development for different NBSs. Thus, urban planners and decision makers can conveniently adopt the procedure to assess and manage social acceptability of NBSs before implementation.

This report provides a clear and transparent procedure for planners, decision makers and researchers on how to assess the acceptability of any type of NBS by community, public or market. It also clearly sets out the steps for the questionnaire development for different types of NBSs. As a side benefit of the report, the frameworks developed in this report can be replicated by any other researcher or decision maker for any new technology penetration, and policy or project implementation other than NBS projects.

1.2 Information on Selected Cases

There are 4 cities in which social acceptance of selected NBSs are studied in this task. Brief information on each NBS is provided below:

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METU Forest in Ankara (Turkey): METU Forest is one of the important semi-natural forest habitats in Ankara, the capital and second largest city of Turkey. Currently, the forest is owned by METU, a state university established in 1956. Managed by the Forestation and Environment Directory of METU and regulated by the Republic of Turkey General Directorate of Forestry, the forest covers a region of 3100 hectares. With over 30 million trees planted, METU forest provides the largest green area close to the city. Moreover, it includes a natural lake called Eymir and a small artificial pond in its territories. The forest is home to 700 species of flora, many wild animals (including wolves, foxes, partridges, rabbits, snakes and turtles), more than 140 bird species, more than 100 butterfly species, as well as various fish and other freshwater species living in the lakes and lagoons.[1]

Tisza River Bank in Szeged (Hungary): The rehabilitation and re-naturing of the Tisza River bank in Szeged is a developed concept that has been integrated in the municipalities' urban development plans. The re-naturing of the Tisza bank is an urban challenge of big importance as this action could ensure the connection between the river and the city. The general goal of proposed solutions in the region is to reach the urban section of the river Tisza, to create touristic attractions based on natural values, to present local history values, and to create the conditions of business based investment. Additionally, they aim to improve the current state of affairs to provide hiking, recreation and sports as well as business for actors. Solutions are to be managed by the Municipality of Szeged and regulated by the City Management Department within the Mayor's Office.

Forest Garden in Alcalá de Henares (Spain): The edible forest in Alcalá de Henares (Forest Garden of AH) was planned to be implemented with the aim of increasing biodiversity in the Isla del Colegio Park, and to offer a multifunctionality space. The forest not only expected to provide an environment for recreational activities and perform a buffering role against the pressure on the gallery forest, but also expected to serve to recover the protected banks of the river Henares. The creation of the edible forest is being carried out with the collaboration between citizens and the City Council of Alcalá de Henares through volunteer activities.

Quarries in Milan (Italy): There are 36 quarries in the territory of the Metropolitan City of Milan (CMM). The quarries are located in different areas. CMM has started a participation process for the design of a new quarry plan. The "Quarry Plan" is a territorial planning tool that aims to meet the requirements of aggregates for the construction market and give back the area of the quarry as a fruitive, naturalistic, or agricultural area to the local community. It governs the major transformations in quarry areas in urban and suburban areas through

[1] https://network23.org/outforbeyond/2013/11/03/what-is-going-on-in-metu-ankara/.

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re-naturalization processes. While the process of environmental recovery is nearly finished in some quarries, it is in the starting phase in others. Through these processes biodiversity can be increased, the land can be prepared for agricultural use or can be devoted to recreational or naturalistic activities. The construction of the Quarry Plan takes place through the participation and involvement of the various subjects involved (civil society, interested municipalities, park authorities, environmental protection organizations (ARPA)). It is an important work of balancing the effects of extraction on the environment, territory and population with the aim to arrive at the definition of interventions with a high degree of sustainability and feasibility

1.3 Contributions of partners

Table 1.1. Contribution of partners

Partner	Contribution
METU	Literature survey, operational framework development, questionnaire design, survey design, interviews, quantitative analyses, deliverable writing
Tecnalia	Technical support to the case of study of Alcalá de Henares. Suggestions for questionnaire development, Review of the deliverable.
DuneWorks	Suggestions for contributions to the literature database, discussion via skype about the conceptual framework, review of the deliverable.
Cankaya Municipality (CAN)	Suggestions for questionnaire development and its translation to Turkish, running survey.
City of Szeged (SZEG)	Suggestions for questionnaire development and its translation to Hungarian, running survey, Interviews with experts, review of the deliverable.
Citta' Metropolitana di Milano (CMM)	Suggestions for questionnaire development and its translation to Italian, running survey.
Alcalá de Henares Municipality	Suggestions for questionnaire development and its translation to Spanish, running survey.
R2M Solutions	Suggestions for questionnaire development, review of the deliverable.
Hungarian Urban Knowledge Centre	Suggestions for questionnaire development, review of the deliverable.
Innova Integra Limited	Suggestions for questionnaire development.
Colouree	Suggestions for questionnaire development.

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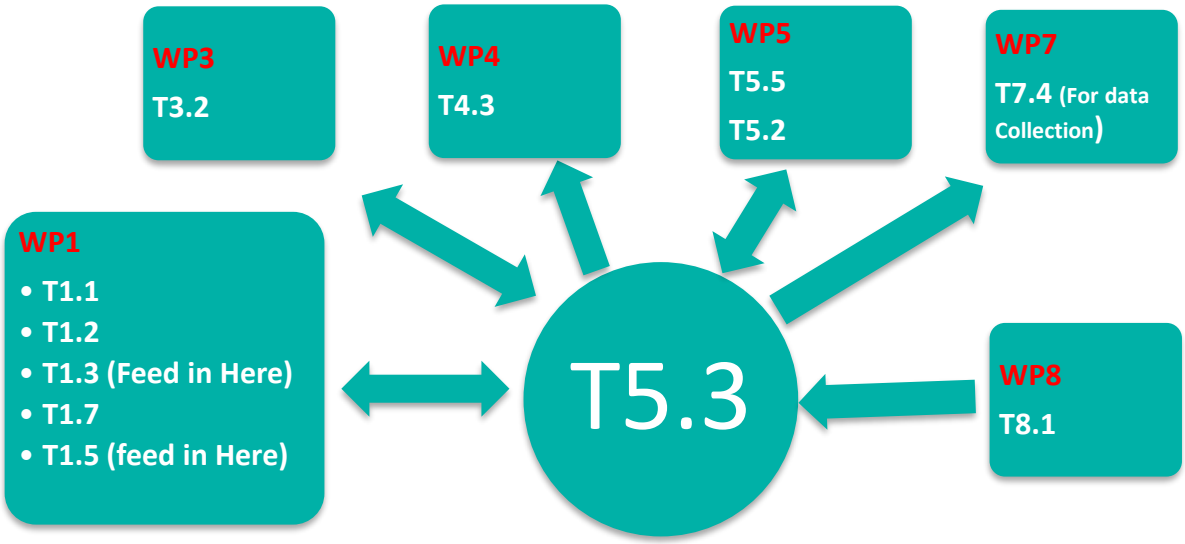
2 Links to Other Tasks

This section summarizes how T5.3 is linked to other tasks within WP5 as well as to tasks in other work packages. These linkages are depicted in the flow chart in Figure 2.1 Arrow heads indicate which component feeds into the other. Two arrow heads imply mutual interaction between components.

Figure 2. 1 . The links between T5.3 and Other Tasks



WP1: In order to develop a social acceptance measurement strategy with NBS specific questionnaires and to assess barriers, NBS typologies are needed. These typologies are taken as input from T1.1 and T1.2 of WP1. The results of the selected cases from 4 cities (Alcalá de Henares, Ankara, Milano, and Szeged) will feed into T1.3 of WP1, which is about pioneering experiences. In order to define a holistic integration strategy T1.5 requires input data from T5.3 in addition to WP2, WP3, and WP4. Last, but not least, T1.7 defines and identifies data collection methodologies as well as setting Data protection and Privacy Requirements. These are taken into consideration while conducting surveys in T5.3.

WP3: The survey results will feed into T3.2, which deals with the definition of citizens as urban agents. The system boundaries identified by WP3 can enhance the sampling strategy of social acceptance surveys for certain NBSs. The cluster analysis on the data from T5.3 surveys can help identify different agent types in agent based modelling simulations

WP4: Task 4.3 introduces an alternative value scale based on Quality of Life (QoL). The findings in T5.3 on social acceptance are confirmatory in nature to QoL concerns in that it

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provides a tool for understanding of how society perceives the risks, costs, and benefits of particular NBSs that influence their QoL.

WP5: T5.3 directly feeds into T5.5, since T5.5 merges the outcomes of T5.1, T5.2, and T5.3 to come up with an integrated tool to select a set of eligible Implementation Models. The framework and the general questionnaire (in English) developed in T5.3 are implemented in Citizen Say (T5.2) for the purpose of integrating the Social Acceptance to the project platform as a decision tool.

WP7: WP7 gets the different developed tools and corresponding methodologies that are tested on generic/model NBS and used cases in WP 2, 3, 4, 5 and 6 as inputs. Hence, both the methodology developed and the 4 case study applications of T5.3 feeds into this work package.

WP8: The replication and business plans to be developed in T8.7 can benefit from the knowledge created in T5.3 on how to assess social acceptance pre and post implementation of an NBS. The interviews conducted in T8.1 provides input to T5.3 in that they are focusing on determining user needs, especially citizen-consumers.

3 The Importance of Social Acceptance and Barriers for NBS

The social acceptance of technology implementations, renewable energy and environmental policies are progressively becoming more important for policy and decision makers worldwide aiming to design policies that reach attempted targets smoothly with community support. Sustainability assessment has recently become an important issue for policy and decision makers due to a recognized requirement of balance between environmental, economic and social policies. The interlink between these policies require a simultaneous consideration of all three dimensions of sustainable development to have a better environment, non-decreasing growth and welfare of society without compromising the wealth of future generations as indicated in Brundtland definition of sustainable development (WCED 1987). There exists an inherent risk of new technology implementations on balance of policies related to three pillars of sustainability. Especially, when there is an impact of new technologies on income equality, land distribution, land value, poverty, health, participation and education, public resistance to new technologies, projects or policies increases. The proper assessment of new technologies' impact on environment, economic and social life avoids conflicting policies in these areas. Since social assessment is difficult due to a lack of indicators that can be directly employed in technical analyses, much attention has been

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given to determination and quantification of social factors or the interaction of the social variables in a complex relationship.

Without quantified and properly determined social factors, the impact of policies, projects and technologies on well-being of society and environment may not be a base for future policy strategies. Thus the assessments of economic and environmental dimension without considering the social effects is insufficient (Cerrrera and Mack, 2010). The social acceptance could be considered to be a promising factor for social assessment. As an emerging solution to environmental problems, nature based solutions related projects or technologies are subject to social acceptance. By the nature of NBS, due to the land covered, unconventional technological implementations, the uncertainty involved in both its success or implementations etc., it is a crucial issue to identify the causes of objection, if any, and refraining from resisting the NBS for future urban planning.

To establish a link between nature based solutions (NBS) implementations and social acceptance, we need to define and understand the social acceptance. For the energy domain and the development and implementation of renewable energy projects, Wüstenhagen, Wolsink and Bürer (2007) presented the definition of three dimensions of social acceptance: socio-political acceptance, community acceptance, and market acceptance (Figure 3.1). Socio-political acceptance is the one that has a broader scope when compared to the other two dimensions in that it includes the acceptance of public, key stakeholders and policy makers. Community acceptance stands for local stakeholders' acceptance of technologies or projects. The concept blankets the ideas of procedural justice (justly decision making with participation of all stakeholders), distributional justice (fair distribution of burdens and benefits); and trust related to provided information, to the intentions of investors and of actors from the outside. Market acceptance is concerned with consumers, investors, intra-firm relations, and their interdependent paths. It analyzes these relationships while taking into account the attitudes of international companies towards different environments (Wüstenhagen, Wolsink and Bürer, 2007).

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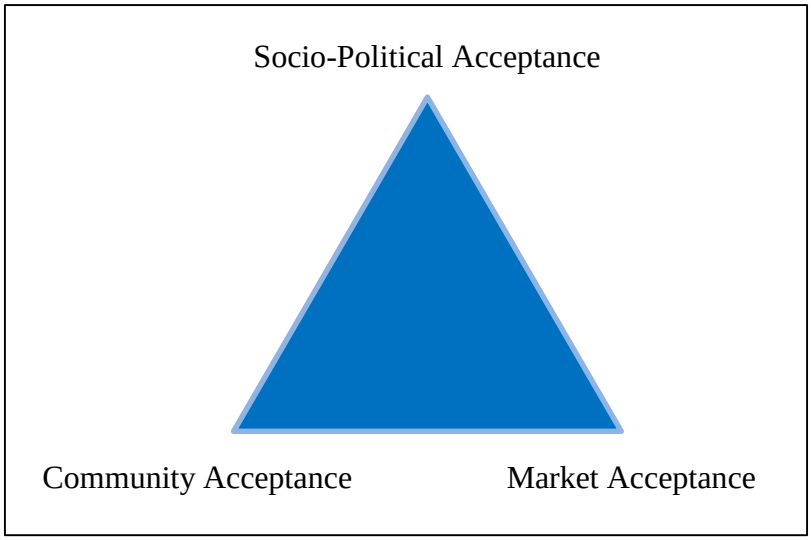
Figure 3. 1 .Three Dimensions of Social Acceptance



Source: Wüstenhagen, Wolsink and Bürer (2007)

The threefold understanding of social acceptance as presented above is also applicable to the preparation, planning and implementation of NBS. Like socio-technical energy transitions, NBS also consist of physical and partially technical (or techno-environmental) interventions in geographical locales as part of a broader efforts to address climate change challenges (Raven, et al., 2009). When it comes to the social-political acceptance, awareness of the importance of NBS among national, regional and local planners and policy makers is relevant to consider. Community acceptance relates to the planning and decision-making process in local contexts where NBS are proposed and decided upon. The acceptance of the NBS is likely to depend on the extent to which community members perceive the process as having been fair and inclusive. In addition, acceptability is likely to relate to the ways in which the NBS provides co-benefits that community members value (e.g. in terms of comfort, health, safety, aesthetic values, liveliness, attractiveness of spaces, etc.). As for the market acceptance, the challenge is to find investors and develop business models for the implementation and maintenance of NBS. While a market for NBS is difficult to discern, it may be that the development of NBS invites economic activities related to new recreational functions of an area, as a result of NBS development, e.g. shops, kiosks, restaurants etc.

Understanding the factors behind social acceptance and measuring it is very important in order to facilitate a smooth NBS implementations.

In order to clarify factors that can explain the divergence in acceptance of different projects in different locations, we can refer to Sovacool and Ratan (2012). This study examines four case studies of social acceptance, which are for commercial wind turbines in Denmark and India, and for residential solar panels in Germany and the United States (Sovacool and

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Ratan, 2012), and identifies nine factors that impact social acceptance in renewable energy projects. These factors encompass strong institutional capacity, political commitment, favorable legal and regulatory frameworks (that correspond to the socio-political dimension of Wüstenhagen et al. (2007)), comparative installation/production cost, mechanisms for information and feedback, access to financing (that correspond to the market dimension) and prolific community/individual ownership and use, participatory project siting and recognition of externalities or positive public image (that correspond to the community dimension)(Sovacool and Gross, 2015; Kanoglu and Soytas, 2018). The authors also state that investments in Germany displayed all criteria, but 'competitive installation/production cost', and Denmark displayed all criteria, but 'transparent regulatory changes' (i.e. political commitment). On the other hand, the United States and India exhibited three of the criteria and were found to be less likely to successfully achieve social acceptance.

The implication of the existence or lack of social acceptance is essential because it provides us with an answer: it tells us to what extent people are "willing and prepared to adopt the applications in their own contexts when presented with an opportunity" (ECN, 2008). Bronfman and his colleagues (Bronfman et al., 2012) implemented a web-based survey of acceptance of 10 different electricity generation resources among Chilean university students. Results of this survey demonstrated that, for controversial energy sources in the Chilean society (these include fossil fuels, hydro, and nuclear power), public trust in regulatory agencies was a significant determinant of perception of risks, benefits and hence of social acceptance. Whereas, for nonconventional renewable energy sources (these include solar, wind, geothermal and tidal) neither the perception of benefits and risks nor their acceptance was correlated with confidence in these agencies. In addition, the authors assert that in a country where the amount of energy production has to be doubled every ten years to meet current demand estimates, social acceptance assumes the role of determinant factor for the failure or success of decisions in the functioning of electricity production technologies (Bronfman et al., 2012). "The implication of this is critical in that it suggests that the lack of social acceptance may cause costly delays and stagnation" (Hisschemöller and Midden, 1999; Renn et al., 1995) in NBS implementation. Altough social dynamics regarding energy issues may be quite different from societal concerns regarding NBSs, this relatively well-developed energy literature provides a straightforward framework that can be adapted for NBSs. Energy is essential for economic growth and projects backed by strong industrial lobbies may overweigh societal concerns in the eyes of policy makers. In the case of NBSs, a lack of lobbying efforts and having no direct impact on the aggregate economy, social acceptance may play a more important role in smooth implementation than in energy projects.

In order to understand the level of acceptance we need to measure it. If we want to improve the social acceptance of a project, we need to understand the factors driving that measure.

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A number of studies have suggested that promoting communication within the community and developing awareness through diverse information channels and formats will result in an increase in social acceptance. For example, Tokushige et al. (2007) discusses how the type of information impacts social acceptance. The survey conducted among 423 Japanese university students on the perception of geological storage of carbon dioxide before and after they were exposed to different methods of information provision revealed that information "concerning the scientific process did not necessarily influence attitudes. On the other hand, information on natural analogues incremented the level of public acceptance through diminishing the risk perception. Similarly, on field demonstrations increased public acceptance through enhancing visions of human interference with the environment in the process of implementation of the technology"(Tokushige et al. (2007). This example clarifies that social acceptance cannot be reduced to the features of the technology or to the historical, social, economic, cultural, geographic and institutional structures of groups. It is a process of aligning a broad spectrum of social interests, and coordinating the Nature Based Solution such that it does not meet significant obstacles from policy-makers, residents, NGOs or other agents (ECN, 2008). Although carbon capture and storage (CCS) may not be directly comparable to an NBS, the social acceptance processes may be parallel. For example, the process through which on field demonstrations influence social acceptance of CCS used in Tokishige et al. (2007) study may be similar to how citizens' experience with the NBS interact with social acceptance of an NBS post implementation.

Recent developments, particularly conflicts associated with energy technologies, have delineated that social acceptance has become an imperative consideration in planning and implementing policies and projects like Nature Based Solutions. Fortunately, it is not a challenge/barrier, but instead an indicator that can be measured and hence managed by urban planners and implementers of the NBSs (Kanoglu and Soytas, 2018).

Next section will explain how to measure the social acceptance for nature based solutions.

4 Methods

This section explains the methodology used to determine the factors driving social acceptance of selected NBSs. The methodology can be replicated at regular intervals to assess the changes in societal acceptance levels and factors affecting them. Another use for this section is that the methodology can be adapted to address societal acceptance issues faced for other NBS types. A general step by step explanation of how this process can be replicated is presented in section 8.1

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4.1 The framework for the questionnaire development

The three dimensions of the social acceptance explained in Section 3 define the population whose acceptance of NBS is of concern. Community acceptance concerns cost - benefit sharing, participation in decision processes and/or financing, investment, and several other forms of support by *local stakeholders* or *the whole community*. Socio-political acceptance concerns the *regional and local planners', key actors'* and *policymakers'* support for guidelines and implementation of technologies. Market acceptance involves *consumers* and *investors*. In a methodological point of view, each one of these determine the population framework from which a sample is drawn for analyses. Depending on the type of NBS, the acceptance can be subject to any or all of these three dimensions. NBS can be decided about, owned or managed by any member of community. Considering that NBS may consume a public space, being near a historical site, has risks and benefits that might be shared by every member of a community, may have an impact on the income of the society or influence political preferences, etc, the more relevant dimension of acceptance to NBS seems to be the community acceptance. In many cases NBS is subject to the policy making or decision of local and/or national authorities. On other cases, NBS may require a behavioral response from the users to utilize the benefits of the NBS. In these senses NBS can also be subject to the socio-politic and market acceptance. However, the four cases under consideration in Ankara, Milan, Szeged and Alcalà de Henares are either already been in the process of implementation or has already been fully implemented. Thus, the acceptance of the four cases is mostly about community acceptance and it is less likely to be the concern of the investors or be subject to a decision process. Authorities have already established a decision in favor of NBS. Hence, we base our research questions mainly on a framework developed in line with community acceptance. Even though in a limited fashion, we also considered the other two tenets, especially user aspect of the market acceptance to shape the questionnaires.

Decision makers or policy developers, on the other hand, are also the ones who will manage or maintain the NBS and thus we utilized an interview approach for them to determine the barriers to NBS implementation.

Our questionnaires are based on the three related psychological theories (Huijts et al. 2007) that underlines the behavior of community in general and users and decision makers in favor or against the nature based solutions. These theories are namely the theory of planned behavior, norm activation theory, and theories on affect (Huijts et al., 2012).

The first component of the theoretical framework relates to the motives categorized by Lindenberg and Steg (2007), namely gain, normative, and hedonic motives. In the context

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of gain motives, *the theory of planned behavior* (Ajzen, 1991) constitutes the foundation of our approach. This theory suggests that the intention to behave in a particular manner is founded upon attitudes, subjective norms and perceived behavioral control. While attitudes refer to the degree to which the action is favorable or not, subjective norms relate to the societal pressures and obligations that could facilitate or hinder an action, and perceived behavioral control relates to the ease of taking action (Kanoglu and Soytas, 2018; Ajzen, 1991). However, as the action in question for the project is responding to an anonymous questionnaire, any difficulty in performing the behavior is eliminated, and hence perceived behavioral control does not remain as a factor in our model. In addressing attitudes on the other hand, we account for the outcomes that impact attitudes. These outcomes that include benefits, risks and cost are relevant in that a weighing of the relative values for them allows individuals to select the preferred alternative (Lesbirel and Shaw, 2005; Pidgeon and Demski, 2012; Visschers and Siegrist, 2013).

The norm activation theory (Schwartz, 1977; Schwartz and Howard, 1981) suggests that behavior that would serve the well-being of others, is an aftermath of personal norms that relate to the feeling of moral obligation to act in a certain manner or refrain from taking action (Schwartz and Howard, 1981). When individuals believe that deviating from the socially desirable way will have unfortunate consequences, and when they sense that they can have a role in resolving prevalent problems (that is measured through the outcome efficacy factor), these personal norms are said to be activated.

The theories on affect (Lindenberg and Steg, 2007), that relate to hedonic motives, suggest that feelings associated with applications (Midden and Huijts, 2009) or those that arise a result of decisions relating to these applications (Loewenstein and Lerner, 2003), are relevant in explaining societal acceptance. According to Peters and Slovic (1996), and Montijn-Dorgelo and Midden (2008), both positive (satisfaction, joy, hope, pride, calmness) and negative affect (worry, stress, powerlessness, anger, fear) are of consequence in acceptance analyses.

Following the suggestion in Huijts et al. (2007), the comprehensive acceptance framework includes also the trust, distributional and procedural fairness, knowledge, and experience (Figure 4.1)

Trust in the agents responsible of implementing and regulating a project, has been identified as a factor that impacts societal acceptance in several studies (Siegrist et al., 2007; Terwel et al., 2009; Tokushige et al., 2007; Montijn-Dorgelo and Midden, 2008; Midden and Huijts, 2009; Bronfman et al., 2012; Soland et al., 2013). Following the most commonly adopted approach, we have associated trust with acceptance through linking it to perceived benefits, risks and costs (Kanoglu and Soytas, 2018). As noted by Kahneman et al. (1986), attitudes towards an application could also be impacted by the perceived amount of fairness in the

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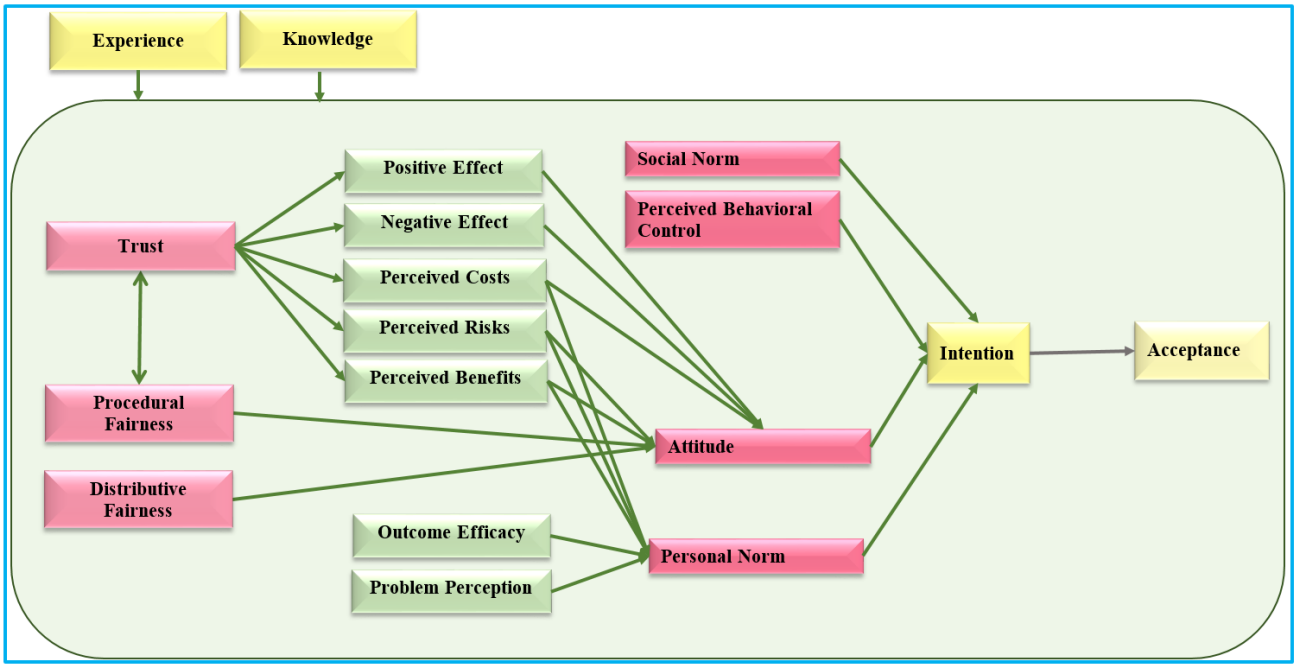
process. The concept of *fairness* encompasses that relating to the distribution of benefits, risks and costs, otherwise entitled distributive fairness, and that of the decision making process, procedural fairness (Bernheim and Rangel, 2007; Gross, 2007; Wolsink, 2007). The factor of *knowledge* is also important for the acceptance analysis since it is considered as a means of arriving at a sound judgment (De Best-Waldhober and Daamen, 2006). *Experience* is another factor that is crucial to the acceptance framework for NBSs. Experience relates to familiarity with the NBS that is achieved either through proximity to the project, or through coming across information packages about that project. Experience works through the channel of knowledge, as it serves as a means of accumulating knowledge, and impacts acceptance through modulating how people weigh their gains and losses (Huijts et al., 2012).

Using the appropriate multivariate method, each connection (shown as an arrow in the diagram below) is simultaneously tested for significance in each of the 4 NBS cases selected. The implementation strategy can then be constructed based on the significant linkages, which pave the way for NBS specific policy recommendations.

Figure 4. 1 .Social Acceptance Model



Source: Huijts, Molin and Steg (2012)

The theoretical framework in Figure 4. 1 4.1 depicts the latent variables (constructs) where arrows show the hypothesized causality directions. The latent variables are unobserved variables that need to be constructed from observed and measured variables (not shown in the graph). The questionnaire comes into play at this stage. All indicators (or manifest

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variables) to assess a construct are included in the questionnaire as questions. The indicators are determined from the acceptance literature (some examples from applied work include Tokushige et al. (2007), Huijts et al. (2007), Musall and Kuik (2011)). The number of indicators per construct varies. To illustrate, “problem perception” is captured via the three questions in Part A of the questionnaire, whereas “outcome efficacy” is measured by 2 questions in Part C. All questions in the questionnaire, except for the ones on demographics, are used to measure these indicators that in turn reflect the constructs shown in Figure 4. 1 4.1 above.

The starting point of questionnaire development is the typology of the NBS in concern. These typologies are determined by T1.1 and the changes determined by T1.2 of WP1. As shown in Figure 4.2 the first column shows the typologies. Based on the theoretical framework introduced above, in terms of acceptability, all NBS types have some common constructs. The link between these constructs are shown in detail in Figure 4.1. Each construct poses a social urban challenge as listed in D2.1. In addition to the literature review, these challenges helped us identify indicators for each construct. These indicators are used for the development of the questions that can be used for any type of NBS, which is represented by the fourth column.

Once the common questions are developed, in the next step, the NBS specific questions were determined. In the questionnaires, these questions were placed in Part H.

At this point we asked our Municipality partners to determine the NBS for our task and provide us the information about that specific NBS. We ask them to fill in a form for NBS and the city. Based on the information provided, we determined the type of NBS. Since the types of selected NBSs were similar, we figured out that the theoretical framework and the indicators are same for all four NBSs and we finalized the common questions section.

The questions in Part H were provided by our City Partners, since they have more knowledge about the NBS in their neighbourhood and the opportunity to closely observe it. They were expected to clearly identify the distinguishing features of the NBS that can be translated into questions that are not covered by common questions. For METU Forest in Ankara, for Tisza Bank in Szeged Quarry, for Quarry Plan in Milan, and the Forest Garden in Alcalá de Henares, questions supplied by partners are placed in Part H by task partners, resulting in 4 slightly different questionnaires.

After developing the questionnaires in English, we asked our partners in Ankara, Szeged, Milan, and Alcalá de Henares to translate them into their local languages. They all translated them and evaluated the appropriateness of the questions in their language and culture to

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make sure that none of the questions can offend people, mislead or cause a misunderstanding.

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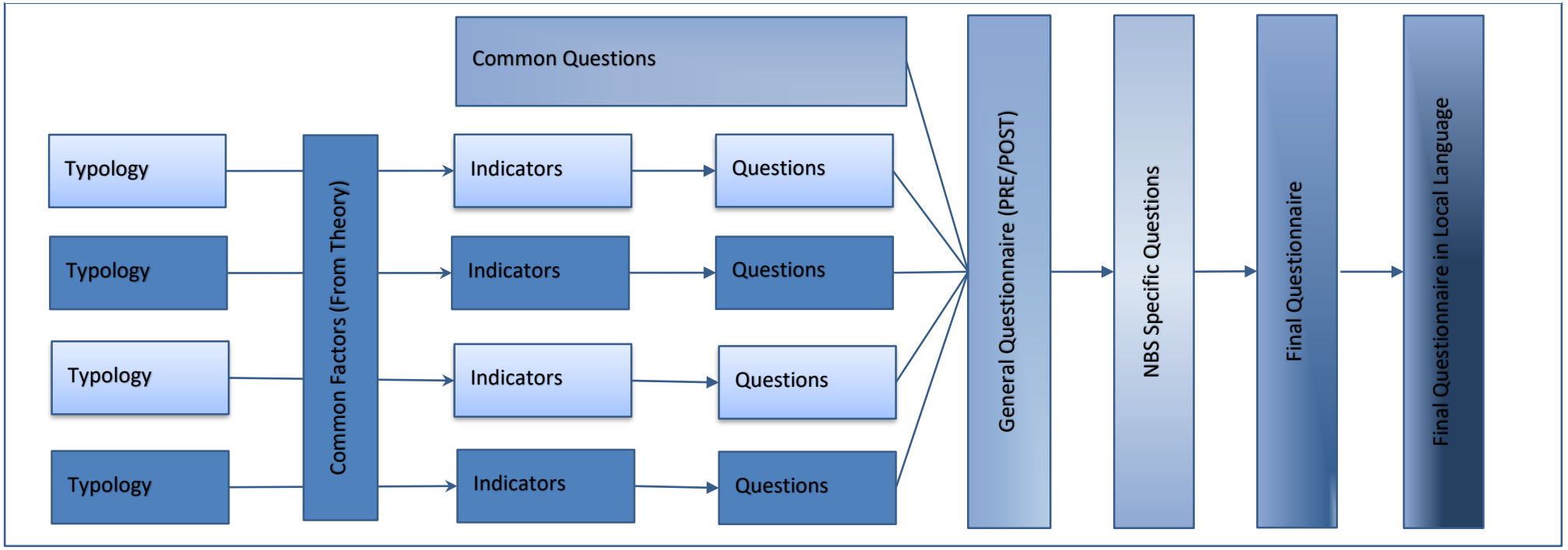
Figure 4. 2 . Questionnaire Development Framework



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4.2 Sampling Strategy

After completing the questionnaire design, we determined the steps to conduct the survey and shared it with our partners. The sampling strategy unfolded as follows:

1. As a first step, we determined the appropriate sample size. As indicated by the model in Figure 4.1, the appropriate method to use is Structural Equation Modeling (SEM) and/or Partial Least Square method (See Section 4.4 for explanations). In structural equation modelling, a commonly accepted view "is that a sample size of fewer than 100 is small, a sample size between 100 and 200 is medium, and a sample size exceeding 200 is large" (Kline, 2005). Therefore, in this project we aimed for a minimum sample size of at least 200. However, considering the challenges associated with collecting data via surveys, such as low response rates and missing answers (Forza, 2002; Sax et al., 2003), we aimed for a sample size between 200-300.
2. Randomness is an important aspect of empirical studies. Before we conduct the surveys, we determined the NBS for each partner city and used the NBS as a geographical center to divide each city into four zones to maintain randomness.
3. Once we divide the city into four zones centered around the NBS, we determined the number of surveys that should be conducted in each zone as 75 (300/4).
4. Within each zone, we expected to run surveys, in cafes, restaurants, business centers, shopping centers, etc., (80%) and households (20%).
5. We used the map of Ankara as an example for zone determination centered around the METU Forest as a guide for our partners who conducted the surveys.
6. The zone approach was not appropriate for Milan since the Quarry Plan is spread around the city and the distances of consumers/citizens from the NBS is not varying. Upon the request of our partner, the zoning approach was not used in Alcala de Henares either, since the geographical area is small enough for distance to be a major issue. Since the major motivation for the zoning is randomness of the sampling, in both Milan and Alcalá de Henares, the randomness assumption was not expected to be violated. As a result, we had two zone based data, from Ankara and Szeged.
7. Before sending the formatted and translated questionnaires to the partners, we created Google forms for each city for the data collection.
8. Partners had two options for running surveys; Printed version and Online version. Online version is simply a digital form of the printed version. If the printed version was utilized, we asked our partners to enter the filled questionnaires to the online version. All the collected data were gathered in Google Drive, with limited access by our team members and by our partners who requested to monitor the survey process.

4.3 Method for Interviews

To understand the barriers for NBS, we conducted structured interviews with NBS, Environment or Urban planner experts, decision makers and / or academicians, etc. They were from various departments and faculties or institutions from Turkey, Spain, Hungary, and Italy. There were 5 female and 14 male participants who were reached via online searching (e.g. Google Scholar) and our project partners (see Table 4.1 for the details about participants).

In total, 19 semi-structured interviews have been carried out, six of them were conducted with participants in Turkey, five from Hungary, five from Italy, and three

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from Spain. All interviews, but Hungarian ones, took place online via Skype. The Hungarian interviews were conducted by our Szeged Municipality partner team in Hungarian language and then translated to English. Some interviews were audio recorded after receiving the consent of participants, and transcribed. The mean duration of the interviews is 23.61 minutes.

The semi-structured interview method was chosen for the present study to confer on and point out the certain aspects of the relevant topic. The questions were mainly exploratory, and open-ended which means they are neither fully structured, nor spontaneous conversations. Instead, the interviewer used a pre-determined topic guide (Gaskell 2000, p. 40). Moreover, semi-structured interview methods also allow researchers to ask the same questions in different ways to the participants which provides flexibility (Dearnley, 2005). The topics mainly discussed in the interviews were related to advantages and disadvantages of and possible and present barriers to nature-based solutions in general. If the interviewee has the knowledge of one of the four NBSs under consideration and the discussions were made accordingly.

To each interviewee, we pose the following questions as a base for the interview and discussions. Based on the given answers, questions were modified to make sure that we obtained the information that could not be obtained otherwise by a structured interview. We made sure that the following questions (Box 4.1) were asked to all participants.
The interviewee characteristics are depicted in the table below. Interviewees are especially selected from cities where the selected 4 NBS cases for the social acceptance analysis exist. The selected group covers a range of roles including academicians, members of related NGOs and policy makers. Policy makers include both managers and policy experts to reflect perspectives at different levels.

Box 4.1: Interview Questions about Barriers to Nature-Based Solutions (NBS)

1. What are the advantages of NBS? What exactly NBS offers?
2. What are the drivers of NBS?
3. What are the disadvantages of NBS?
4. What are the possible problems to more widespread use of NBS?
5. What barriers, if any, do you see to incorporating nature-based solutions into urban planning?
    - Do you think that these barriers are present at all levels of society?
6. Do you think NBS contributes to the short and/or long-term environmental sustainability?
7. What could be done in order to increase the awareness of citizens in terms of NBS? How those barriers could be overcome for a more widespread and effective use of NBS?

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Table 4.1. Participants'gender, countries and affiliations

P	Gender	Country	Affiliation
P1	Female	Turkey	Urban Planner, PhD candidate in Urban Policy Planning and Local Politics
P2	Male	Turkey	Expert at Ministry of Forestry and Water Affairs, General Directorate of Nature Conservation and National Parks
P3	Male	Turkey	Faculty Member, Atılım University, Faculty of Business Administration
P4	Male	Turkey	Faculty Member, Middle East Technical University, Department of Environmental Engineering, Visiting Scholar at Michigan State University
P5	Female	Turkey	Faculty Member, Middle East Technical University, Department of Business Administration
P6	Male	Turkey	EU Environmental Policy Expert, REC Turkey
P7	Male	Hungary	Deputy Head of Department of City Development, Municipality of Szeged
P8	Male	Hungary	Manager of SZVMF (Szeged Waterworks Acting and Development Ltd.)
P9	Male	Hungary	County Chamber of Architects
P10	Female	Hungary	Municipality of Szeged, Department of Architecture
P11	Female	Hungary	University of Szeged, Assistant Professor in Department of Climatology and Landscape Ecology
P12	Male	Italy	Faculty Member, Department of Architecture and Urban Studies, Politecnico di Milano
P13	Male	Italy	Faculty Member, Rome Tre University, Department of Education, Social and Environmental Psychologist
P14	Male	Italy	Faculty Member, Department of Architecture and Urban Studies (DASTU), Politecnico di Milano / Coordinator of Urban Simulation Lab
P15	Male	Italy	Faculty Member, Department of Social and Political Sciences, Bocconi University Milan / Research Director of Centre for Research on Energy and Environmental Economics and Policy
P16	Male	Italy	Faculty Member, Director of Research Center for Economics and Policy of Energy and Environment, Bocconi University of Milan
P17	Female	Spain	Faculty Member, University of Granada, Department of Botany / Silva Mediterranea / FAO (Food and Agriculture Organization)
P18	Male	Spain	Postdoctoral Researcher, Institute of Environmental Science and Technology (ICTA-UAB) at the Autonomous University of Barcelona
P19	Male	Spain	Postdoctoral Researcher, Institute of Environmental Science and Technology (ICTA-UAB) at the Autonomous University of Barcelona / Medical Research Institute of Hospitals (Hospital del Mar Medical Research Institute (IMIM))

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4.4 Method for Analyses: Partial Least Square Technique

Social sciences usually investigate complicated relationships, since studies include social and psychological contexts (Bowen and Guo, 2012). In order to analyze these complicated relationships, traditional regression analysis can be conducted to predict a change in a dependent variable in a model on the basis of change in independent variables, under the normality assumption (Bowen and Guo, 2012). However, when there are multiple dependent variables in a network of complex relationships, structural equation modelling (SEM) is a better approach. Structural equation modeling (SEM) is a general statistical approach that executes more than one independent and dependent variables simultaneously (Bowen and Guo, 2012).

When models to be investigated get more complex, SEM requires a larger sample. Additionally, when the data has non-normal characteristics (which is often the case in survey research), traditional SEM techniques (e.g. AMOS, LISREL) cannot generate reliable solutions. Partial least squares (PLS) is a type of SEM, which relies on a nonparametric bootstrap method that randomly creates subsamples from the original data set, thus creating larger data sets (e.g. 1000 samples, 5000 samples). It also allows reaching conclusions while normality assumption is not held (Chin, 1998). PLS can handle complex problems better and avoids two problems usually faced in traditional SEM: inadmissible solutions and factor indeterminacy (Ho, 1994; Fornell and Larcker, 1981). Considering these advantages, in this task we used PLS method.

We used the SmartPLS software, version 3.0M2 (www.smartpls.de), for calculations. PLS estimation uses an iterative estimation algorithm, which consists of a series of ordinary least squares regression analyses (Chin 1998). “The model in PLS is analysed and interpreted sequentially in two stages: (1) The assessment of the reliability and validity of the measurement model. (2) The assessment of the structural model (Hulland, 1999)” (Ho, 1994).

We will report two diagrams for the PLS results:

1. PLS algorithm results report the reliability of the measurement model. Item loadings should be higher than 0.6 (illustrated with numbers on arrows from circles to rectangles) in order to have high reliability. That’s the case for all measurement items. PLS algorithm results also report the path coefficients (from circles to circles), illustrating the extent of relationship among the constructs.

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2. PLS bootstrapping results report the T-statistics and significance levels of item loadings as well as path coefficients.

5 Sample Characteristics

For all 4 cites we aimed 200-300 for sample size. For three cities we obtained more than 300 observations. However, for Alcala de Henares we were able to collect 209, which is methodologicaly considered medium but still enough for analyses. The number of respondents are depicted in Table 5.1.

Table 5.1. Total Respondents in Each City

	Ankara	Szeged	Milan	Alcalá de Henares
Total Respondents	358	324	303	209

The age group of respondents are shown in Table 5.2. It seems that the age distribution is not violating the randomness. However, in Szeged, somehow, those who responded are younger than those in other cities.

Table 5.2. Age Distribution of the Respondents (%)

Age Group	Ankara	Szeged	Milan	Alcalá de Henares
20 and less	3.3	7.3	2.8	3.6
20-30	11.6	41.5	14.2	19.9
30-40	33.8	24.0	22.0	28.1
40-50	18.1	16.6	25.2	31.1
50-60	29.7	6.7	19.5	13.3
60-70	3.6	2.9	12.4	4.1
70 and over	0.0	1.0	3.9	0.0

The gender distributions are reported in Table 5.3. Interestingly, the participation of female respondents in all cities are higher that the males. However, the female share is around the 50% which is consistent with the general population distribution.

Table 5.3. The Gender Distribuiton of the Respondents (%)

Gender	Ankara	Szeged	Milan	Alcalá de Henares
Male	38.5	45.5	39.9	42.9
Female	50.7	53.9	55.0	49.3

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Prefer not to answer	10.8	0.6	5.0	7.8

Table 5.4 reports the familiarity of respondents to the NBS in question in their cities. In Ankara, those familiar with the METU Forest consist of 94.9%. This is, because the METU Forest exists. In the other cities, depending on the advancement of the project, the familiarity rate increases.

Table 5.4. Familiarity of Respondents to the NBS (%)

Familarity with the NBS	Ankara	Szeged	Milan	Alcalá de Henares
Yes	94.9	61.0	54.9	49.3
No	3.1	3.4	40.7	43.9
Not Sure*	2.0	35.6	4.4	6.8

- *For Szeged, it is “a bit”

6 Results of Social Acceptance

6.1 METU Forest in Ankara (Turkey)

The results for METU Forest are reported in Figure 6.1 and Figure 6.2 as well as in Table 6.2. The explantions for the abbreviations in the algorithms are in Table 6.1. Figure 6.1 illustrates the level of association between indicators, Figure 6.2 shows the reliability of the relationships between indicators and table tabulates the relationship for an easy glance. The significant relationships are illustrated in Figure 6.3 which is the main finding of the analyses. Figure 6.3 is also a base for the implication strategies illustrated in Section 8.

METU Forest is an existing NBS and our analyses refer mostly to the sustainability of the forest, or to post NBS implementation issues. The findings are consistent with the fact that this is a post NBS analysis. The results indicate that the citizens of Ankara accept the forest if they have experience of any kind of activity in the forest. Experience increases knowledge and knowledge leads to a positive opinion about the authorities who is responsible for the METU forest. That authority is recognized as the Middle East Technical University administration. As the trust of Ankara citizens to authorities responsible for the forest increases, the acceptability of forest increases as well. So, the causal relationship is from Experience to Knowledge and from Knowledge to Trust as depicted in Figure 6.3.

On one hand, citizens are aware of the risks related to the forest, but on the other hand they are also aware of the benefits of it. Results shows that benefits overweigh the risks (Table 6.2). Thus, the maintenance and expansion of the forest is not expected to encounter a

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resistance from the community. It seems that Ankara citizens see the forest as a solution to the environmental and social problems such as climate change, air pollution, health problems, safety, well-being of the citizens, etc. As the Problem Perception indicates the benefits are not personal only but also about the well-being of the community, environment, pollution and climate. Problem perception is directly influencing the social acceptance.

Another interesting finding is related to the involvement of the citizens to the decision-making process related to the forest. If individuals are a part of the decision process, they trust the authorities who are responsible to the forest. This inclusiveness indirectly influences the acceptability of the forest.

The Figure 6.3 summarizes the significant findings of the analyses. The flow shows the path through which policy makers can influence social acceptance. This diagram will be the base for the implementation strategy in Section 8.

Key take aways:

- Perceived benefits of the urban forest dominate the perceived risks
- Perceived benefits of urban forest are at the societal level rather than at the individual level
- Involvement in decision making processes increases acceptance
- Causality runs from experience to knowledge and from knowledge to trust

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Figure 6. 1 . METU Forest Results – PLS Algorithm

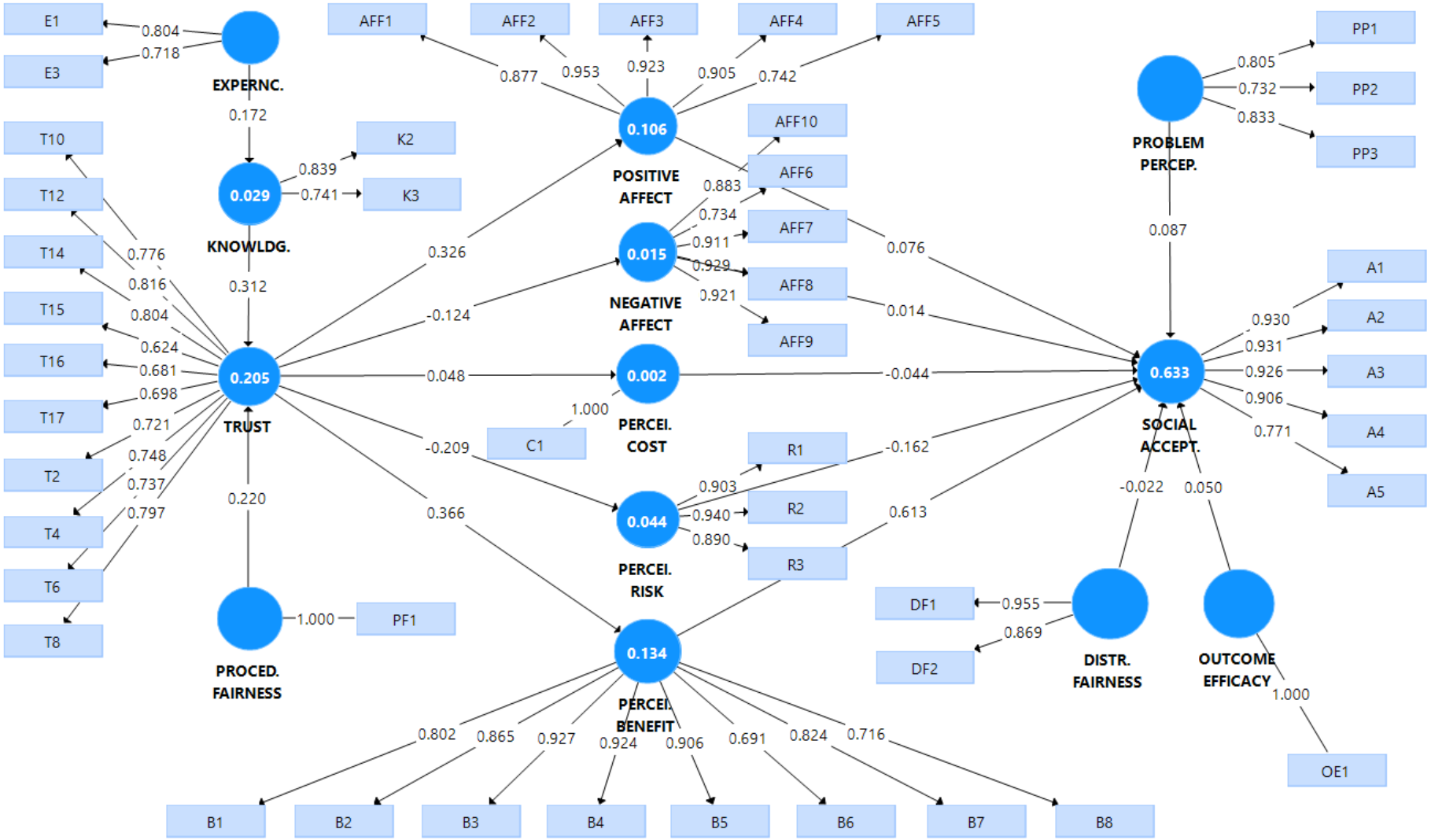

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Figure 6. 2 . METU Forest Results – BOOTSTRAPPING

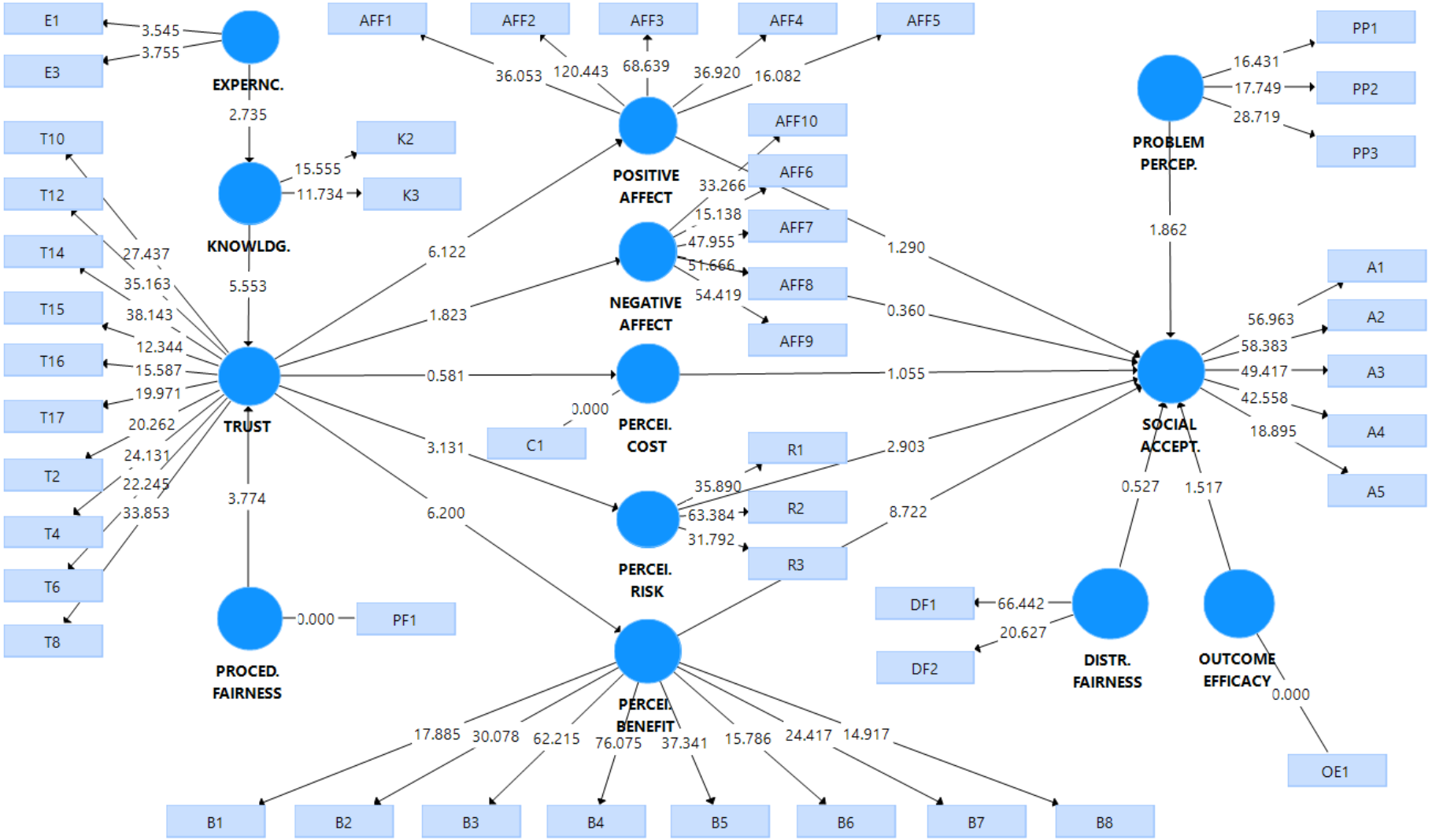

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Table 6.1. Explanations for the Abbreviations in Algorithims

Survey Items	Source of the Item
Experience	
Experience of the NBS (E1)	Self-constructed
Rating of the experience (E2)	Self-constructed
Proximity to the NBS (E3)	Self-constructed
Knowledge	
Familiarity (K1)	Self-constructed
Sufficiency of knowledge of the NBS (K2)	Self-constructed
Sufficiency of opportunities to be informed (K3)	Self-constructed
Trust *	
Reliability (regulators) (T1)	Tokushige et al. (2007)
Reliability (operators) (T2)	Tokushige et al. (2007)
Disclosure of information about shale gas (regulators) (T3)	Tokushige et al. (2007)
Disclosure of information about shale gas (operators) (T4)	Tokushige et al. (2007)
Disclosure of information about alternatives to shale gas (regulators) (T5)	Self-constructed
Disclosure of information about alternatives to shale gas (operators) (T6)	Self-constructed
Intentions (regulators) (T7)	Bronfman et al. (2012), Huijts (2012) , Huijts et al. (2007)
Intentions (operators) (T8)	Bronfman et al. (2012), Huijts (2012) , Huijts et al. (2007)
Competence in assessment (regulators) (T9)	Bronfman et al. (2012), Huijts (2012) , Huijts et al. (2007), Tokushige et al. (2007)
Competence in assessment (operators) (T10)	Bronfman et al. (2012), Huijts (2012) , Huijts et al. (2007), Tokushige et al. (2007)
Ability to interfere when a problem arises (regulators) (T11)	Tokushige et al. (2007), Huijts (2012), Huijts et al. (2007)

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Ability to solve problems (operators) (T12)	Bronfman et al. (2012), Huijts (2012) , Huijts et al. (2007), Tokushige et al. (2007)
Safety concern (regulators) (T13)	Tokushige et al. (2007), Huijts (2012)
Safety concerns (operators) (T14)	Tokushige et al. (2007), Huijts (2012)
Transparency in planning (T15)	Musall and Kuik (2011)
Transparency in implementation (T16)	Musall and Kuik (2011)
Political independence (operators) (T17)	Bronfman et al. (2012)
Positive Affect	
Satisfaction (AFF1)	Huijts (2012)
Joy (AFF2)	Huijts (2012)
Hope (AFF3)	Huijts (2012)
Calmness (AFF4)	Huijts (2012)
Pride (AFF5)	Huijts (2012)
Negative Affect	
Worry (AFF6)	Huijts (2012)
Stress (AFF7)	Huijts (2012)
Powerlessness (AFF8)	Huijts (2012)
Fear (AFF9)	Huijts (2012)
Anger (AFF10)	Huijts (2012)
Perceived Risks	
Personal risk (R1)	Self-constructed following the approach of Tokushige et al. (2007)
Risk to family and friends (R2)	Self-constructed
Social risk (R3)	Self-constructed following the approach of Tokushige et al. (2007)
Severity of consequences when a problem occurs (R4)	Tokushige et al. (2007)
Safety (R5)	Self-constructed
Perceived Benefits	
Personal benefit (B1)	Tokushige et al. (2007)

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Benefit to family and friends (B2)	Self-constructed
Social benefit (B3)	Tokushige et al. (2007)
Environmental benefit (B4)	Huijts et al. (2007), Bronfman et al. (2012)
Benefit to future generations (B5)	Tokushige et al. (2007)
Economic benefit (B6)	Huijts (2012)
Development necessity (B7)	Tokushige et al. (2007)
Positive impact on climate (B8)**	
Perceived Costs	
Development costs (C1)	Huijts (2012)
Procedural Fairness	
Inclusion in decision making (PF1)	Huijts (2012)
Distributive Fairness	
Fair distribution of benefits (DF1)	Self-constructed following the approach of Huijts (2012)
Fair distribution of risks (DF1)	Self-constructed following the approach of Huijts (2012)
Problem Perception	
Need for preventing global warming (PP1)	Tokushige et al. (2007)
Global warming as a concept against nature's laws (PP2)	Tokushige et al. (2007)
Global warming as a negative legacy from the development of civilization (PP3)	Tokushige et al. (2007)
Outcome Efficacy	
Consideration of opinions (OE1)	Huijts (2012)
Social Norm * **	
The expectation that people important to them will desire the person to act in favour of the NBS (SN1)	Huijts (2012)
Personal Norm * **	
The parallel between one's principles and acting in favour of the NBS	Huijts (2012)
Intention to Accept	

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Probability of a personal visit	Self-constructed
Probability of a visit by family and friends	Self-constructed
Probability of a visit by society	Self-constructed
Acceptance	
Personal acceptance (A1)	Tokushige et al. (2007)
Social acceptance (A2)	Tokushige et al. (2007)
Acceptance of future generations (A3)	Tokushige et al. (2007)
Environmental acceptance (A4)	Bronfman et al. (2012)
Not in my back yard (NIMBY) (A5)	Tokushige et al. (2007)

* The indicators of trust that are related to regulators do not exist in the case of the Forest Garden in Alcalá de Henares as the regulating institution and the project implementer are the same. The item numbers for this factor have also been adjusted accordingly.

** This item is present in the cases of METU Forest, Tisza River Bank and the Forest Garden in Alcalá de Henares since project partners have identified it as an important benefit particular to the NBS.

*** The preliminary results obtained from a pilot run of the questionnaire in METU campus suggested that respondents in Turkey were not comfortable answering questions about social and personal norms. A significant portion of respondents either left these questions blank or provided feedback about discomfort. With the intention of not distorting the estimation results, we removed these factors in the METU Forest case.

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Table 6.2. METU Forest Results

Independent V.	Dependent V.	Effect Size	T-Statistic	P-Value	Hypothesis Supported	R Square
Determinants of "Trust"						
Experience	Knowledge	0,172	2,735	0,007	Yes (1% Level)	2.9%
Knowledge	Trust	0,312	5,553	0,000	Yes (0.1% Level)	
Procedural Fairness	Trust	0,220	3,774	0,000	Yes (0.1% Level)	20.5%
Outcomes of "Trust"						
Trust	Positive Affect	0,326	6,122	0,000	Yes (0.1% Level)	10.6%
Trust	Negative Affect	-0,124	1,823	0,079	Yes (10% Level)	1.5%
Trust	Perceived Cost	0,048	0,581	0,546	Not Supported	0.2%
Trust	Perceived Risk	-0,209	3,131	0,001	Yes (0.1% Level)	4.4%
Trust	Perceived Benefits	0,366	6,200	0,000	Yes (0.1% Level)	13.4%
Impact on "Social Acceptance"						
Positive Affect	Social Acceptance	0,076	1,290	0,194	Not Supported	
Negative Affect	Social Acceptance	0,014	0,360	0,725	Not Supported	
Perceived Cost	Social Acceptance	-0,044	1,055	0,279	Not Supported	
Perceived Risk	Social Acceptance	-0,162	2,903	0,006	Yes (1% Level)	
Perceived Benefits	Social Acceptance	0,613	8,722	0,000	Yes (0.1% Level)	
Problem Perception	Social Acceptance	0,087	1,862	0,080	Yes (10% Level)	
Distributive Fairness	Social Acceptance	-0,022	0,527	0,599	Not Supported	
Outcome Efficacy	Social Acceptance	0,050	1,517	0,138	Not Supported	63.3%

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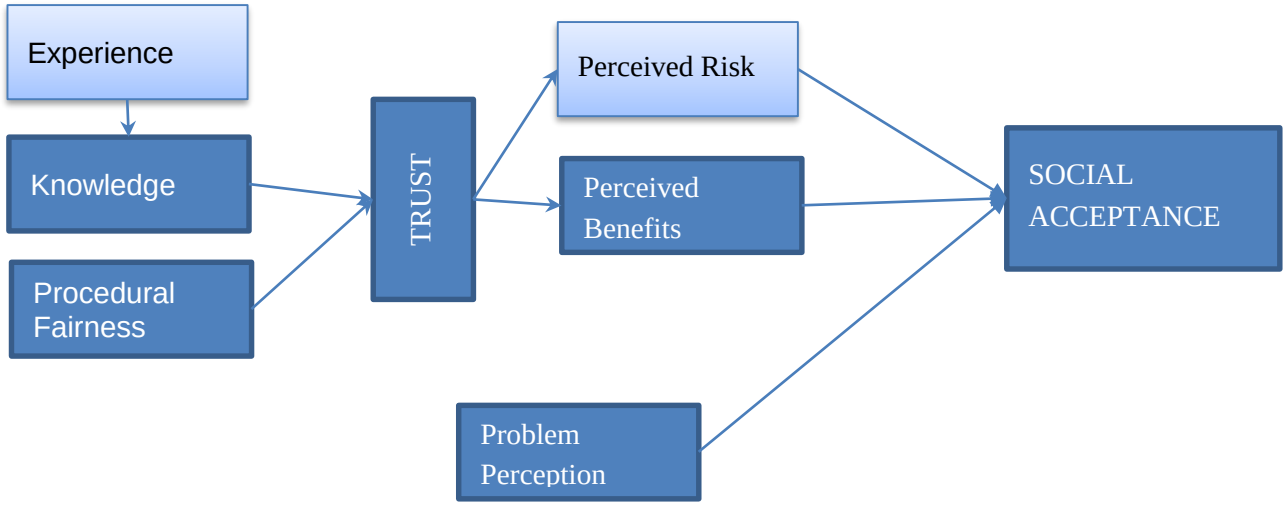
Figure 6. 3 . Key indicators of Social Acceptance for METU Forest



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6.2 Tisza River Bank in Szeged (Hungary)

The results for The Tisza River Bank are reported in Figure 6.4 and Figure 6.5 as well as in Table 6.2. Figure 6.4 illustrates the level of association between indicators, Figure 6.4 shows the reliability of the relationships between indicators and table tabulates the relationship for an easy glance. The explantions for the abbreviations in the algorithms are in Table 6.1. The significant relationships are illustrated in Figure 6.6 which is the main finding of the analyses. Figure 6.6 is also a base for the implication strategy illustrated in Section 8.

The results show that distributional and procedural fairness forms the initial important key factors that determine the social acceptance (Figure 6.6). Both distributive and procedural fairness influence the social acceptance directly. These results indicate that, for the citizens of Szeged, the Tisza River bank rehabilitation is seamlessly accepted if the people are involved in the decision-making process and if the risks and benefits of the NBS are fairly distributed among the citizens of Szeged.

Procedural fairness also influences the trust to authorities and the river bank plan. A strong formation of trust leads citizens to evaluate risks, benefits and costs of the NBS. These evaluations will have positive and/or negative effects on attitudes directly and intentions indirectly which eventually shape the behavior towards acceptance. In short, the causal relations go from procedural fairness to trust and then to evaluation of risk, benefits and costs as well as the positive and negative perceptions about the NBS.

The results in Table 6.3 also show that, in general, the key factors that are in favor of the NBS overweigh those against it.

Key take aways:

- Distributional justice (for both benefits and risks) and procedural justice are key drivers of acceptance
- Procedural fairness improves trust for authorities
- Strong trust leads cost, benefit, and risk assessments by the citizens
- Causality runs from procedural fairness to trust and from trust to evaluation of costs, benefits, and risks, which in turn drive social acceptance

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Figure 6. 4 . Tisza River Bank Results – PLS Algorithm

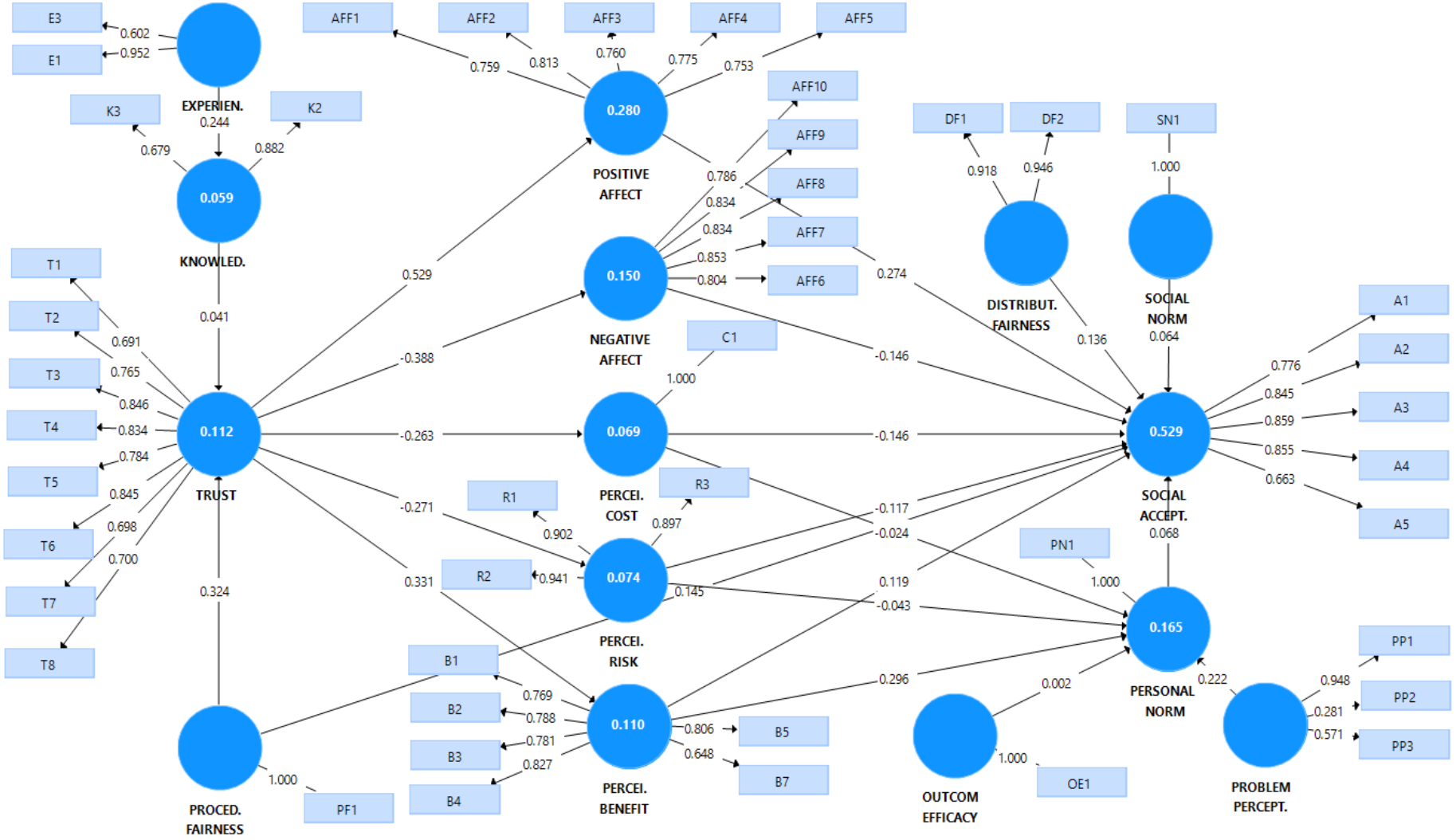

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Figure 6. 5 . Tisza River Bank Results – BOOTSTRAPPING

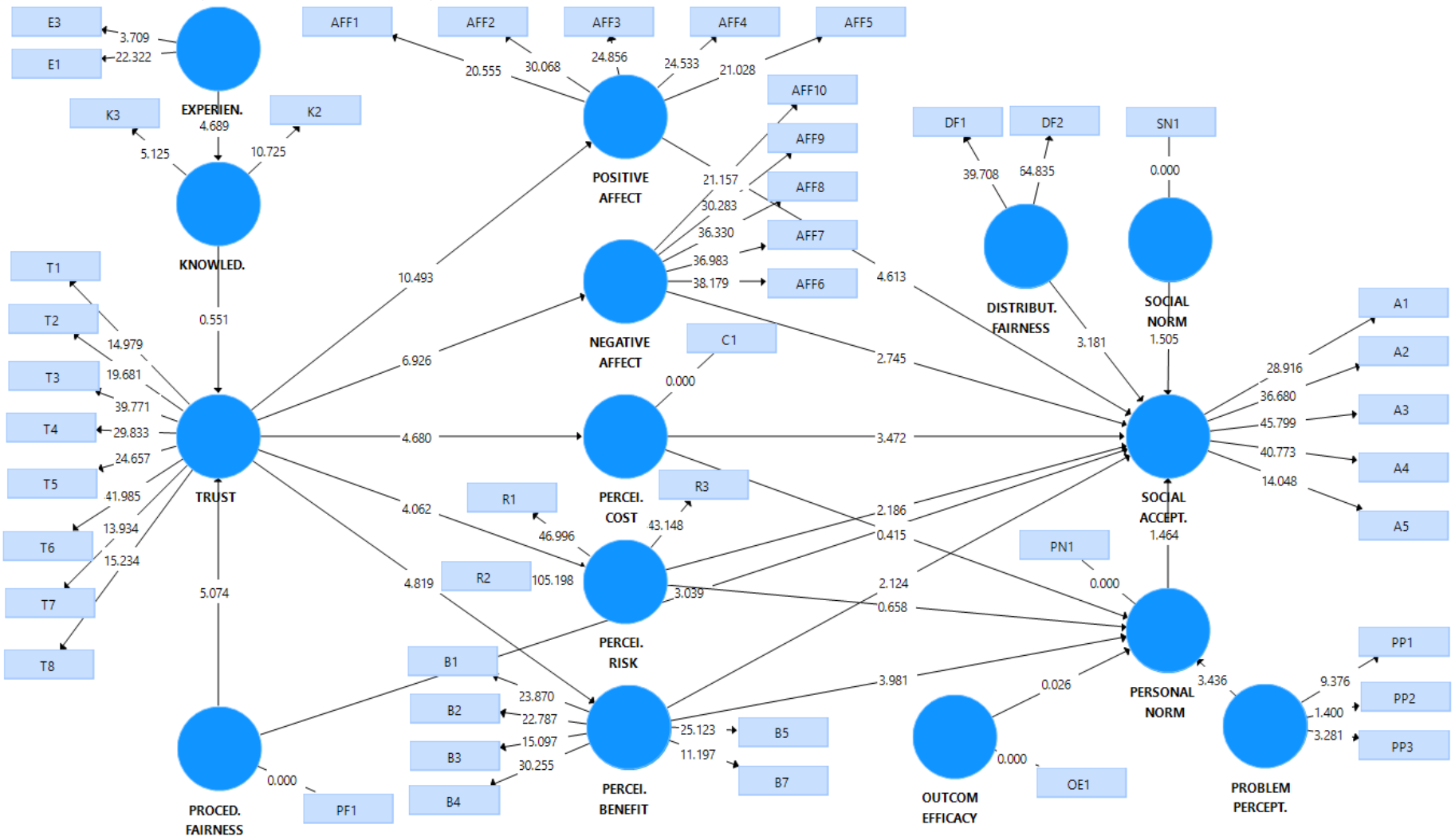

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Table 6.3. Tisza River Bank Results

Independent V.	Dependent V.	Effect Size	T-Statistic	P-Value	Hypothesis Supported?	R Square
Determinants of "Trust"						
Experience	Knowledge	0,244	4,689	0,000	Yes (0.1% Level)	5.9%
Knowledge	Trust	0,041	0,551	0,582	Not Supported	
Procedural Fairness	Trust	0,324	5,074	0,000	Yes (0.1% Level)	11.2%
Outcomes of "Trust"						
Trust	Positive Affect	0,529	10,493	0,000	Yes (0.1% Level)	28%
Trust	Negative Affect	-0,388	6,926	0,000	Yes (0.1% Level)	15.0%
Trust	Perceived Cost	-0,263	4,680	0,000	Yes (0.1% Level)	6.9%
Trust	Perceived Risk	-0,271	4,062	0,000	Yes (0.1% Level)	7.4%
Trust	Perceived Benefits	0,331	4,819	0,000	Yes (0.1% Level)	11.0%
Impact on "Social Acceptance"						
Positive Affect	Social Acceptance	0,274	4,613	0,000	Yes (0.1% Level)	
Negative Affect	Social Acceptance	-0,146	2,745	0,006	Yes (1% Level)	
Perceived Cost	Social Acceptance	-0,146	3,472	0,001	Yes (0.1% Level)	
Perceived Risk	Social Acceptance	-0,117	2,186	0,029	Yes (5% Level)	
Perceived Benefits	Social Acceptance	0,119	2,124	0,034	Yes (5% Level)	
Procedural Fairness	Social Acceptance	0,145	3,039	0,002	Yes (1% Level)	
Distributive Fairness	Social Acceptance	0,136	3,181	0,002	Yes (1% Level)	
Social Norm	Social Acceptance	0,064	1,505	0,133	Not Supported	
Personal Norm	Social Acceptance	0,068	1,464	0,144	Not Supported	52.9%
Impact on "Personal Norm"						
Perceived Cost	Personal Norm	-0,022	0,415	0,678	Not Supported	
Perceived Risk	Personal Norm	-0,050	0,658	0,511	Not Supported	
Perceived Benefits	Personal Norm	0,293	3,981	0,000	Yes (0.1% Level)	
Problem Perception	Personal Norm	0,222	3,436	0,001	Yes (0.1% Level)	
Outcome Efficacy	Personal Norm	0,001	0,026	0,979	Not Supported	16.5%

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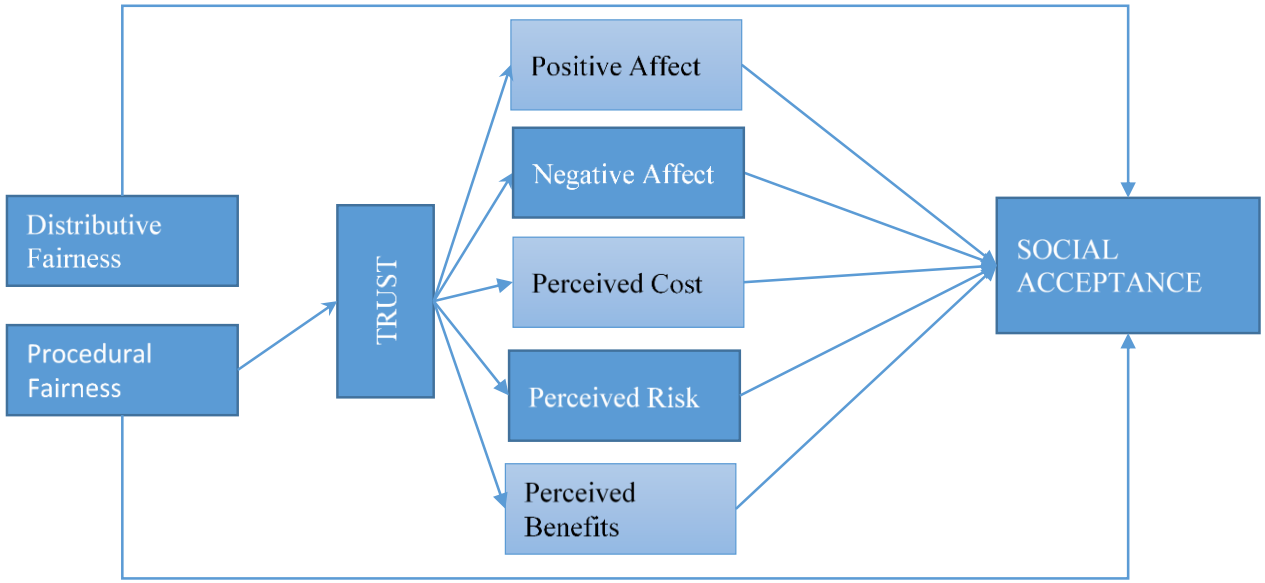
Figure 6. 6 . Key indicators of Social Acceptance for Tisza River Bank



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6.3 Quarry Plan in Milan (Italy)

The results for the Quarries in Milan are reported in Figure 6.7, Figure 6.8 and in Table 6.3. Figure 6.7 illustrates the level of association between indicators, Figure 6.8 shows the reliability of the relationships between indicators and table depicts the relationship for an easy glance. The explantions for the abbreviations in the algorithms are in Table 6.1. The significant relationships are illustrated in Figure 6.9 which is the main finding of the analyses. Figure 6.9 will be used as base for the implication strategy illustrated in Section 8.

For Quarries in Milan case, procedural fairness, cost of NBS and the outcome efficacy are the main determinants of social acceptance. These key determinants influence social acceptance indirectly, while personal evaluations of risks, costs and benefits, and personal norms have direct impact on acceptance.

Outcome efficacy indicates that the people of Milan are in favor the Quarry plan and they believe that their behavior will positively influence the implementation of the plan. It is important to know that this behavior establishes a personal norm in Milan.

Figure 6.9 illustrates that the order of causality starts from procedural fairness which forms trust for both authorities and the NBS. After formation of trust, positive and negative affects of the NBS and evaluation of risks and benefits shapes the attitude towards the NBS.

The evaluation of risks and benefits both directly and, through the personal norms, indirectly influence the acceptance.

Even though there is a general acceptance of the NBS, the results indicate that the risk perception and negative affect of the NBS may require some caution. These two issues should be the main ingredients of NBS implementation strategy in Milan.

Key take aways:

- Procedural fairness, cost, and outcome efficacy are driving factors of social acceptance
- Outcome efficacy refers to formation of personal norm due to citizens' beliefs that their behavior will have positive impact on the implementation plan
- Causality runs from procedural fairness that leads to trust for authorities and the NBS itself.
- Trust then forms perceptions about the effects of the NBS and assessment of costs and benefits that shape the the attitudes towards the NBS

-

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Figure 6. 7 . Quarries in Milan Results – PLS Algorithm

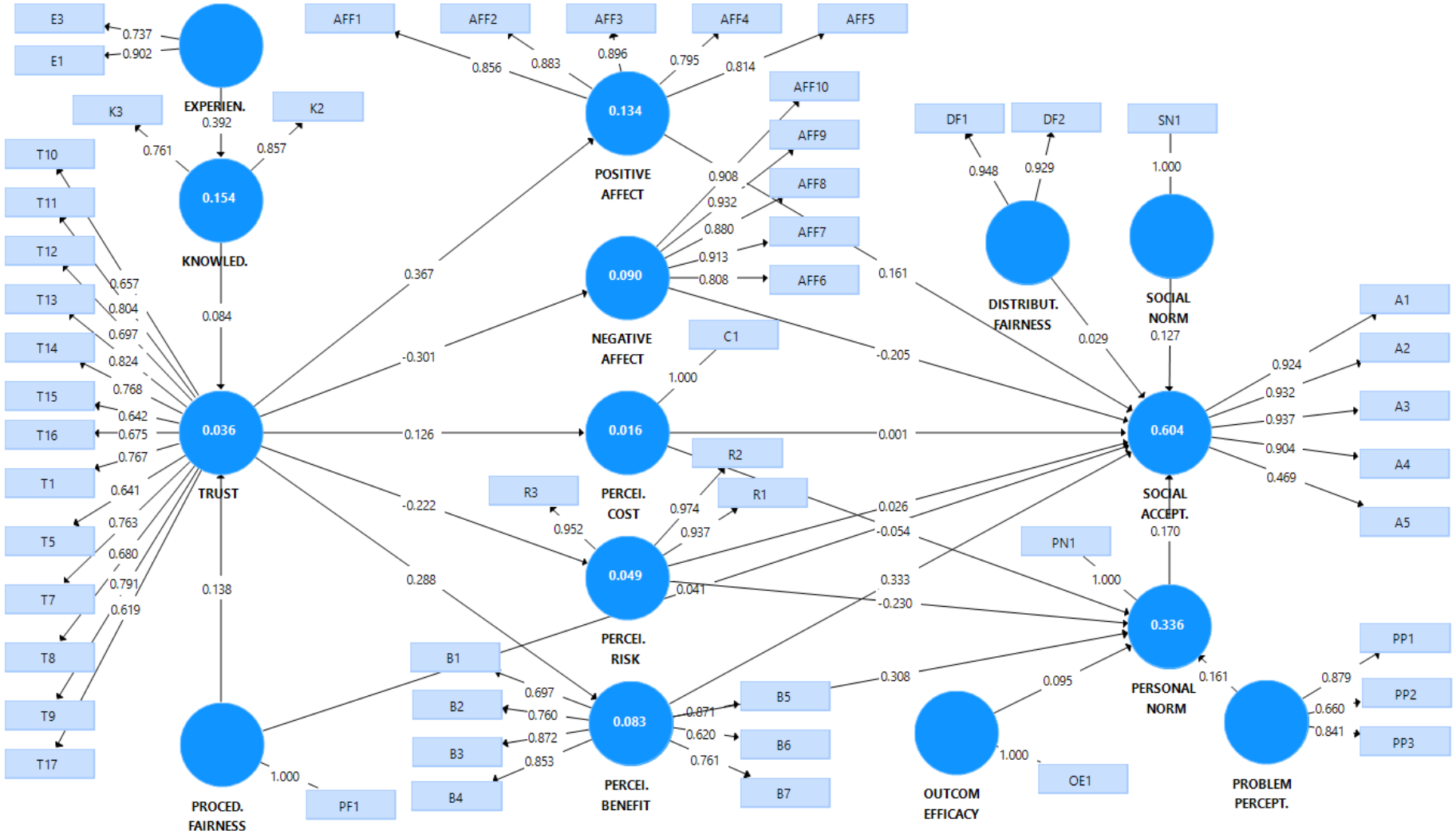

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Figure 6. 8 . Quarries in Milan Results – BOOTSTRAPPING

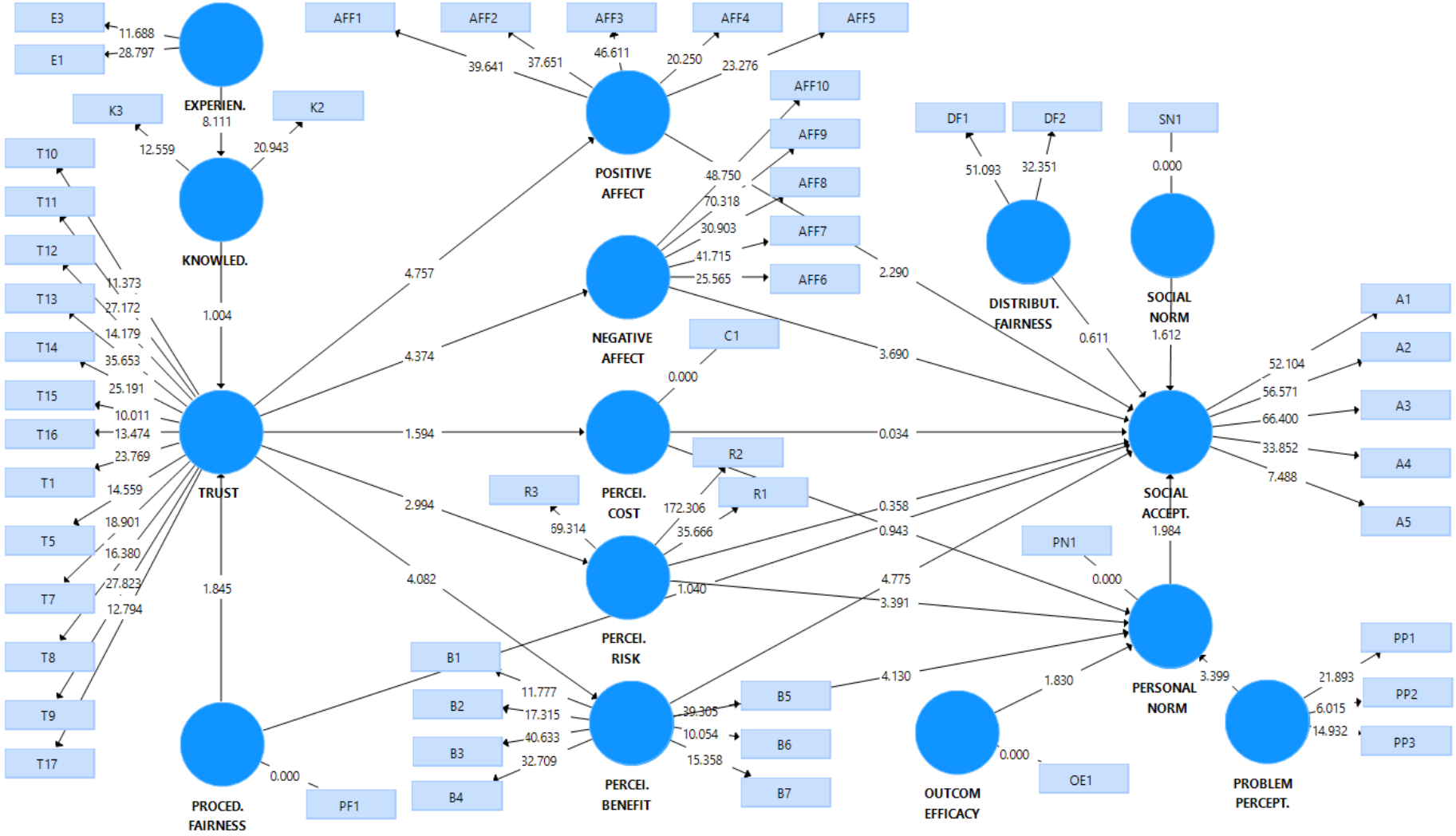

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Table 6.4. Quarries in Milan Results

Independent V.	Dependent V.	Effect Size	T-Statistic	P-Value	Hypothesis Supported?	R Square
Determinants of "Trust"						
Experience	Knowledge	0,392	8,111		Yes (0.1% Level)	15.4%
Knowledge	Trust	0,084	1,004	0,282	Not Supported	3.6%
Procedural Fairness	Trust	0,138	1,845	0,064	Yes (10% Level)	3.6%
Outcomes of "Trust"						
Trust	Positive Affect	0,367	4,757	0,000	Yes (0.1% Level)	13.4%
Trust	Negative Affect	-0,301	4,374	0,000	Yes (0.1% Level)	9,00%
Trust	Perceived Cost	0,126	1,594	0,112	Not Supported	1.6%
Trust	Perceived Risk	-0,222	2,994	0,003	Yes (1% Level)	4.9%
Trust	Perceived Benefits	0,288	4,082	0,000	Yes (0.1% Level)	8.3%
Impact on "Social Acceptance"						
Positive Affect	Social Acceptance	0,161	2,290	0,022	Yes (5% Level)	
Negative Affect	Social Acceptance	-0,205	3,690	0,000	Yes (0.1% Level)	
Perceived Cost	Social Acceptance	0,001	0,034	0,974	Not Supported	
Perceived Risk	Social Acceptance	0,026	0,358	0,711	Not Supported	
Perceived Benefits	Social Acceptance	0,333	4,775	0,000	Yes (0.1% Level)	
Procedural Fairness	Social Acceptance	0,041	1,040	0,311	Not Supported	
Distributive Fairness	Social Acceptance	0,029	0,611	0,542	Not Supported	
Social Norm	Social Acceptance	0,127	1,612	0,104	Not Supported	
Personal Norm	Social Acceptance	0,170	1,984	0,048	Yes (5% Level)	60.4%
Impact on "Personal Norm"						
Perceived Cost	Personal Norm	-0,054	0,943	0,348	Not Supported	
Perceived Risk	Personal Norm	-0,230	3,391	0,001	Yes (0.1% Level)	
Perceived Benefits	Personal Norm	0,308	4,130	0,000	Yes (0.1% Level)	
Problem Perception	Personal Norm	0,161	3,399	0,001	Yes (0.1% Level)	
Outcome Efficacy	Personal Norm	0,095	1,830	0,066	Yes (10% Level)	33.6%

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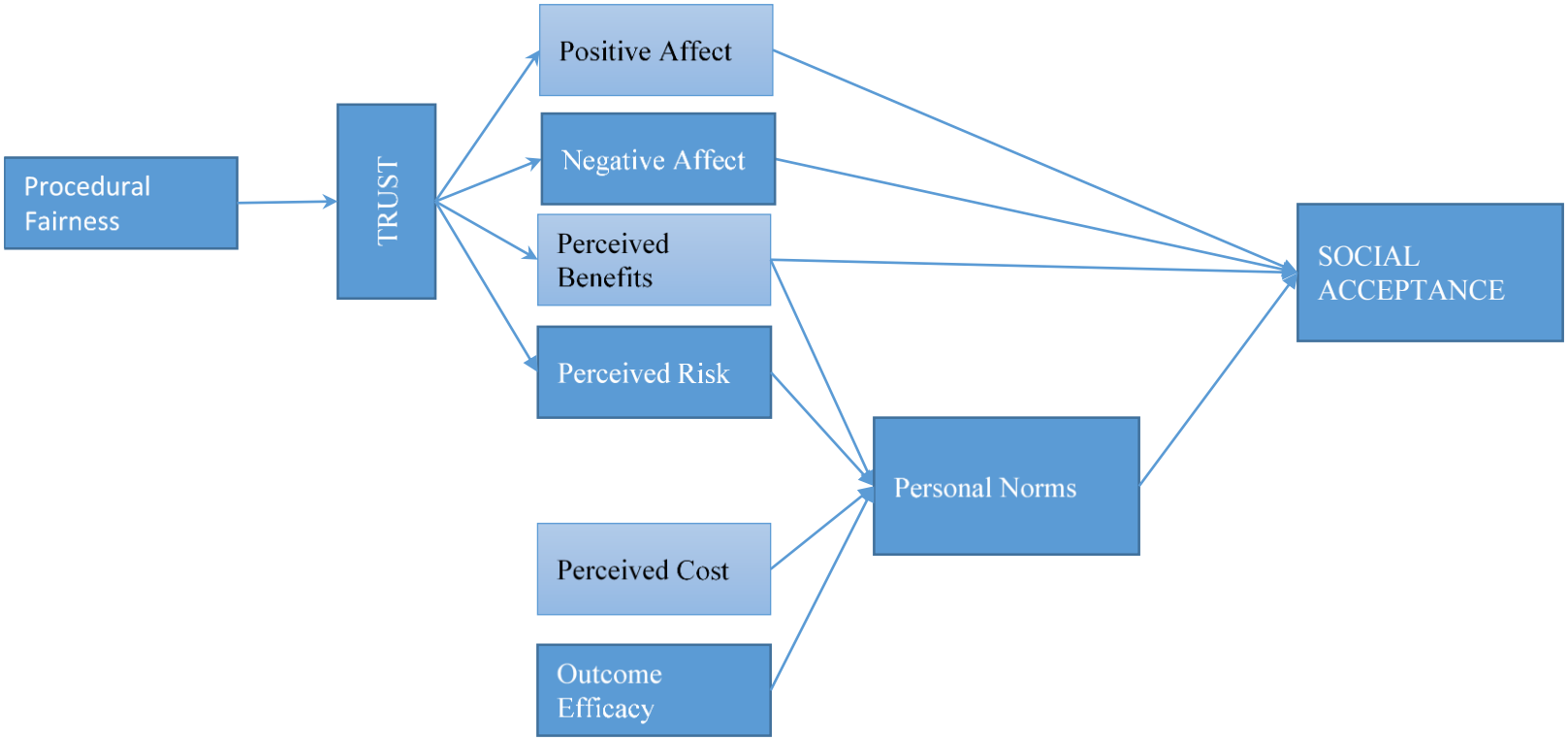
Figure 6. 9 . Key indicators of Social Acceptance for Quarries in Milan Results



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6.4 The Forest Garden in Alcalá de Henares (Spain)

The results for the Forest Garden in Alcalá de Henares are reported in Figure 6.10, Figure 6.11 and in Table 6.4. Figure 6.10 illustrates the level of association between indicators, Figure 6.11 shows the reliability of the relationships between indicators and table depicts the relationship for an easy glance. The explantions for the abbreviations in the algorithms are in Table 6.1. The significant relationships are illustrated in Figure 6.12 which is the main finding of the analyses, which will be used as base for the implication strategy illustrated in Section 8.

Similar to the METU Forest case, the citizens of Alcalá de Henares accept the Forest Garden seamlessly if they have experience of any kind of activity in the forest. Experience shapes knowledge and knowledge forms a positive perception for the authorities and the NBS.

As the trust to authority increases, the acceptability of forest increases through the personal evaluations of risks, costs and benefits, and through personal norms which are mainly shaped by perceived risks. Thus, the causality goes from experience to knowledge, from knowledge to trust, from trust to personal evaluations and from evaluations to acceptance directly or through personal norms indirectly (Figure 6.12).

The involvement of the citizens to the decision-making process seems important for Alcalá de Henares citizens. If individuals are a part of the decision process, they trust the authorities who are responsible for the forest garden. This inclusiveness directly influences the acceptability of the NBS.

The following Figure 6.12 summarizes the significant findings of the analyses. The flow shows the path through which policy makers can influence social acceptance. This diagram will be the base for the implementation strategy in Section 8.

Key take aways:

- Involvement in decision making processes increases trust and acceptance of forest garden
- Causality runs from experience to knowledge and from knowledge to trust, which directly influences personal assessments of risks, costs and benefits and formation of personal norms about the NBS
    -

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Figure 6. 1 0 . The Forest Garden Results – PLS Algorithm

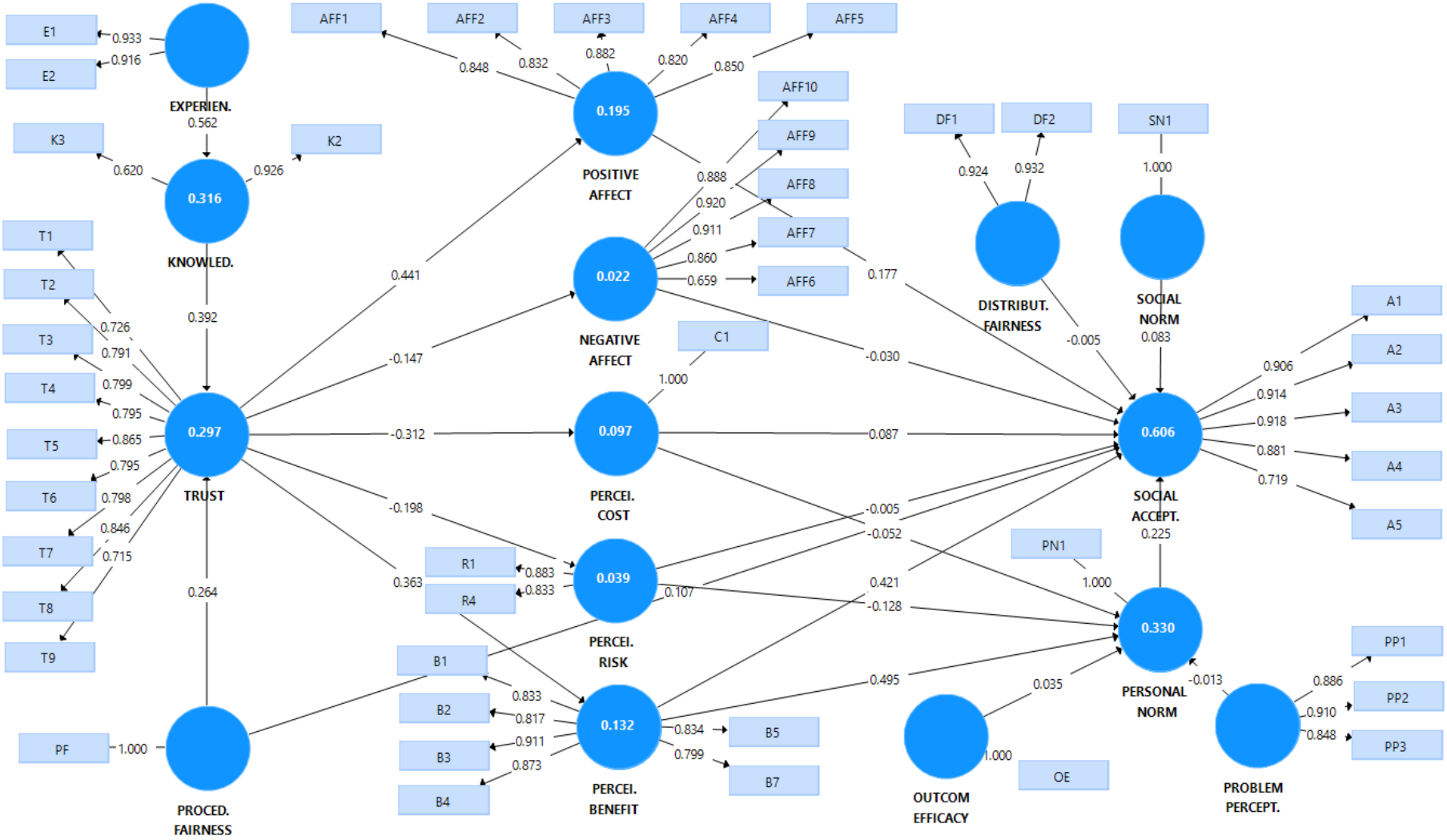

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Figure 6. 1 1 . The Forest Garden Results – BOOTSTRAPPING

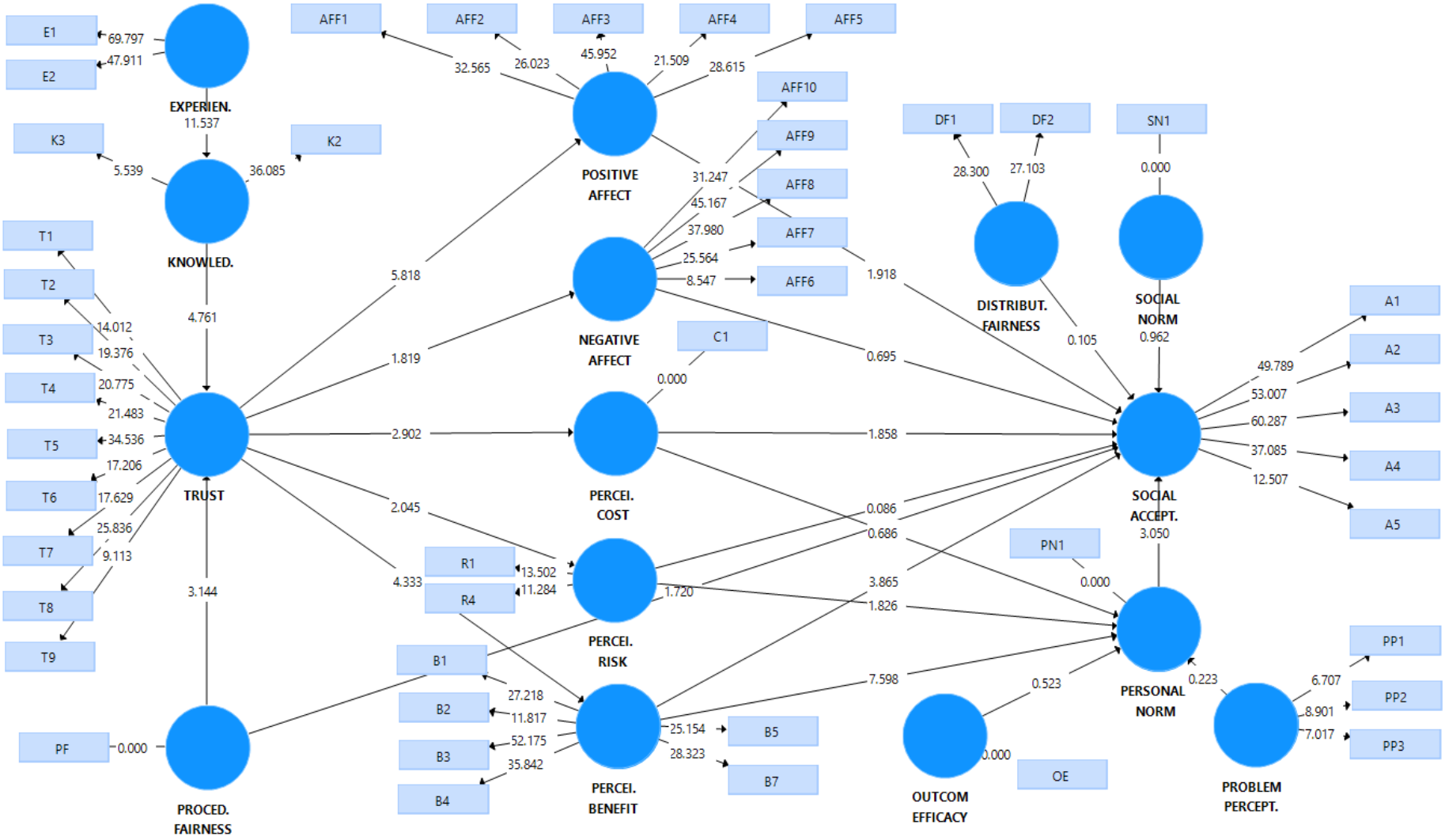

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Table 6.5. The Forest Garden Results

Independent V.	Dependent V.	Effect Size	T-Statistic	P-Value	Hypothesis Supported?	R Square
Determinants Of "Trust"						
Experience	Knowledge	0,562	11,537	0,000	Supported (0.1% Level)	31.6%
Knowledge	Trust	0,392	4,761	0,000	Supported (0.1% Level)	
Procedural Fairness	Trust	0,264	3,144	0,020	Supported (5% Level)	29.7%
Outcomes Of "Trust"						
Trust	Positive Affect	0,441	5,818	0,000	Supported (0.1% Level)	19.5%
Trust	Negative Affect	-0,147	1,819	0,069	Supported (10% Level)	2.2%
Trust	Perceived Cost	-0,312	2,902	0,004	Supported (1% Level)	9.7%
Trust	Perceived Risk	-0,198	2,045	0,041	Supported (5% Level)	3.9%
Trust	Perceived Benefits	0,363	4,333	0,000	Supported (0.1% Level)	13.2%
Impact On "Social Acceptance"						
Positive Affect	Social Acceptance	0,177	1,918	0,055	Supported (10% Level)	
Negative Affect	Social Acceptance	-0,030	0,695	0,487	Not Supported	
Perceived Cost	Social Acceptance	0,087	1,858	0,063	Supported (10% Level)	
Perceived Risk	Social Acceptance	0,005	0,086	0,931	Not Supported	
Perceived Benefits	Social Acceptance	0,421	3,865	0,000	Supported (0.1% Level)	
Procedural Fairness	Social Acceptance	0,107	1,720	0,086	Supported (10% Level)	
Distributive Fairness	Social Acceptance	-0,005	0,105	0,916	Not Supported	
Social Norm	Social Acceptance	0,083	0,962	0,336	Not Supported	
Personal Norm	Social Acceptance	0,225	3,050	0,020	Supported (5% Level)	60.6%
Impact On "Personal Norm"						
Perceived Cost	Personal Norm	-0,052	0,686	0,493	Not Supported	
Perceived Risk	Personal Norm	-0,128	1,826	0,068	Supported (10% Level)	
Perceived Benefits	Personal Norm	0,495	7,598	0,000	Supported (0.1% Level)	
Problem Perception	Personal Norm	-0,013	0,223	0,824	Not Supported	
Outcome Efficacy	Personal Norm	0,035	0,523	0,601	Not Supported	33.0%

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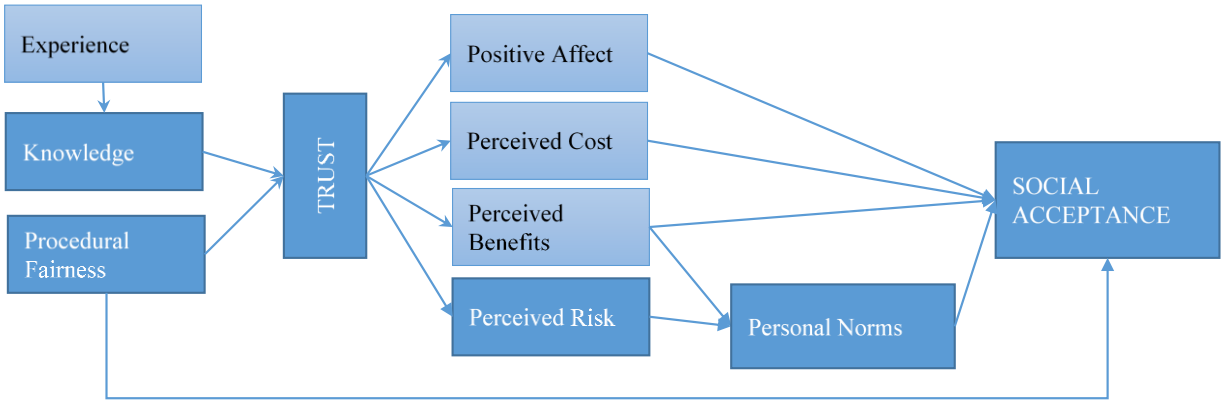
Figure 6. 1 2 . Key indicators of Social Acceptance for the Forest Garden



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7 Findings for Barriers to NBSs from Interviews with Experts

In this section, we present the results of barriers to NBSs.

Table 7.1 lists common factors that are considered as barriers by the experts in Turkey, Spain, Italy, and Hungary. We mostly selected the experts from the cities we have already conducted a field research on NBS. Thus, the factors may also contribute to the NBS implementation strategies in Ankara, Milan, Szeged, and Alcalá de Henares.

It is worth noting that one common barrier that experts mention is resistance from the society, which confirms the importance of social acceptance research. In addition to technical and structural barriers, such as technology, space availability, historical sites, regulation problems, maintenance and management problems, and urban planning capability, those that are antecedent factors of social acceptance, such as lack of participation and knowledge, behavioural change requirements, risks, costs, benefits, and fairness perceptions are also common barriers to NBSs mentioned by experts. Indeed, the social acceptance analysis shows that at in all 4 cases, trust appears to play a central role in social acceptance. Trust has several dimensions, a number of which (regarding regulation, implementation, and management of the NBS) are mentioned by the experts.

To point out a few issues that experts mentioned and that arise as significant in social acceptance analysis: While significant impact of procedural fairness shows the importance of citizen engagement, personal norms seem to have a strong influence on the acceptability of the NBSs in all cases.

There are also NBS specific factors that are captured by the social acceptance analysis but was not mentioned by experts. For example, only in Szeged distributive fairness appears to be significant, but this was not an issue raised by any one of the experts. Hence, it is clear that qualitative and quantitative approaches complement each other in shedding more light on the social dimensions of urban planning.

Experts specifically mentioned that *technology* is an important barrier because lack of new technology prevents stakeholders to plan and implement an NBS. They also focus on the widely used technology in cities and, thus, there remains very limited areas and opportunities for nature-based solutions.

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As it is the case for all investments, the *cost* of NBS is another concern. The costs may increase the burden of stakeholders through taxes and/or external sources.

Table 7.1. Barriers Determined by Expert Interview

Technology
Urban planning capability
Investment costs
Maintenance and management
Lack of social participation
Lack of Commitment of Public Authorities
Available space problems
Resistance from Society
Lack of info about Risk, Cost and Benefits
Regulations problem
Lack of Knowledge
Cultural barriers
Historical sites
Health risks
Behavioural change requirements
Fairness

NBS is a new concept and it seems that it has not been fully understood by citizens, users, policy makers, experts, etc. A strategy of *knowledge* sharing may decrease the resistance of the communities. However, even if people learn the *benefits* of NBS, they may still resist to accept the NBS since they may have lack of information about *risks* and *costs.*

Experts worry about *maintaining and managing* the NBS after implementation of the project. Increasing trust to authorities will increase the possibility of acceptance by the stakeholders.

If NBS is built on or around a *historical site*, a resistance persists in the community. Thus, authorities should find *available space* for some types of NBSs. The lack of available space for NBS is considered a very significant barrier.

If in the end, there is no *behavioral change* on the user side (e.g. citizens do not choose to visit the NBS more frequently, do not change their commuting routes etc.), the NBS will not serve its purpose. A conservative behavior hinders the implementation of NBS or decreases the benefits that could be attained from the NBS.

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Another major concern is related to *health* issues. People may have allergens to some plants or pollens, or tree falls may hurt people while they are outside. These problems may keep people away from the use of NBS.

8 Implementation Strategies and Policy Suggestions for NBS

In this section, we explain the NBS implementation strategies either for the NBS planned to be implemented (Pre NBS) or for the NBS that has already been implemented (Post NBS).

The implementation strategy has two steps:

Step 1: General steps for determination of the social acceptance factors

Step 2: Policy suggestions based on the factors determined

8.1 General Steps for Determination of the Social Acceptance Factors

The Figure 8.1 illustrates the process for the first step. The general preparation includes the determination of the typology of NBS and survey of the literature and the existing NBSs. The typology of the NBS is determined and listed in WP1.

Based on the NBS characteristics, a questionnaire should be developed. The questionnaire development process is explained in Section 4.1. The important issue at this step is whether the NBS is planned or already implemented.

Once the questionnaire is developed, in the next step primary data must be collected. Depending on the methodology, the optimal sample size must be properly determined.

After the data collection, the next step involves analyses. In this step, descriptive analyses and an advanced multivariate method must be utilized. The advanced method should allow us to determine the important factors of the social acceptance. These factors will be used

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for NBS specific policy development. The descriptive statistics will be used both for the factors of social acceptance and for policy development.

Once the factors of social acceptance are determined, a managerial decision must be made on whether to proceed with NBS or not. This decision is especially important if a decision needs to be made for a new NBS project.

If the decision is in favour of NBS, then a policy framework must be developed for a proper implementation of NBS. Policy suggestion is NBS specific and its content is determined by results reported in Section 6.

In the next section, we discuss policy suggestions for the four selected cases based on the findings of analyses in the first step of implementation strategy.

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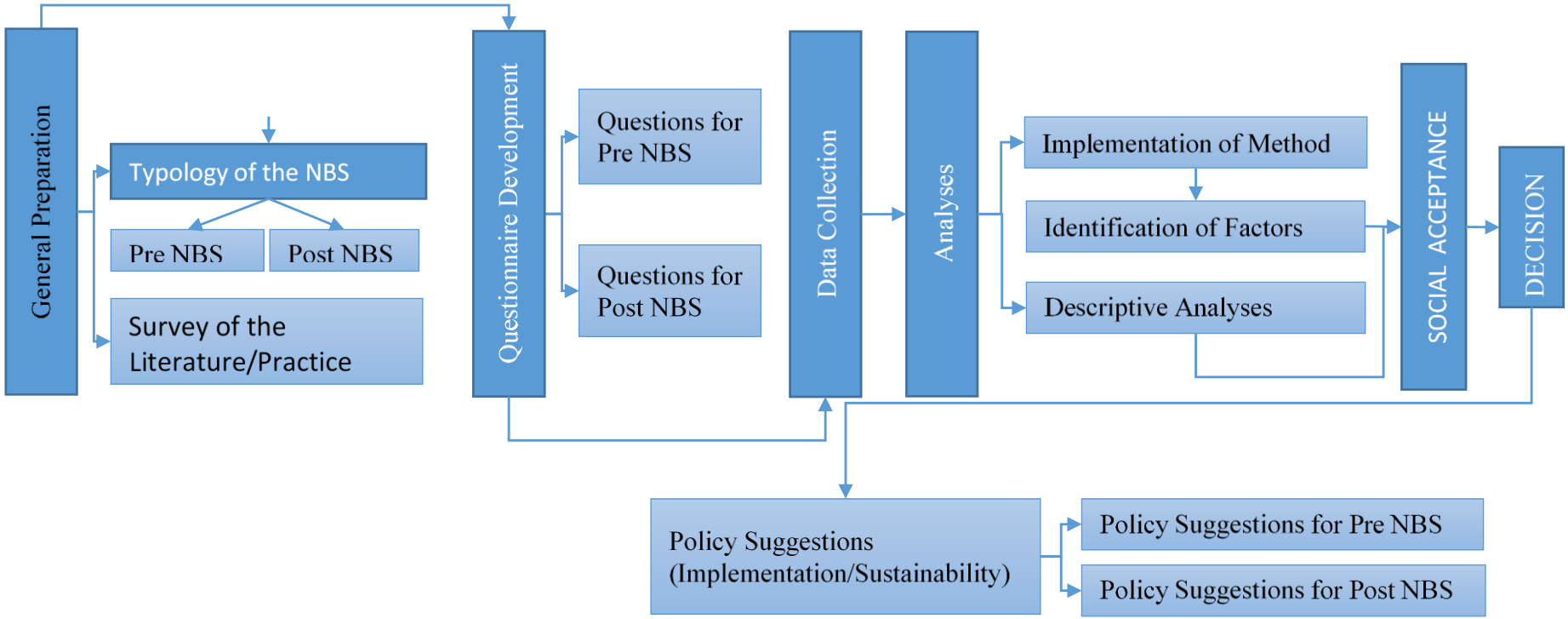
Figure 8. 1 . General Implementation Strategy



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8.2 Policy Suggestions Based on the Key Factors Determined

8.2.1 METU Forest in Ankara

In this section we discuss a strategy for a post-NBS: an urban forest. The METU forest is within the city limits of Ankara and it is under the risk of being destroyed or demolished by rent seeking behaviour. Based on the results from the analyses, in this section we will develop a strategy for the existence and sustainability of the forest. The strategy is based on the diagram in Figure 6.3 and illustrated in the Figure 8.2.

As the results indicate, the most important factors for the trust are knowledge and procedural fairness. To accept, use and protect the METU forest, Ankara residents must be informed, must visit and experience activities in the forest and must be involved in the decision-making processes involving the fate of the forest. Once people form a strong trust to the university authorities, they make a community related and/or personal evaluation of the risks and benefits of the forest. It is obvious that perceived benefits overweigh risks and, empirically, both risks and benefits are the key determinants of social acceptance of the forest. The relevance of these factors was determined by the statistical tests.

The following diagram (Figure 8.2) shows the strategy for the METU Forest:

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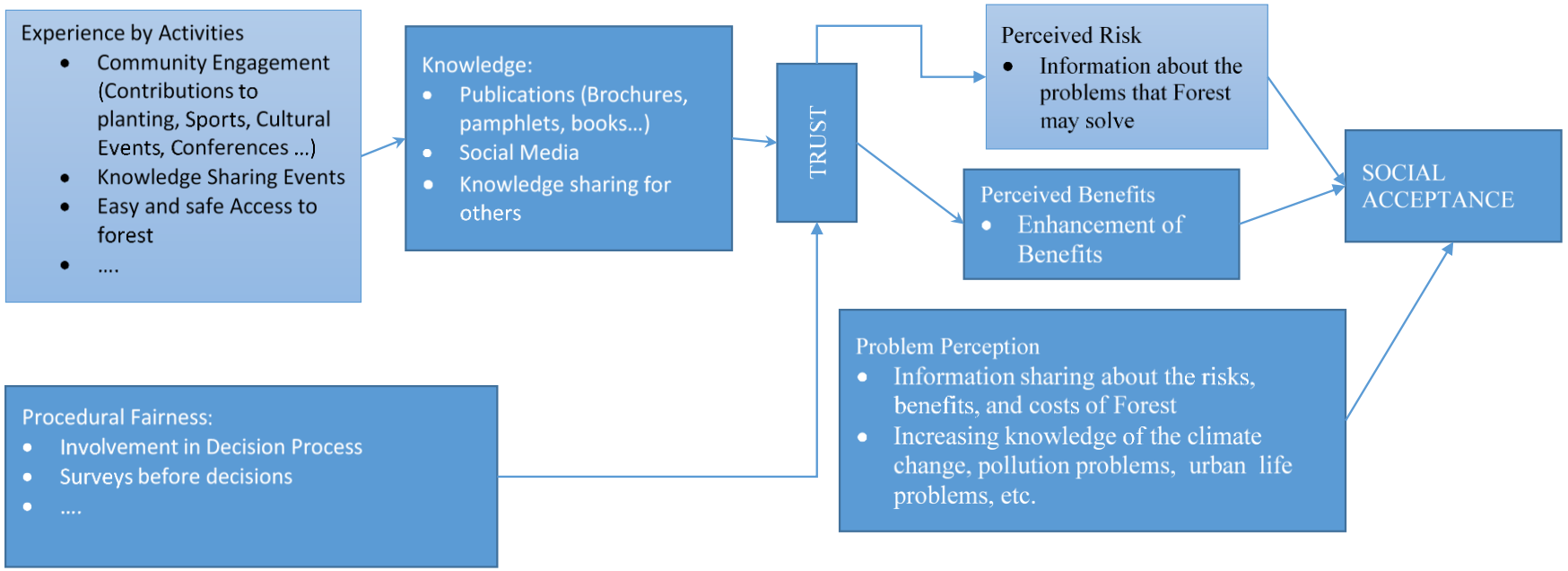
Figure 8. 2 .The Implementation Strategy for METU Forest



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The strategy is determined by key factors and causal relationships between these factors. As the causal interactions indicate, the best strategy should start with engaging Ankara citizens in activities about the METU forest. Experience can be through community engagement, knowledge sharing events, easy and safe access to the forest.

METU forest is totally man-made and, on a regular basis, planting trees is conducted by students, alumni, administrative staff and faculty members. Citizens who are not affiliated with the university may be allowed to join these events. Controlled and periodic educational visits about the plant and animal life in the METU forest ecosystem could be conducted. Citizens should also be involved in the decision-making processes that will have an impact on the sustainability of the forest which contribute to the formation of positive opinions about the NBS and trust for the authorities. These processes include how and where forest expansion and planting of new trees will be conducted and whether a portion of the forest should be sacrificed for other public uses.

University scientific knowledge sharing activities can be held in the buildings around the Eymir Lake in the forest. Every year, METU holds free seminars that are open to public for the purpose of sharing scientific knowledge with the society. These general educational activities as well as METU forest specific scientific fact sharing activities have a potential to reach a wide variety of Ankara citizens. The university has the ability and resources to broadcast these activities from social media to reach a wider audience. For this to be effective regular monitoring and data collection about the METU forest ecosystem would be useful. Results show that Ankara residents generally associate METU forest with positive feelings and are proud of this urban forest. However, they need more knowledge about the ecosystem to actively support and protect this NBS.

The forest and the lake within, creates many possibilities of engagement with community. Sports activities, social and cultural events, scientific and non-scientific conferences, environmental awareness or similar activities, can be held within the boundaries of the forest with involvement of Ankara residents.

METU Forest is protected and the access is managed by the university. Easy access is only possible for anybody affiliated with METU. General public has access to a limited portion of the forest surrounding the Eymir Lake. Easy and safe access to forest by Ankara residents may contribute to the experience.

Experience by itself is not enough for community knowledge improvement. Forest related books, pamphlets, social media as well as information sharing activities about the improvement, preservation and protection of the forest may contribute to the knowledge factor. Activities targeting children will contribute to sustainable acceptability of the forest.

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Once trust to the authorities is formed then people will evaluate the costs and benefits of the forest. The means of knowledge improvement and/or sharing can also be utilized for improving the understanding of both costs and benefits of the forest by community.

8.2.2 Tisza River Bank in Szeged

Unlike METU Forest, Tisza river bank analyses are pre NBS analyses since NBS project is in progress and has not been finished yet. Thus, the questions that are asked are about an NBS that has not been observed or experienced by anybody. This is a very common case and social acceptance is important for such cases because information about acceptability in advance may have an inapt on managerial decision whether to proceed with the project or give it up.

The implementation strategy is summarized in Figure 8.3 below:

As the diagram indicates, distributive and procedural fairness are two important factors for the residents of Szeged to trusts the NBS. Obviously, Szeged residents want to be a part of the decision for the NBS and want to share risks and benefits of the NBS. Since trust eventually determines the need for evaluation of risks, benefits and costs of the NBS, a decision for acceptance will be set after the evaluations.

The following diagram shows the strategy for the Tisza bank:

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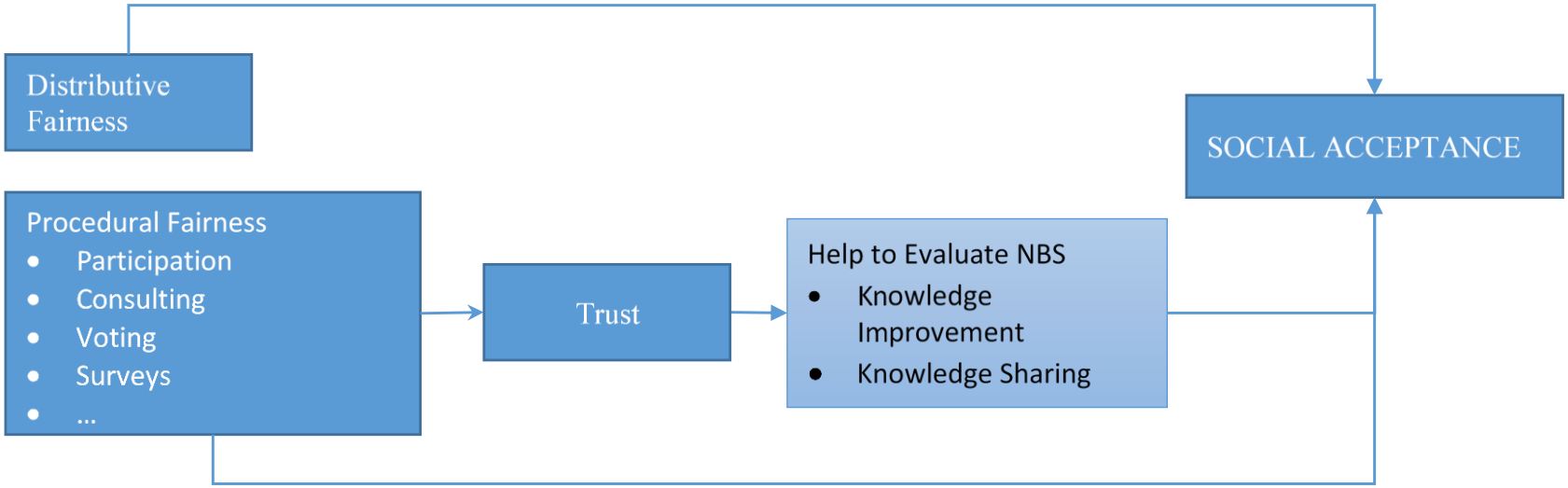
Figure 8. 3 .The Implementation Strategy for Tisza bank



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The best strategy for the Szeged Municipality is to ensure the participation of the citizens in the decision-making process by directly inviting them to the meetings, ask for their opinions, have them vote among different options, and have them fill in surveys, etc. Since actual visits are not possible for a pre-implementation NBS project, like the Tisza river bank, citizen experience can be established via virtual tours.

People must be informed and convinced about the fair distribution of the risks, costs and benefits of the project.

After trust formation, knowledge sharing and knowledge improvement about problems, such as air pollution, climate change, global temperatures, local environmental issues etc, should be conducted for evaluation of the risk, benefits and costs of NBS and a need for change should be clearly established.

In the final stage, if all risks, costs, and benefits are ensured to be fairly distributed, the NBS will not encounter a strong and effective resistance from the community. Instead, fair distribution will boost support from the society.

8.2.3 Quarry Plan in Milan

Based on the findings of analyses for Quarry Plan, the best strategy for the Milan municipality is to ensure the participation of the citizens in the decision-making process by directly inviting them to the meetings, ask for their opinions, have them vote among different options and have them fill in surveys, etc.

After trust formation, knowledge sharing and knowledge improvement about problems, such as air pollution, climate change, global temperatures, local environmental issues, need for change etc, should be conducted for evaluation of the risk, and benefits of NBS.

Contributing to personal norm formation through knowledge sharing related to air pollution, environmental problems, global temperature, urban life problems, and above all the need for change will certainly lead to a more realistic evaluation of the NBS implementation in Milan.

The diagram depicted in Figure 8.4 below shows the strategy for the Quarry Plan:

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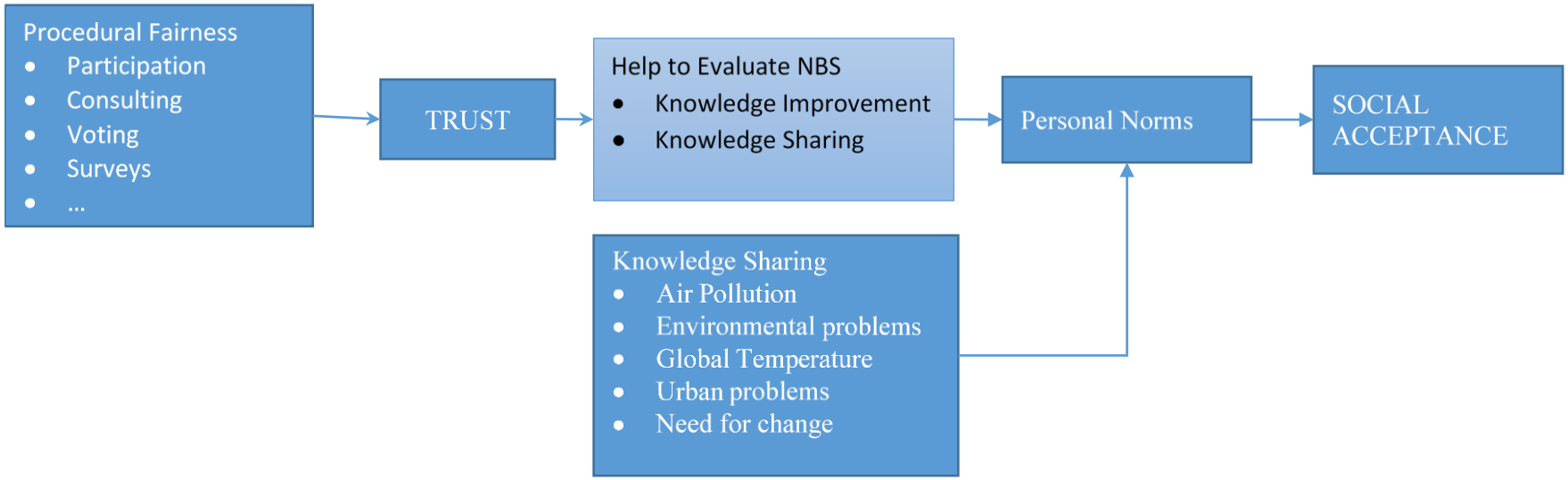
Figure 8. 4 .The Implementation Strategy for Quarry Plan



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8.2.4 The Forest Garden in Alcalá de Henares

As the results indicate, the most important factors for the Forest Garden in Alcalá de Henares are the experience and knowledge indirectly and procedural fairness both directly and indirectly influencing the social acceptance of the Forest Garden. To accept, use and protect the Forest Garden, citizens must be informed, must visit the site, experience or observe similar forests, and also must be a part of the decision-making processes involving the fate of the forest. Once people form a strong trust to the authorities and thus to the Garden, they make a community related and/or personal evaluation of the risks and benefits of the Garden.

The following diagram in Figure 8.5 shows the strategy for the Forest Garden:

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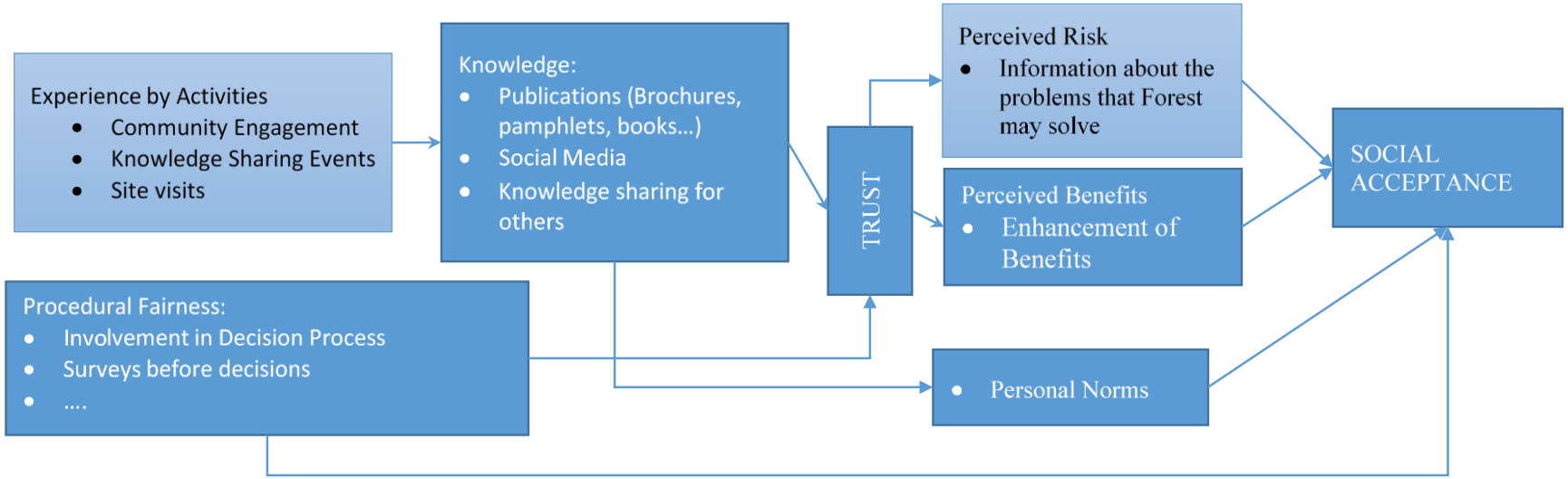
Figure 8. 5 .The Implementation Strategy for the Forest Garden



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Experience by itself is not enough for community knowledge improvement. Forest Garden or NBS related books, pamphlets, social media as well as information sharing activities about the improvements, preservation and protection of the Garden may contribute to the knowledge factor. Actual and virtual tours by school children will improve the experience of future adults.

Once trust to the authorities is formed then people will evaluate the risks and benefits of the Garden. The means of knowledge improvement and/or sharing can also be utilized for improving the understanding of risk and benefits of the forest by the community.

The knowledge improvement activities or knowledge sharing events may significantly shape personal norms in favour of acceptance.

9 Conclusion

This document constitutes a guideline for both quantitative assessment of social acceptance of NBSs and determination of barriers using qualitative methods. As a first step, theoretical background and current state of the literature based on which the methodologies are developed and adapted are discussed. Then a clear flow of the methodological process to be followed (from sample selection strategies and questionnaire development to empirical analyses and statistical results) is provided. Based on these methodological flows, the steps can easily be replicated to assess social acceptance of an NBS.

The results indicate that quantitative and qualitative assessments are both complementary and confirmatory for the determination of key factors of social acceptance.

The document also includes results of the developed methods for 4 selected cases. Although it is not possible to directly compare the results for the 4 cases, due to differences in NBS types, sizes, locations, as well as differences in cultural and political landscapes, still similarities and differences in these results are noted as tabulated in Table 9.1 to demonstrate the flexibility of the methodology.

A close inspection of the comparative results highlights the replicability of the framework that is utilized for this task. In all cases, the key factors for acceptability were determined because the most important advantage of our social acceptance determination framework is the ease of adaptability. From questionnaire development to the linkages between variables, it is flexible enough to be easily adapted to any type of NBS as well as to any

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other technologies or projects that needs determining the antecedent factors of social acceptance.

As Table 9.1 shows, procedural fairness, positive and negative affects, perceived risk and benefits are the key factors of trust which in turn influences acceptability of the NBS in 4 cases. Perceived benefits has a direct impact on social acceptance in all cases. There are, however, case specific antecedent factors of NBS acceptance that are significant, like knowledge, personal norms, perceived risks and costs in 2 of the 4 cases. Distributive fairness is one of the three dimensions of the social acceptance; however, it is only in Szeged that it has a direct impact on the social acceptance.

The document also includes suggested strategies for improving social acceptance of the selected cases. The strategies are different from each other in all cases due to the differences in key factors. Experience, for instance, is significant for the knowledge; however, knowledge is significant only in the METU Forest and Forest Garden cases. Thus, experience and knowledge based strategies are important only in this two NBSs. The results indicate that fairness should be one of the major issues in strategy development, however, only in Szeged, both distribution and procedural fairness are significant determinants of acceptance while in other three cases it is the distributional fairness only.

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Table 9.1. Comparission the 4 NBS Cases

INDEPENDENT Variables	DEPENDENT Variables	METU Forest	Tisza River Bank	Quarry Plan	The Forest Garden
Determinants of "Trust"					
EXPERIENCE	KNOWLEDGE	o	o	o	o
KNOWLEDGE	TRUST	o			o
PROCEDURAL FAIRNESS	TRUST	o	o	o	o
Outcomes of "Trust"					
TRUST	POSITIVE AFFECT	o	o	o	o
TRUST	NEGATIVE AFFECT	o	o	o	o
TRUST	PERCEIVED COST		o		o
TRUST	PERCEIVED RISK	o	o	o	o
TRUST	PERCEIVED BENEFITS	o	o	o	o
Impact on "Social Acceptance"					
POSITIVE AFFECT	SOCIAL ACCEPTANCE		o	o	o
NEGATIVE AFFECT	SOCIAL ACCEPTANCE		o	o	
PERCEIVED COST	SOCIAL ACCEPTANCE		o		o
PERCEIVED RISK	SOCIAL ACCEPTANCE	o	o		
PERCEIVED BENEFITS	SOCIAL ACCEPTANCE	o	o	o	o
PROCEDURAL FAIRNESS	SOCIAL ACCEPTANCE		o		o
DISTRIBUTIVE FAIRNESS	SOCIAL ACCEPTANCE		o		
SOCIAL NORM	SOCIAL ACCEPTANCE				
PERSONAL NORM	SOCIAL ACCEPTANCE			o	o
Impact on "Personal Norm"					
PERCEIVED COST	PERSONAL NORM				
PERCEIVED RISK	PERSONAL NORM			o	o
PERCEIVED BENEFITS	PERSONAL NORM		o	o	o
PROBLEM PERCEPTION	PERSONAL NORM	o *	o	o	
OUTCOME EFFICACY	PERSONAL NORM			o	

* For METU Forest, it is impact on social acceptance is direct

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Appendix A: Questionnaire for METU Forest

Nature4Cities -Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models- is a project funded by the European Union and intends to support local authorities and urban planners in project developments, and to give them new tools to engage citizens in the process. We would kindly invite you to take part in a survey of Nature4Cities by reading and filling out the following information. This will take approximately 15 minutes. Thank you for your cooperation.

□ I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

Please read the following information about METU forest before continuing with the survey:
METU Forest is one of the important semi-natural forest habitats in Ankara, the capital and second largest city of Turkey. Currently, the forest is owned by METU, a state university established in 1956. Managed by the Forestation and Environment Directory of METU and regulated by the Republic of Turkey General Directorate of Forestry, the forest encompasses a region of 3100 hectares. With over 30 million trees planted, METU forest provides the largest green area close to the city. Moreover, it includes a natural lake called Eymir and a small artificial pond in its territories. The forest is home to 700 species of flora, many wild animals (including wolves, foxes, partridges, rabbits, snakes and turtles), more than 140 bird species, more than 100 butterfly species, as well as various fish and other freshwater species living in the lakes and lagoons.

Questions

Age: ……
Gender: □ Male □ Female □ Prefer not to answer
Familiarity: Are you familiar with METU forest? □ Yes □ No □ Not Sure
Experience: Have you visited METU forest? □ Yes □ No □ Not Sure
How would you rate your experience at METU forest? □ Not Applicable □ Poor □ Fair □ Good □ Very Good □ Excellent
Proximity: Do you live close to METU forest? □ Yes □ No
Employment: Please select the option that best describes your employment status:
□ Academic
□ Business / for-profit organizations
□ Policy (including local, regional, national, international)
□ NGOs / charities / not-for-profit organizations
□ Other: **.....**

Please indicate your level of agreement or disagreement with each of these statements about METU forest using the identified scales:

	Don't Know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Part A						
1) I think we should **actively prevent** global warming.	0	1	2	3	4	5

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2) I think global warming is **against nature's laws.**	0	1	2	3	4	5
3) I think global warming is **negative legacy** from the development of civilization.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part B						
1) I think I have **sufficient knowledge** about METU forest.	0	1	2	3	4	5
2) **How** did you **obtain** this information?	Television	Newspapers	Social media	People around me	On-site visit	Other: …..
3) I think there are **enough opportunities** for the public **to be informed** about METU forest.	0	1	2	3	4	5
Part C						
1) I think I am **given a say in the planning process** of METU forest.	0	1	2	3	4	5
2) I think **public opinion is sufficiently regarded** in the planning process of METU forest.	0	1	2	3	4	5
3) I think the General Directorate of Forestry is **reliable.**	0	1	2	3	4	5
4) I think the Forestation and Environment Directory of METU is **reliable.**	0	1	2	3	4	5
5) I think the General Directorate of Forestry **discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5
6) I think the Forestation and Environment Directory of METU **discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5
7) I think the General Directorate of Forestry discloses information about **alternatives** to METU forest.	0	1	2	3	4	5
8) I think the Forestation and Environment Directory of METU discloses information about **alternatives** to METU forest.	0	1	2	3	4	5
9) I feel confident that the General Directorate of Forestry is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5

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10) I feel confident that the Forestation and Environment Directory of METU is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
11) I feel confident that the General Directorate of Forestry has **specialized knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
12) I feel confident that the Forestation and Environment Directory of METU has specialized **knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
13) I feel confident that the General Directorate of Forestry has specialized **knowledge, skills and experience** to **interfere** when a **problem arises** during **implementation.**	0	1	2	3	4	5
14) I feel confident that the Forestation and Environment Directory of METU has **specialized knowledge, skills and experience** to **solve** forthcoming **problems.**	0	1	2	3	4	5
15) I feel confident that the General Directorate of Forestry makes sure that adequate **safety measures** are met.	0	1	2	3	4	5
16) I feel confident that the Forestation and Environment Directory of METU makes sure that adequate **safety measures** are met.	0	1	2	3	4	5
17) I think the **planning** of METU forest is **transparent.**	0	1	2	3	4	5
18) I think the **implementation** of METU forest is **transparent.**	0	1	2	3	4	5
19) I feel confident that the Forestation and Environment Directory of METU acts without **political or private pressures and obligations.**	0	1	2	3	4	5
20) I think the **distribution of benefits** of METU forest with respect to myself and others is **fair.**	0	1	2	3	4	5

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21) I think the **distribution of drawbacks** of METU forest with respect to myself and others is **fair.**	0	1	2	3	4	5
Part D						
1) METU forest invokes **satisfaction** in me.	0	1	2	3	4	5
2) METU forest invokes **joy** in me.	0	1	2	3	4	5
3) METU forest invokes **hope** in me.	0	1	2	3	4	5
4) METU forest invokes **calmness** in me.	0	1	2	3	4	5
5) METU forest invokes **pride** in me.	0	1	2	3	4	5
6) METU forest invokes **worry** in me.	0	1	2	3	4	5
7) METU forest invokes **stress** in me.	0	1	2	3	4	5
8) METU forest invokes **powerlessness** in me.	0	1	2	3	4	5
9) METU forest invokes **fear** in me.	0	1	2	3	4	5
10) METU forest invokes **anger** in me.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part E						
1) I think METU forest will be built at high **costs.**	0	1	2	3	4	5
2) I think METU forest poses a risk to **me.**	0	1	2	3	4	5
3) I think METU forest poses a risk to **my family and friends.**	0	1	2	3	4	5
4) I think METU forest poses a risk to **society.**	0	1	2	3	4	5
5) I think the consequences are **severe** when **unanticipated problems arise** in the process of implementing METU forest.	0	1	2	3	4	5
6) I think METU forest is **safe.**	0	1	2	3	4	5
7) I think METU forest benefits **me.**	0	1	2	3	4	5
8) I think METU forest benefits **my family and friends.**	0	1	2	3	4	5
9) I think METU forest benefits **society.**	0	1	2	3	4	5
10) I think METU forest benefits the **environment.**	0	1	2	3	4	5
11) I think METU forest benefits **future generations.**	0	1	2	3	4	5
12) I think METU forest contributes to **economic activities.**	0	1	2	3	4	5

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13) I think METU forest is **necessary for the society.**	0	1	2	3	4	5
Part F						
1) I think **I will visit** METU forest on a regular basis.	0	1	2	3	4	5
2) I think **my family and friends will visit** METU forest on a regular basis.	0	1	2	3	4	5
3) I think **the society will visit** METU forest on a regular basis.	0	1	2	3	4	5
Part G						
1) I think METU forest is acceptable to **me.**	0	1	2	3	4	5
2) I think METU forest is acceptable to **my family and friends.**	0	1	2	3	4	5
3) I think METU forest is acceptable to **society.**	0	1	2	3	4	5
4) I think METU forest is acceptable to **future generations.**	0	1	2	3	4	5
5) I would **tolerate** METU forest **close to my house**.	0	1	2	3	4	5
Part H						
1) I think I can **easily access** METU forest.	0	1	2	3	4	5
2) I think METU forest has a **positive impact on the climate** of Ankara.	0	1	2	3	4	5

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Appendix B: Questionnaire for METU Forest (in Turkish)

Bölge: …….

Nature4Cities şehirleri yeniden yaşanabilir kılmaya, doğa temelli çözümler üretmeye yönelik bilgi paylaşımı ve yeni işbirlikçi modellerle karar destek platformudur. Nature4Cities, Avrupa Birliği tarafından finanse edilen ve yerel yetkilileri ve kent planlamacılarını proje geliştirme konusunda desteklemeyi ve onlara yeni araçlar kazandırmayı amaçlayan bir projedir. Vatandaşlarımızı bu sürece dahil etmek açısından sizleri aşağıdaki bilgileri okuyup doldurarak Nature4Cities araştırmasına katılmaya davet ediyoruz. Bu anket yaklaşık 15 dakika sürecektir. İşbirliğiniz için teşekkür ederiz.

□ Bu ankete gönüllü olarak katılmaktayım. Projenin bir bölümüne veya tamamına katılmamayı seçebileceğimi ve herhangi bir aşamada bir sorunla karşılaşmadan çekilebileceğimi biliyor ve kabul ediyorum.

Ankete başlamadan önce lütfen ODTÜ Ormanı ile ilgili aşağıdaki yazıyı okuyunuz :

ODTÜ Ormanı, Türkiye'nin başkenti ve ikinci büyük şehri olan Ankara'nın önemli yarı doğal ormanlık yaşam alanlarından biridir. Şu anda orman, 1956'da kurulmuş bir devlet üniversitesi olan ODTÜ'ye aittir. ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü tarafından yönetilmekte olan, Türkiye Cumhuriyeti Orman Genel Müdürlüğü tarafından denetlenen orman, 3100 hektarlık bir alanı kaplamaktadır. 30 milyondan fazla ağaç barındırması ile birlikte, ODTÜ ormanı şehre yakın en geniş yeşil alana sahiptir. Aynı zamanda, doğal bir göl olan Eymir Gölü ve küçük bir suni göleti de bünyesinde bulundurmaktadır. ODTÜ Ormanı 700'den fazla bitki örtüsü, birçok yabani hayvan (kurt, tilki, keklik, tavşan, yılan ve kaplumbağa), 140'tan fazla kuş, 100'den fazla kelebek ve çeşitli balık türüne, ve göllerde, lagünlerde yaşayan diğer tatlı su canlısına ev sahipliği yapmaktadır.

SORULAR

Yaşınız: ……

Cinsiyet: □ Bay □ Bayan □ Belirtmek istemiyorum.

Aşinalık: ODTÜ Ormanının varlığından haberdar mısınız? □ Evet □ Hayır □ Emin değilim

Deneyim: Daha önce ODTÜ Ormanını ziyaret ettiniz mi? □ Evet □ Hayır □ Emin değilim

ODTÜ Ormanıyla ilgili deneyiminizi nasıl değerlendiriyorsunuz?

□ Mevcut Değil □ Zayıf □ Makul □ İyi □ Çok iyi □ Mükemmel

Yakınlık: ODTÜ Ormanına yakın mı oturuyorsunuz? □ Evet □ Hayır

Çalışma alanı: Lütfen hangi alanda çalıştığınızı en iyi belirten seçeneği işaretleyiz:

□ Akademik

□ İşletme/kar odaklı kuruluş (Özel sektör)

□ Politika/İlkesel (Yerel, Bölgesel, Ulusal, Uluslararası dahil)

□ Sivil Toplum Kuruluşları/Hayır Kurumları/Kar Amacı Gütmeyen Kuruluşlar

□ Diğer: …….

Lütfen aşağıdaki ölçekleri kullanarak ODTÜ Ormanı hakkındaki bu ifadelere katılma veya katılmama düzeyinizi belirtiniz:

0-Bilmiyorum 1-Kesinlikle Katılmıyorum 2-Katılmıyorum 3-Kararsızım 4-Katılıyorum
5-Kesinlikle Katılıyorum

Bölüm A

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1) Küresel ısınmayı aktif şekilde önlememiz gerektiğini düşünüyorum.	0	1	2	3	4	5

0-Bilmiyorum 1-Kesinlikle Katılmıyorum 2-Katılmıyorum 3-Kararsızım 4-Katılıyorum 5-Kesinlikle Katılıyorum

2) Küresel ısınmanın doğanın kanunlarına aykırı olduğunu düşünüyorum.	0	1	2	3	4	5
3) Küresel ısınmanın medeniyetimizin olumsuz bir mirası olduğunu düşünüyorum.	0	1	2	3	4	5
Bölüm B						
1) ODTÜ Ormanı ile ilgili yeterli bilgiye sahip olduğumu düşünüyorum.	0	1	2	3	4	5
2) Bu bilgiyi nasıl elde ettiniz?	Televizyon	Gazete	Sosyal Medya	Yakınımdaki kişiler	Yerinde ziyaret	Diğer: …..
3) ODTÜ Ormanı hakkında halkın bilgilendirilmesi için yeterli fırsat sağlandığını düşünüyorum.	0	1	2	3	4	5
Bölüm C						
1) ODTÜ Ormanının planlama sürecinde söz sahibi olduğumu düşünüyorum.	0	1	2	3	4	5
2) ODTÜ Ormanının planlama sürecinde kamuoyunun yeterince dikkate alındığını düşünüyorum.	0	1	2	3	4	5
3) Orman Genel Müdürlüğü'nün güvenilir olduğunu düşünüyorum.	0	1	2	3	4	5
4) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün güvenilir olduğunu düşünüyorum.	0	1	2	3	4	5
5) Orman Genel Müdürlüğü'nün kendilerine dezavantajlı olanlar da dahil olmak üzere bilgileri açıkladığını düşünüyorum.	0	1	2	3	4	5
6) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün, kendilerine dezavantajlı olanlar da dahil olmak üzere bilgileri açıkladığını düşünüyorum.	0	1	2	3	4	5
7) Orman Genel Müdürlüğü'nün ODTÜ Ormanına alternatifler hakkında bilgi açıkladığını düşünüyorum.	0	1	2	3	4	5
8) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün ODTÜ Ormanına alternatifler hakkında bilgi açıkladığını düşünüyorum.	0	1	2	3	4	5
9) Orman Genel Müdürlüğü'nün vatandaşların ve çevrenin çıkarlarını gözeteceğini düşünüyorum.	0	1	2	3	4	5
10) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğünün vatandaşların ve çevrenin çıkarlarını gözeteceğini düşünüyorum.	0	1	2	3	4	5

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11) Orman Genel Müdürlüğü'nün riskleri ve faydaları değerlendirmek ve uygun kararlar vermek için uzmanlaşmış bilgi, beceri ve tecrübeye sahip olduğuna eminim.	0	1	2	3	4	5

0-Bilmiyorum 1-Kesinlikle Katılmıyorum 2-Katılmıyorum 3-Kararsızım 4-Katılıyorum 5-Kesinlikle Katılıyorum

12) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün riskleri ve faydaları değerlendirmek ve uygun kararlar vermek için uzmanlaşmış bilgi, beceri ve deneyime sahip olduğuna eminim.	0	1	2	3	4	5
13) Orman Genel Müdürlüğü'nün, uygulama sırasında bir sorun oluştuğunda müdahale edebilmek için uzmanlaşmış bilgi, beceri ve deneyime sahip olduğuna eminim.	0	1	2	3	4	5
14) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün önümüzdeki sorunları çözmek için uzmanlaşmış bilgi, beceri ve tecrübeye sahip olduğuna eminim.	0	1	2	3	4	5
15) Orman Genel Müdürlüğü'nün uygun güvenlik tedbirlerinin aldığını denetlediğinden eminim.	0	1	2	3	4	5
16) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün uygun güvenlik tedbirlerini aldığından eminim.	0	1	2	3	4	5
17) ODTÜ Ormanının planlamasının şeffaf olduğunu düşünüyorum.	0	1	2	3	4	5
18) ODTÜ Ormanının uygulanma sürecinin şeffaf olduğunu düşünüyorum.	0	1	2	3	4	5
19) ODTÜ Ağaçlandırma ve Çevre Düzenleme Müdürlüğü'nün politik veya özel baskı ve yükümlülükler olmadan hareket ettiğinden eminim.	0	1	2	3	4	5
20) ODTÜ Ormanının bana ve diğer vatandaşlara fayda dağılımının adil olduğunu düşünüyorum.	0	1	2	3	4	5
21) ODTÜ Ormanının kendime ve başkalarına yönelik dezavantajlarının dağılımının adil olduğunu düşünüyorum.	0	1	2	3	4	5
Bölüm D						
1) ODTÜ Ormanı bende memnuniyet hissi yaratıyor.	0	1	2	3	4	5
2) ODTÜ Ormanı bende keyif hissi yaratıyor.	0	1	2	3	4	5
3) ODTÜ Ormanı bende umut hissi yaratıyor.	0	1	2	3	4	5
4) ODTÜ Ormanı bende sakinlik hissi yaratıyor.	0	1	2	3	4	5
5) ODTÜ Ormanı bende gurur hissi yaratıyor.	0	1	2	3	4	5
6) ODTÜ Ormanı bende kaygı hissi yaratıyor.	0	1	2	3	4	5

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7) ODTÜ Ormanı bende gerginlik hissi yaratıyor.	0	1	2	3	4	5
8) ODTÜ Ormanı bende güçsüzlük hissi yaratıyor.	0	1	2	3	4	5
9) ODTÜ Ormanı bende korku hissi yaratıyor.	0	1	2	3	4	5
10) ODTÜ Ormanı bende öfke hissi yaratıyor.	0	1	2	3	4	5
Bölüm E						
1) ODTÜ Ormanının yüksek maliyetle oluşturulduğunu düşünüyorum.	0	1	2	3	4	5

0-Bilmiyorum 1-Kesinlikle Katılmıyorum 2-Katılmıyorum 3-Kararsızım 4-Katılıyorum 5-Kesinlikle Katılıyorum

2) ODTÜ Ormanının benim için risk arz ettiğini düşünüyorum.	0	1	2	3	4	5
3) ODTÜ Ormanının ailem ve arkadaşlarım için risk arz ettiğini düşünüyorum	0	1	2	3	4	5
4) ODTÜ Ormanının toplum için risk arz ettiğini düşünüyorum	0	1	2	3	4	5
5) ODTÜ ormanının uygulanması sürecinde öngörülemeyen sorunlarla karşılaşıldığında sonuçların ciddi olacağını düşünüyorum.	0	1	2	3	4	5
6) ODTÜ Ormanının güvenli olduğunu düşünüyorum.	0	1	2	3	4	5
7) ODTÜ Ormanının bana fayda sağladığını düşünüyorum.	0	1	2	3	4	5
8) ODTÜ Ormanının aileme ve arkadaşlarıma fayda sağladığını düşünüyorum	0	1	2	3	4	5
9) ODTÜ Ormanının topluma fayda sağladığını düşünüyorum.	0	1	2	3	4	5
10) ODTÜ Ormanının çevreye fayda sağladığını düşünüyorum.	0	1	2	3	4	5
11) ODTÜ Ormanının gelecek nesiller için fayda sağlayacağını düşünüyorum..	0	1	2	3	4	5
12) ODTÜ Ormanının ekonomik etkinliklere katkıda bulunduğunu düşünüyorum.	0	1	2	3	4	5
13) ODTÜ Ormanının toplum için gerekli olduğunu düşünüyorum.	0	1	2	3	4	5
Bölüm F						
1) ODTÜ Ormanını düzenli olarak ziyaret edeceğimi düşünüyorum.	0	1	2	3	4	5
2) Ailem ve arkadaşlarımın ODTÜ Ormanını düzenli olarak ziyaret edeceklerini düşünüyorum.	0	1	2	3	4	5
3) Toplumun ODTÜ Ormanını düzenli olarak ziyaret edeceğini düşünüyorum.	0	1	2	3	4	5
Bölüm G						
1) ODTÜ Ormanı benim için kabul edilebilir.	0	1	2	3	4	5

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2) ODTÜ Ormanı ailem ve arkadaşlarım için kabul edilebilir.	0	1	2	3	4	5
3) ODTÜ Ormanı toplum için kabul edilebilir. .	0	1	2	3	4	5
4) ODTÜ Ormanı gelecek nesiller için kabul edilebilir.	0	1	2	3	4	5
5) ODTÜ Ormanının evime yakın olmasını kabul edebilirim.	0	1	2	3	4	5
Bölüm H						
1) ODTÜ Ormanına kolayca erişebileceğimi düşünüyorum.	0	1	2	3	4	5
2) ODTÜ Ormanının Ankara iklimine olumlu bir etkisi olduğunu düşünüyorum.	0	1	2	3	4	5

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Appendix C: Questionnaire for Tisza Quay

Nature4Cities -Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models- is a project funded by the European Union and intends to support local authorities and urban planners in project developments, and to give them new tools to engage citizens in the process. We would kindly invite you to take part in a survey of Nature4Cities by reading and filling out the following information. This will take approximately 15 minutes. Thank you for your cooperation.

□ I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

Please read the following information about Tisza quay before continuing with the survey:

The rehabilitation and re-naturing of the Tisza River bank in Szeged is a developed concept that has been integrated in the municipalities' urban development plans. The re-naturing of the Tisza bank is an urban challenge of big importance as this action could ensure the connection between the river and the city. The general goal of proposed solutions in the region is to reach the urban section of the river Tisza, to create touristic attractions based on natural values, to present local history values, and to create the conditions of business based investment. Additionally, they aim to improve the current state of affairs to provide hiking, recreation and sports as well as business for actors. Solutions are to be managed by the Municipality of Szeged and regulated by the City Management Department within the Mayor's Office.

Questions

Age: ……

Gender: □ Male □ Female □ Prefer not to answer

Familiarity: Are you familiar with Tisza quay? □ Yes □ No □ Not Sure

Experience: Have you visited Tisza quay? □ Yes □ No □ Not Sure

How would you rate your experience at Tisza quay? □ Not Applicable □ Poor □ Fair □ Good □ Very Good □ Excellent

Proximity: Do you live close to Tisza quay? □ Yes □ No

Employment: Please select the option that best describes your employment status:

□ Academic

□ Business / for-profit organizations

□ Policy (including local, regional, national, international)

□ NGOs / charities / not-for-profit organizations

□ Other: **.....**

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Please indicate your level of agreement or disagreement with each of these statements about Tisza quay using the identified scales:

	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part A						
1) I think we should **actively prevent** global warming.	0	1	2	3	4	5
2) I think global warming is **against nature's laws.**	0	1	2	3	4	5
3) I think global warming is **negative legacy** from the development of civilization.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part B						
1) I think I have **sufficient knowledge** about Tisza quay.	0	1	2	3	4	5
2) **How** did you **obtain** this information?	Television	Newspapers	Social media	People around me	On-site visit	Other: …..
3) I think there are **enough opportunities** for the public **to be informed** about Tisza quay.	0	1	2	3	4	5
Part C						
1) I think I am **given a say in the planning process** of Tisza quay.	0	1	2	3	4	5
2) I think **public opinion is sufficiently regarded** in the planning process of Tisza quay.	0	1	2	3	4	5
3) I think the **City Management Department** within the Mayor's Office is **reliable.**	0	1	2	3	4	5
4) I think the **Municipality** of Szeged is **reliable.**	0	1	2	3	4	5
5) I think the **City Management Department** within the Mayor's Office **discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5

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6) I think the **Municipality** of Szeged **discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5
7) I think the **City Management Department** within the Mayor's Office discloses information about **alternatives** to Tisza quay.	0	1	2	3	4	5
8) I think the **Municipality** of Szeged discloses information about **alternatives** to Tisza quay.	0	1	2	3	4	5
9) I feel confident that the **City Management Department** within the Mayor's Office is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
10) I feel confident that the **Municipality** of Szeged is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
11) I feel confident that the **City Management Department** within the Mayor's Office has **specialized knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
12) I feel confident that the **Municipality** of Szeged has specialized **knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
13) I feel confident that the **City Management Department** within the Mayor's Office has specialized **knowledge, skills and experience** to **interfere** when a **problem arises** during implementation.	0	1	2	3	4	5

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14) I feel confident that the **Municipality** of Szeged has **specialized knowledge, skills and experience** to **solve** forthcoming **problems.**	0	1	2	3	4	5
15) I feel confident that the **City Management Department** within the Mayor's Office makes sure that adequate **safety measures** are met.	0	1	2	3	4	5
16) I feel confident that the **Municipality** of Szeged makes sure that adequate **safety measures** are met.	0	1	2	3	4	5
17) I think the **planning** of Tisza quay is **transparent.**	0	1	2	3	4	5
18) I think the **implementation** of Tisza quay is **transparent.**	0	1	2	3	4	5
19) I feel confident that the **Municipality** of Szeged acts without **political or private pressures and obligations.**	0	1	2	3	4	5
20) I think the **distribution of benefits** of Tisza quay with respect to myself and others is **fair.**	0	1	2	3	4	5
21) I think the **distribution of drawbacks** of Tisza quay with respect to myself and others is **fair.**	0	1	2	3	4	5
Part D						
1) Tisza quay invokes **satisfaction** in me.	0	1	2	3	4	5
2) Tisza quay invokes **joy** in me.	0	1	2	3	4	5
3) Tisza quay invokes **hope** in me.	0	1	2	3	4	5
4) Tisza quay invokes **calmness** in me.	0	1	2	3	4	5
5) Tisza quay invokes **pride** in me.	0	1	2	3	4	5
6) Tisza quay invokes **worry** in me.	0	1	2	3	4	5
7) Tisza quay invokes **stress** in me.	0	1	2	3	4	5
8) Tisza quay invokes **powerlessness** in me.	0	1	2	3	4	5
9) Tisza quay invokes **fear** in me.	0	1	2	3	4	5
10) Tisza quay invokes **anger** in me.	0	1	2	3	4	5

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Part E						
1) I think Tisza quay will be built at high **costs.**	0	1	2	3	4	5
2) I think Tisza quay poses a risk to **me.**	0	1	2	3	4	5
3) I think Tisza quay poses a risk to **my family and friends.**	0	1	2	3	4	5
4) I think Tisza quay poses a risk to **society.**	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
5) I think the consequences are **severe** when **unanticipated problems arise** in the process of implementing Tisza quay.	0	1	2	3	4	5
6) I think Tisza quay is **safe.**	0	1	2	3	4	5
7) I think Tisza quay benefits **me.**	0	1	2	3	4	5
8) I think Tisza quay benefits **my family and friends.**	0	1	2	3	4	5
9) I think Tisza quay benefits **society.**	0	1	2	3	4	5
10) I think Tisza quay benefits the **environment.**	0	1	2	3	4	5
11) I think Tisza quay benefits **future generations.**	0	1	2	3	4	5
12) I think Tisza quay contributes to **economic activities.**	0	1	2	3	4	5
13) I think Tisza quay is **necessary for the society.**	0	1	2	3	4	5
Part F						
1) I think **I will visit** Tisza quay on a regular basis.	0	1	2	3	4	5
2) I think **my family and friends will visit** Tisza quay on a regular basis.	0	1	2	3	4	5
3) I think **the society will visit** Tisza quay on a regular basis.	0	1	2	3	4	5
Part G						
1) I think Tisza quay is acceptable to **me.**	0	1	2	3	4	5

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2) I think Tisza quay is acceptable to **my family and friends.**	0	1	2	3	4	5
3) I think Tisza quay is acceptable to **society.**	0	1	2	3	4	5
4) I think Tisza quay is acceptable to **future generations.**	0	1	2	3	4	5
5) I would **tolerate** Tisza quay **close to my house**.	0	1	2	3	4	5
Part H						
1) I think I can **easily access** Tisza quay.	0	1	2	3	4	5
2) I think Tisza quay has a **positive impact on the climate** of Szeged.	0	1	2	3	4	5
3) I expect that **people important to me think** I should be strongly in favor of Tisza quay.	0	1	2	3	4	5
4) If I **acted according to my principles**, I would act in favor of Tisza quay.	0	1	2	3	4	5

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Appendix D: Questionnaire for Tisza Quay (in Hungarian)

Zone: …….

A Nature4Cities projekt célja, hogy a természetalapú megoldások segítségével visszahozza a természetet a városokba, ismeretterjesztő és döntést támogató platformot hozzon létre új, együttműködésre épülő modellek segítségével. Az Európai Unió által finanszírozott projekt a döntéshozókat és a várostervezési szakembereket kívánja támogatni városfejlesztési feladataik során, illetve új eszközöket kínál számukra, amelyek segítségével bevonhatják a városlakókat a fejlesztésekbe. Kérjük, a lenti tájékoztatót elolvasása után a kérdések megválaszolásával vegyen részt a Nature4Cities felmérésben. A kitöltés körülbelül 15 percet vesz igénybe. Köszönjük az együttműködést!

☐ Megértettem, hogy a felmérésben való részvételem önkéntes, a válaszadás nem kötelező, illetve a kitöltés során bármikor dönthetek úgy, hogy mégsem veszek részt a felmérésben, bármilyen szankció vagy hátrányos következmény nélkül.

Kérjük, mielőtt kitölti a kérdőívet, figyelmesen olvassa el a következő információkat a Tisza-partról:

A szegedi Tisza-part rehabilitációja és zöldítése a helyi Önkormányzat városfejlesztési terveiben is megjelenő, kialakult koncepció. A Tisza-part zöldítése nagy jelentőségű városfejlesztési kihívás, mivel a folyó és a város között teremtene kapcsolatot. A régió fejlesztési javaslatainak közös célja, hogy a fejlesztés a Tisza városi szakaszát elérje, természeti értékekre épülő turisztikai vonzerőt hozzon létre, bemutassa a helyi történelmi értékeket, illetve az üzleti alapú befektetések lehetőségét is megteremtse. Ezenfelül a fejlesztési tervek célja a környék általános megújítása: kiránduló, szabadidős-, illetve sporttevékenységre alkalmas területek létrehozása. A vonatkozó megoldások és döntések a szegedi Önkormányzat hatáskörébe tartoznak, a Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda felügyeletével.

Kérdőív

Életkor: ……

Nem: ☐ Férfi ☐ Nő ☐ Nem szeretném megadni

Ismeretek: Ismeri a Tisza-partot? ☐ Igen ☐ Nem ☐ Talán

Tapasztalat: Járt már a Tisza-parton? ☐ Igen ☐ Nem ☐ Talán

Hogyan értékelné a Tisza-parton tett látogatását? ☐ Nem jártam ott ☐ Rossz ☐ Átlagos ☐ Jó ☐ Nagyon jó ☐ Kitűnő

Lakóhely közelsége: A Tisza-part közelében lakik? ☐ Igen ☐ Nem

Foglalkozás: Válassza ki azt az opciót, amely a legjobban leírja munkaviszonyát:

☐ Oktatás

☐ Versenyszféra / profitorientált vállalkozások

☐ Törvényhozó (helyi, területi, országos, vagy nemzetközi szintű)

☐ Civil szféra / jótékonysági szervezetek / nonprofit szervezetek

☐ Egyéb: .....

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Kérjük, a lenti skálán jelölje meg, milyen mértékben ért egyet vagy nem ért egyet a következő, a Tisza-partra vonatkozó állításokkal:

	Nem tudom	Határozottan nem értek egyet	Nem értek egyet	Nincs véleményem / Semleges válasz	Egyetértek	Határozottan egyetértek
A						
1) Aktívan meg kellene előznünk a globális felmelegedést.	0	1	2	3	4	5
2) A globális felmelegedés ellentmond a természet törvényeinek.	0	1	2	3	4	5
3) A globális felmelegedés a civilizációs fejlődés negatív hozománya.	0	1	2	3	4	5
B						
1) Úgy gondolom, hogy megfelelő tudással rendelkezem a Tisza-partról.	0	1	2	3	4	5
2) Honnan szerezte az ide vonatkozó ismereteit?	televízió	sajtó	közösségi média	ismerősök, barátok	jártam a területen	egyéb: …..
3) Mindenki számára adottak a lehetőségek, hogy a Tisza-parttal kapcsolatban tájékozódjon.	0	1	2	3	4	5
C						
1) Úgy érzem, van lehetőségem hozzászólni a Tisza-part fejlesztéséhez.	0	1	2	3	4	5
2) A polgárok véleményét megfelelően figyelembe veszik a Tisza-part tervezési folyamata során.	0	1	2	3	4	5

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3) A Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda véleményem szerint megbízható.	0	1	2	3	4	5
4) A szegedi Önkormányzat véleményem szerint megbízható.	0	1	2	3	4	5
5) A Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda nyilvánosságra hozza a számukra kedvezőtlen információkat is.	0	1	2	3	4	5
	Nem tudom	Határozottan nem értek egyet	Nem értek egyet	Nincs véleményem / Semleges válasz	Egyetértek	Határozottan egyetértek
6) A szegedi Önkormányzat nyilvánosságra hozza a számukra kedvezőtlen információkat is.	0	1	2	3	4	5
7) A Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda nyilvánosságra hozza a Tisza-part lehetséges alternatív elképzeléseit is.	0	1	2	3	4	5
8) A szegedi Önkormányzat nyilvánosságra hozza a Tisza-part lehetséges alternatív elképzeléseit is.	0	1	2	3	4	5
9) Biztos vagyok benne, hogy a Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda védi a közösség és a környezet érdekeit.	0	1	2	3	4	5
10) Biztos vagyok benne, hogy a szegedi Önkormányzat védi a közösség és a környezet érdekeit.	0	1	2	3	4	5
11) Biztos vagyok benne, hogy Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda rendelkezik az előnyök és a	0	1	2	3	4	5

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kockázatok felméréséhez és a megfelelő döntések meghozatalához szükséges tudással, képességekkel, illetve tapasztalattal.						
12) Biztos vagyok benne, hogy Szeged Önkormányzata rendelkezik az előnyök és a kockázatok felméréséhez és a megfelelő döntések meghozatalához szükséges tudással, képességekkel, illetve tapasztalattal.	0	1	2	3	4	5
13) A Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda rendelkezik a megfelelő tudással, képességekkel, és tapasztalattal, hogy be tudjon avatkozni, ha a kivitelezés során probléma merülne fel.	0	1	2	3	4	5
	Nem tudom	Határozottan nem értek egyet	Nem értek egyet	Nincs véleményem / Semleges válasz	Egyetértek	Határozottan egyetértek
14) Biztos vagyok benne, hogy a szegedi Önkormányzat rendelkezik a megfelelő tudással, képességekkel, és tapasztalattal, hogy megoldja a felmerülő problémákat.	0	1	2	3	4	5
15) Biztos vagyok benne, hogy a Polgármesteri Hivatalhoz tartozó Városüzemeltetési Iroda gondoskodik a megfelelő biztonsági intézkedésekről.	0	1	2	3	4	5
16) Biztos vagyok benne, hogy a szegedi Önkormányzat gondoskodik a megfelelő biztonsági intézkedésekről.	0	1	2	3	4	5
17) Véleményem szerint a Tisza-part tervezésének folyamata átlátható.	0	1	2	3	4	5

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18) Véleményem szerint a Tisza-part kivitelezésének folyamata átlátható.	0	1	2	3	4	5
19) Biztos vagyok benne, hogy Szeged Önkormányzata a politikai-, vagy a magánszféra nyomásától, illetve elköteleződéseitől mentesen tevékenykedik.	0	1	2	3	4	5
20) Véleményem szerint a Tisza-part előnyeinek megoszlása, magamat és másokat figyelembe véve, igazságos.	0	1	2	3	4	5
21) Véleményem szerint a Tisza-part hátrányainak megoszlása, magamat és másokat figyelembe véve, igazságos.	0	1	2	3	4	5
D						
1) A Tisza-part kapcsán elégedettséget érzek.	0	1	2	3	4	5
2) A Tisza-part kapcsán örömöt érzek.	0	1	2	3	4	5
3) A Tisza-part kapcsán reményt érzek.	0	1	2	3	4	5
4) A Tisza-part kapcsán nyugalmat érzek.	0	1	2	3	4	5
5) A Tisza-part kapcsán büszkeséget érzek.	0	1	2	3	4	5
	Nem tudom	Határozottan nem értek egyet	Nem értek egyet	Nincs véleményem / Semleges válasz	Egyetértek	Határozottan egyetértek
6) A Tisza-part kapcsán aggodalmat érzek.	0	1	2	3	4	5
7) A Tisza-part kapcsán stresszt érzek.	0	1	2	3	4	5
8) A Tisza-part kapcsán tehetetlenséget érzek.	0	1	2	3	4	5
9) A Tisza-part kapcsán félelmet érzek.	0	1	2	3	4	5

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10) A Tisza-part kapcsán dühöt érzek.	0	1	2	3	4	5
E						
1) A Tisza-parti munkálatok magas költséggel fognak járni.	0	1	2	3	4	5
2) A Tisza-part kockázatot jelent számomra.	0	1	2	3	4	5
3) A Tisza-part kockázatot jelent családom, barátaim számára.	0	1	2	3	4	5
4) A Tisza-part kockázatot jelent a társadalom számára.	0	1	2	3	4	5
5) Véleményem szerint súlyos következményei lehetnek a Tisza-parti kivitelezési munkálatok során előálló váratlan problémáknak.	0	1	2	3	4	5
6) Véleményem szerint a Tisza-part biztonságos.	0	1	2	3	4	5
7) Véleményem szerint a Tisza-part előnyös számomra.	0	1	2	3	4	5
8) Véleményem szerint a Tisza-part előnyös családom, barátaim számára.	0	1	2	3	4	5
9) Véleményem szerint a Tisza-part előnyös a társadalom számára.	0	1	2	3	4	5
10) Véleményem szerint a Tisza-part előnyös a környezet számára.	0	1	2	3	4	5
11) Véleményem szerint a Tisza-part előnyös a jövő generációi számára.	0	1	2	3	4	5
12) Véleményem szerint a Tisza-part hozzájárul a gazdasági tevékenységekhez.	0	1	2	3	4	5
13) Véleményem szerint a Tisza-part szükséges a társadalom számára.	0	1	2	3	4	5
	Nem tudom	Határozottan nem értek egyet	Nem értek egyet	Nincs véleményem	Egyetértek	Határozottan egyetértek

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				/ Semleges válasz		
F						
1) A Tisza-partot rendszeresen fogom látogatni.	0	1	2	3	4	5
2) A Tisza-partot családom, barátaim rendszeresen fogják látogatni.	0	1	2	3	4	5
3) A Tisza-partot a nagyközönség rendszeresen fogja látogatni.	0	1	2	3	4	5
G						
1) A Tisza-part számomra elfogadható.	0	1	2	3	4	5
2) A Tisza-part elfogadható családom, barátaim számára.	0	1	2	3	4	5
3) A Tisza-part elfogadható a társadalom számára.	0	1	2	3	4	5
4) A Tisza-part elfogadható a jövő generációi számára.	0	1	2	3	4	5
5) Elfogadható lenne számomra, ha a Tisza-part otthonom közelében lenne.	0	1	2	3	4	5
H						
1) A Tisza-part könnyen megközelíthető számomra.	0	1	2	3	4	5
2) Véleményem szerint a Tisza-part pozitív hatással van a szegedi klímára.	0	1	2	3	4	5
3) A számomra fontos emberek valószínűleg azt gondolják rólam, hogy határozottan támogatom a Tisza-part ügyét.	0	1	2	3	4	5
4) Elveim alapján eljárva mindenképpen a Tisza-part érdekében cselekednék.	0	1	2	3	4	5

Köszönjük, hogy időt szakított a kérdőív kitöltésére!

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Appendix E: Questionnaire for Quarry Plan

Nature4Cities -Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models- is a project funded by the European Union and intends to support local authorities and urban planners in project developments, and to give them new tools to engage citizens in the process. We would kindly invite you to take part in a survey of Nature4Cities by reading and filling out the following information. This will take approximately 15 minutes. Thank you for your cooperation.

□ I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

Please read the following information about the re-naturalization of quarries before continuing with the survey:

There are 36 quarries in the territory of the Metropolitan City of Milan (CMM). The quarries are located in different areas. CMM has started a participation process for the design of a new quarry plan. The "Quarry Plan" is a territorial planning tool that aims to meet the requirements of aggregates for the construction market and give back the area of the quarry as a fruitive, naturalistic, or agricultural area to the local community. It governs the major transformations in quarry areas in urban and suburban areas through re-naturalization processes. While the process of environmental recovery is nearly finished in some quarries, it is in the starting phase in others. Through these processes biodiversity can be increased, the land can be prepared for agricultural use or can be devoted to recreational or naturalistic activities. The construction of the Quarry Plan takes place through the participation and involvement of the various subjects involved (civil society, interested municipalities, park authorities, environmental protection organizations (ARPA)). It is an important work of balancing the effects of extraction on the environment, territory and population with the aim to arrive at the definition of interventions with a high degree of sustainability and feasibility.

Questions

Age: ……

Gender: □ Male □ Female □ Prefer not to answer

Familiarity: Are you familiar with a quarry in the territory of the Metropolitan City of Milan? □ Yes □ No □ Not Sure

Experience: Have you visited a quarry in the territory of the Metropolitan City of Milan? □ Yes □ No □ Not Sure

Which one have you visited?

□ Not Applicable □ ATEg 30 (Pero) □ ATEg20 (Pozzuolo Martesana; Truccazzano) □ Cava Nord (Paderno Dugnano)

□ Cava Merlini (Trezzano Sul Naviglio, Zibido San Giacomo, Gaggiano)

How would you rate your experience at the quarry? □ Not Applicable □ Poor □ Fair □ Good □ Very Good □ Excellent

Proximity: Do you live close to a quarry? □ Yes □ No

Employment: Please select the option that best describes your employment status:

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□ Academic
□ Business / for-profit organizations
□ Policy (including local, regional, national, international)
□ NGOs / charities / not-for-profit organizations
□ Other: **.....**

Please indicate your level of agreement or disagreement with each of these statements about the re-naturalization of quarries using the identified scales:

	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part A						
1) I think we should **actively prevent** global warming.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
2) I think global warming is **against nature's laws.**	0	1	2	3	4	5
3) I think global warming is **negative legacy** from the development of civilization.	0	1	2	3	4	5
Part B						
1) I think I have **sufficient knowledge** about the re-naturalization of quarries.	0	1	2	3	4	5
2) **How** did you **obtain** this information?	Television	Newspapers	Social media	People around me	On-site visit	Other: …..
3) I think there are **enough opportunities** for the public **to be informed** about the re-naturalization of quarries.	0	1	2	3	4	5
Part C						
1) I think I am **given a say in the planning process** of the re-naturalization of quarries.	0	1	2	3	4	5
2) I think **public opinion is sufficiently regarded** in the planning process of the re-naturalization of quarries.	0	1	2	3	4	5
3) I think the **regulatory bodies (region, CMM, municipalities)** are **reliable.**	0	1	2	3	4	5
4) I think the **owner company of the quarry** is **reliable.**	0	1	2	3	4	5

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5) I think the **regulatory bodies (region, CMM, municipalities) disclose information** including that **disadvantageous to them.**	0	1	2	3	4	5
6) I think the **owner company of the quarry discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5
7) I think the **regulatory bodies (region, CMM, municipalities)** disclose information about **alternatives** to the re-naturalization of quarries.	0	1	2	3	4	5
8) I think the **owner company of the quarry** discloses information about **alternatives** to the re-naturalization of quarries.	0	1	2	3	4	5
9) I feel confident that the **regulatory bodies (region, CMM, municipalities)** are **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
10) I feel confident that the **owner company of the quarry** is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
11) I feel confident that the **regulatory bodies (region, CMM, municipalities)** have **specialized knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
12) I feel confident that the **owner company of the quarry** has specialized **knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5
13) I feel confident that the **regulatory bodies (region, CMM, municipalities)** have specialized **knowledge, skills and experience** to **interfere** when a **problem arises** during implementation.	0	1	2	3	4	5
14) I feel confident that the **owner company of the quarry** has **specialized knowledge, skills and experience** to **solve** forthcoming **problems.**	0	1	2	3	4	5
15) I feel confident that the **regulatory bodies (region, CMM, municipalities)** make sure that adequate **safety measures** are met.	0	1	2	3	4	5
16) I feel confident that the **owner company of the quarry** makes sure that adequate **safety measures** are met.	0	1	2	3	4	5

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17) I think the **planning** of the re-naturalization of quarries is **transparent.**	0	1	2	3	4	5
18) I think the **implementation** of the re-naturalization of quarries is **transparent.**	0	1	2	3	4	5
19) I feel confident that **regulatory bodies (region, CMM, municipalities)** act without **political or private pressures and obligations.**	0	1	2	3	4	5
20) I think the **distribution of benefits** of the re-naturalization of quarries with respect to myself and others is **fair.**	0	1	2	3	4	5
21) I think the **distribution of drawbacks** of the re-naturalization of quarries with respect to myself and others is **fair.**	0	1	2	3	4	5
Part D						
1) The re-naturalization of quarries invokes **satisfaction** in me.	0	1	2	3	4	5
2) The re-naturalization of quarries invokes **joy** in me.	0	1	2	3	4	5
3) The re-naturalization of quarries invokes **hope** in me.	0	1	2	3	4	5
4) The re-naturalization of quarries invokes **calmness** in me.	0	1	2	3	4	5
5) The re-naturalization of quarries invokes **pride** in me.	0	1	2	3	4	5
6) The re-naturalization of quarries invokes **worry** in me.	0	1	2	3	4	5
7) The re-naturalization of quarries invokes **stress** in me.	0	1	2	3	4	5
8) The re-naturalization of quarries invokes **powerlessness** in me.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
9) The re-naturalization of quarries invokes **fear** in me.	0	1	2	3	4	5
10) The re-naturalization of quarries invokes **anger** in me.	0	1	2	3	4	5
Part E						
1) I think the re-naturalization of quarries will incur high **costs.**	0	1	2	3	4	5
2) I think the re-naturalization of quarries poses a risk to **me.**	0	1	2	3	4	5

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3) I think the re-naturalization of quarries poses a risk to **my family and friends.**	0	1	2	3	4	5
4) I think the re-naturalization of quarries poses a risk to **society.**	0	1	2	3	4	5
5) I think the consequences are **severe** when **unanticipated problems arise** in the process of re-naturalizing quarries.	0	1	2	3	4	5
6) I think the re-naturalization of quarries is **safe.**	0	1	2	3	4	5
7) I think the re-naturalization of quarries benefits **me.**	0	1	2	3	4	5
8) I think the re-naturalization of quarries benefits **my family and friends.**	0	1	2	3	4	5
9) I think the re-naturalization of quarries benefits **society.**	0	1	2	3	4	5
10) I think the re-naturalization of quarries benefits the **environment.**	0	1	2	3	4	5
11) I think the re-naturalization of quarries benefits **future generations.**	0	1	2	3	4	5
12) I think the re-naturalization of quarries contributes to **economic activities.**	0	1	2	3	4	5
13) I think the re-naturalization of quarries is **necessary for the society.**	0	1	2	3	4	5
Part F						
1) I think **I will visit** quarries on a regular basis.	0	1	2	3	4	5
2) I think **my family and friends will visit** quarries on a regular basis.	0	1	2	3	4	5
3) I think **the society will visit** quarries on a regular basis.	0	1	2	3	4	5
Part G						
1) I think the re-naturalization of quarries is acceptable to **me.**	0	1	2	3	4	5
2) I think the re-naturalization of quarries is acceptable to **my family and friends.**	0	1	2	3	4	5
3) I think the re-naturalization of quarries is acceptable to **society.**	0	1	2	3	4	5
4) I think the re-naturalization of quarries is acceptable to **future generations.**	0	1	2	3	4	5
5) I would **tolerate** quarries **close to my house**.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

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Part H						
1) I expect that **people important to me think** I should be strongly in favor of the re-naturalization of quarries.	0	1	2	3	4	5
2) If I **acted according to my principles**, I would act in favor of the re-naturalization of quarries.	0	1	2	3	4	5

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Appendix F: Questionnaire for Quarry Plan (in Italian)

Nature4Cities - Nature Based Solutions (Soluzioni Basate sulla Natura per le Città): è un progetto finanziato dall'Unione Europea che intende sviluppare una piattaforma che serva come strumento di diffusione delle conoscenze alla cittadinanza e come supporto alle decisioni per le autorità locali e per tutti i pianificatori urbani. La piattaforma rappresenterà uno strumento innovativo di partecipazione attiva dei cittadini. Vi invitiamo gentilmente a compilare il seguente questionario di Nature4Cities che richiederà approssimativamente 15 minuti. Grazie per la collaborazione.

□ Dichiaro che la mia partecipazione è volontaria, che posso decidere di non partecipare, partecipare in parte o a tutto il progetto e che posso ritirarmi in qualsiasi momento durante la compilazione del questionario senza essere penalizzato in alcun modo.

Per cortesia legga le seguenti informazioni riguardanti la rinaturalizzazione delle cave prima di iniziare con la compilazione del questionario:

Sul territorio della Città metropolitana di Milano (CMM) vi sono 36 cave con specificità diverse tra loro.

La CMM ha avviato un processo partecipato per la stesura del nuovo Piano Cave. Il Piano Cave è lo strumento territoriale pianificatorio che si pone l'obiettivo di individuare le aree di cava per soddisfare il fabbisogno di inerti per il mercato delle costruzioni, restituendo poi alla comunità locale aree fruibili, naturalistiche o agricole, nelle aree urbane e suburbane, attraverso processi di rinaturalizzazione e di incremento della biodiversità. In alcune cave la rinaturalizzazione è quasi conclusa, mentre in altre è ancora in fase di avvio.

Attraverso questi interventi la biodiversità può essere aumentata, la terra può essere preparata per uso agricolo o può essere dedicata ad attività ricreative o naturalistiche, in base alle caratteristiche geografiche, demografiche, storiche, economiche e istituzionali locali. Il processo di costruzione del Piano Cave avviene attraverso la partecipazione e il coinvolgimento dei diversi soggetti della società civile, dei Comuni interessati organizzati nelle diverse aree territoriali della Città Metropolitana. Un aspetto importante rivestono la partecipazione e il coinvolgimento dei diversi soggetti della società civile, dei Comuni e degli Enti Parco, degli organismi di tutela ambientale (ARPA) attraverso un delicato e importante lavoro di bilanciamento degli effetti dell'attività estrattiva sull'ambiente, sul territorio, sulla popolazione e sul lavoro, per arrivare alla definizione di interventi con elevato grado di sostenibilità e fattibilità.

<u>Domande</u>

Età: ……

Sesso: □ Maschile □ Femminile □ Preferisco non rispondere

Familiarità: Conosce una cava sul territorio della Città metropolitana di Milano? □ Si □ No □ Non sono sicuro

Experience: Ha mai visitato una cava sul territorio della Città metropolitana di Milano? □ Si □ No □ Non sono sicuro

Ha visitato una di queste cave?

□ Non applicabile □ ATEg 30 (Pero) □ ATEg20 (Pozzuolo Martesana; Truccazzano) □ Cava Nord (Paderno Dugnano) □ ATEg 32 (Trezzano Sul Naviglio, Zibido San Giacomo, Gaggiano)

Come valuta la sua esperienza nell'area di cava? □ Non applicabile □ Insufficiente □ Sufficiente □ Buono □ Molto buono □ Eccellente

Prossimità: Abita vicino ad una cava? □ Si □ No

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Lavoro: Per cortesia selezioni l'opzione che meglio descrive il suo ambito lavorativo:

- ☐ Accademico
- ☐ Impresa / organizzazione profit
- ☐ Pubblico impiego (locale, regionale, nazionale, internazionale)
- ☐ ONG, istituzione caritatevole, organizzazione non profit
- ☐ Altro: **.....**

Per cortesia indichi il suo livello di accordo o disaccordo rispetto alle seguenti affermazioni relative alla rinaturalizzazione delle cave utilizzando la scala indicata:

0-Non so 1-Fortemente in disaccordo 2-Disaccordo 3-Neutrale 4-D'accordo 5-Fortemente d'accordo

Parte A						
1) Penso che dovremmo **prevenire attivamente** il riscaldamento globale.	0	1	2	3	4	5
2) Penso che il riscaldamento globale sia **contro le leggi della natura**.	0	1	2	3	4	5
3) Penso che il riscaldamento globale sia un'**eredità negativa** derivante dallo sviluppo della civiltà.	0	1	2	3	4	5
Parte B						
1) Penso di possedere **sufficienti conoscenze** rispetto al tema della rinaturalizzazione delle cave.	0	1	2	3	4	5
2) **Come ha ottenuto** queste informazioni**?**	Televisione	Giornali	Social media	Persone attorno a me	Visita di una cava	Altro: …..
3) Penso che ci siano **abbastanza opportunità** per il pubblico **di essere informati** rispetto alla rinaturalizzazione delle cave.	0	1	2	3	4	5
Parte C						
1) Penso di **avere voce in capitolo nel processo di progettazione** della rinaturalizzazione delle cave.	0	1	2	3	4	5
2) Penso che la **pubblica opinione sia sufficientemente considerata** nel processo di progettazione della rinaturalizzazione delle cave.	0	1	2	3	4	5
3) Penso che gli **enti regolatori** (Regione, CMM, Comuni) siano **affidabili.**	0	1	2	3	4	5
4) Penso che i **proprietari delle cave** siano **affidabili**.	0	1	2	3	4	5
5) Penso che **gli enti regolatori (Regione, CMM, comuni) rendano disponibili informazioni** anche **svantaggiose per loro.**	0	1	2	3	4	5

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6) Penso che **i proprietari delle cave rendano disponibili informazioni** anche **svantaggiose per loro.**	0	1	2	3	4	5
7) Penso che **gli enti regolatori (Regione, CMM, comuni) rendano disponibili** informazioni rispetto a **alternative** alla rinaturalizzazione delle cave.	0	1	2	3	4	5
8) Penso che **i proprietari delle cave rendano disponibili** informazioni rispetto a **alternative** alla rinaturalizzazione delle cave.	0	1	2	3	4	5
9) Sono fiducioso che **gli enti regolatori (Regione, CMM, Comuni)** siano **preoccupati** rispetto alla salvaguardia degli **interessi dei cittadini e dell'ambiente.**	0	1	2	3	4	5
10) Sono fiducioso che **i proprietari delle cave** siano **preoccupati** rispetto alla salvaguardia degli **interessi dei cittadini e dell'ambiente.**	0	1	2	3	4	5

0-Non so 1-Fortemente in disaccordo 2-Disaccordo 3-Neutrale 4-D'accordo 5-Fortemente d'accordo

11) Sono fiducioso che **gli enti regolatori (Regione, CMM. Comuni)** abbiano **conoscenze, competenze e esperienza specializzata per valutare rischi e benefici** e prendano delle decisioni adeguate.	0	1	2	3	4	5
12) Sono fiducioso che **i proprietari delle cave** abbiano **conoscenze, competenze e esperienza specializzata per valutare rischi e benefici** e prendano delle decisioni adeguate.	0	1	2	3	4	5
13) Sono fiducioso che **gli enti regolatori (Regione, CMM. Comuni)** abbiano **conoscenze, competenze e esperienza** per intervenire **qualora si presentasse un problema** durante l'implementazione.	0	1	2	3	4	5
14) Sono fiducioso che **i proprietari delle cave** abbiano **conoscenze, competenze e esperienza** per intervenire **qualora si presentasse un problema** durante l'implementazione.	0	1	2	3	4	5
15) Sono fiducioso che **gli enti regolatori (Regione, CMM, Comuni)** si assicurino che siano state **prese** le adeguate **misure di sicurezza.**	0	1	2	3	4	5
16) Sono fiducioso che **i proprietari delle cave** si assicurino che siano state **prese** le adeguate **misure di sicurezza**	0	1	2	3	4	5

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17) Penso che la **progettazione** della rinaturalizzazione delle cave sia **trasparente**.	0	1	2	3	4	5
18) Penso che **l'implementazione** della rinaturalizzazione delle cave sia **trasparente**.	0	1	2	3	4	5
19) Sono fiducioso che **gli enti regolatori (Regione, CMM, Comuni) agiscano senza obblighi o pressioni politiche o private**	0	1	2	3	4	5
20) Penso che la **distribuzione dei benefici** della rinaturalizzazione delle cave tra me e gli altri sia **equa**	0	1	2	3	4	5
21) Penso che la **distribuzione dei svantaggi** della rinaturalizzazione delle cave tra me e gli altri sia **equa**	0	1	2	3	4	5
Parte D						
1) La rinaturalizzazione delle cave mi suscita **soddisfazione**	0	1	2	3	4	5
2) La rinaturalizzazione delle cave mi suscita **felicità**	0	1	2	3	4	5
3) La rinaturalizzazione delle cave mi suscita **speranza**	0	1	2	3	4	5
4) La rinaturalizzazione delle cave mi suscita **quiete/calma**	0	1	2	3	4	5
5) La rinaturalizzazione delle cave mi suscita **fierezza/orgoglio**	0	1	2	3	4	5
6) La rinaturalizzazione delle cave mi suscita **preoccupazione**	0	1	2	3	4	5
7) La rinaturalizzazione delle cave mi suscita **stress**	0	1	2	3	4	5
8) La rinaturalizzazione delle cave mi suscita **impotenza.**	0	1	2	3	4	5
9) La rinaturalizzazione delle cave mi suscita **paura**	0	1	2	3	4	5
10) La rinaturalizzazione delle cave mi suscita **rabbia**	0	1	2	3	4	5

0-Non so 1-Fortemente in disaccordo 2-Disaccordo 3-Neutrale 4-D'accordo 5-Fortemente d'accordo

Parte E						
1) Penso che la rinaturalizzazione delle cave comporti dei **costi** elevati	0	1	2	3	4	5
2) Penso che la rinaturalizzazione delle cave comporti un **rischio per me.**	0	1	2	3	4	5
3) Penso che la rinaturalizzazione delle cave comporti un **rischio per la mia famiglia e i miei amici.**	0	1	2	3	4	5
4) Penso che la rinaturalizzazione delle cave comporti un **rischio per la società.**	0	1	2	3	4	5

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5) Penso che le conseguenze siano **gravi quando sorgono problemi imprevisti** nel processo di rinaturalizzazione delle cave.	0	1	2	3	4	5
6) Penso che la rinaturalizzazione delle cave sia **sicura.**	0	1	2	3	4	5
7) Penso che la rinaturalizzazione delle cave **avvantaggi me.**	0	1	2	3	4	5
8) Penso che la rinaturalizzazione delle cave **avvantaggi la mia famiglia e i miei amici.**	0	1	2	3	4	5
9) Penso che la rinaturalizzazione delle cave **avvantaggi la società.**	0	1	2	3	4	5
10) Penso che la rinaturalizzazione delle cave **avvantaggi l'ambiente.**	0	1	2	3	4	5
11) Penso che la rinaturalizzazione delle cave **avvantaggi le future generazioni.**	0	1	2	3	4	5
12) Penso che la rinaturalizzazione delle cave contribuisce ad **attività economiche.**	0	1	2	3	4	5
13) Penso che la rinaturalizzazione delle cave sia **necessaria per la società.**	0	1	2	3	4	5
Parte F						
1) Penso che **visiterò** regolarmente delle cave	0	1	2	3	4	5
2) Penso che **la mia famiglia e i miei amici visiteranno** regolarmente delle cave	0	1	2	3	4	5
3) Penso che **la società (comunità) visiterà** regolarmente delle cave	0	1	2	3	4	5
Parte G						
1) Penso che la rinaturalizzazione delle cave sia **accettabile per me**.	0	1	2	3	4	5
2) Penso che la rinaturalizzazione delle cave sia **accettabile per la mia famiglia e i miei amici.**	0	1	2	3	4	5
3) Penso che la rinaturalizzazione delle cave sia **accettabile per** la **società.**	0	1	2	3	4	5
4) Penso che la rinaturalizzazione delle cave sia **accettabile per le future generazioni.**	0	1	2	3	4	5
5) Sarei disposto a **tollerare** delle cave **vicino a casa mia**	0	1	2	3	4	5
Parte H						
1) Mi aspetto che **persone per me importanti pensino** che io debba essere fortemente a favore della rinaturalizzazione delle cave.	0	1	2	3	4	5
2) Se **agissi secondo i miei principi,** agirei in favore della rinaturalizzazione delle cave.	0	1	2	3	4	5

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Appendix G: Questionnaire for Forest Garden

Nature4Cities -Nature Based Solutions for re-naturing cities: knowledge diffusion and decision support platform through new collaborative models- is a project funded by the European Union and intends to support local authorities and urban planners in project developments, and to give them new tools to engage citizens in the process. We would kindly invite you to take part in a survey of Nature4Cities by reading and filling out the following information. This will take approximately 15 minutes. Thank you for your cooperation.

□ I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalized or disadvantaged in any way.

Please read the following information about the edible forest in Alcalá de Henares before continuing with the survey:

The edible forest in Alcalá de Henares (Forest Garden of AH**)** was created with the aim of increasing biodiversity in the Isla del Colegio Park, and to offer a multifunctionality space. The forest not only provides an environment for recreational activities and performs a buffering role against the pressure on the gallery forest, but also serves to recover the protected banks of the river Henares. The creation of the edible forest is being carried out thanks to the collaboration between citizens and the City Council of Alcalá de Henares through volunteer activities.

Questions

Age: ……

Gender: □ Male □ Female □ Prefer not to answer

Familiarity: Are you familiar with the Forest Garden of AH? □ Yes □ No □ Not Sure

Experience: Have you visited the Forest Garden of AH? □ Yes □ No □ Not Sure

How would you rate your experience at the Forest Garden of AH? □ Not Applicable □ Poor □ Fair □ Good □ Very Good □ Excellent

Proximity: Do you live close to the Forest Garden of AH? □ Yes □ No

Employment: Please select the option that best describes your employment status:

□ Academic

□ Business / for-profit organizations

□ Policy (including local, regional, national, international)

□ NGOs / charities / not-for-profit organizations

□ Other: **.....**

Please indicate your level of agreement or disagreement with each of these statements about the Forest Garden of AH using the identified scales:

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	Don't Know	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Part A						
1) I think we should **actively prevent** global warming.	0	1	2	3	4	5
2) I think global warming is **against nature's laws.**	0	1	2	3	4	5
3) I think global warming is **negative legacy** from the development of civilization.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Part B						
1) I think I have **sufficient knowledge** about the Forest Garden of AH .	0	1	2	3	4	5
2) **How** did you **obtain** this information?	Television	Newspapers	Social media	People around me	On-site visit	Other: …..
3) I think there are **enough opportunities** for the public **to be informed** about the Forest Garden of AH.	0	1	2	3	4	5
Part C						
1) I think I am **given a say in the planning process** of the Forest Garden of AH.	0	1	2	3	4	5
2) I think **public opinion is sufficiently regarded** in the planning process of the Forest Garden of AH.	0	1	2	3	4	5
4) I think the City Council of Alcalá de Henares is **reliable.**	0	1	2	3	4	5
6) I think the City Council of Alcalá de Henares **discloses information** including that **disadvantageous to them.**	0	1	2	3	4	5
8) I think the City Council of Alcalá de Henares discloses information about **alternatives** to the Forest Garden of AH .	0	1	2	3	4	5
10) I feel confident that the City Council of Alcalá de Henares is **concerned about safeguarding the interests of the citizens and the environment.**	0	1	2	3	4	5
12) I feel confident that the City Council of Alcalá de Henares has specialized **knowledge, skills and experience to assess the risks and benefits** and make adequate decisions.	0	1	2	3	4	5

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14) I feel confident that the City Council of Alcalá de Henares has **specialized knowledge, skills and experience** to **solve** forthcoming **problems.**	0	1	2	3	4	5
16) I feel confident that the City Council of Alcalá de Henares makes sure that adequate **safety measures** are met.	0	1	2	3	4	5
17) I think the **planning** of the Forest Garden of AH is **transparent.**	0	1	2	3	4	5
18) I think the **creation process** of the Forest Garden of AH is **transparent.**	0	1	2	3	4	5
19) I feel confident that the City Council of Alcalá de Henares acts without **political or private pressures and obligations.**	0	1	2	3	4	5
20) I think the **distribution of benefits** of the Forest Garden of AH with respect to myself and others is **fair.**	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
21) I think the **distribution of drawbacks** of the Forest Garden of AH with respect to myself and others is **fair.**	0	1	2	3	4	5
Part D						
1) The Forest Garden of AH invokes **satisfaction** in me.	0	1	2	3	4	5
2) The Forest Garden of AH invokes **joy** in me.	0	1	2	3	4	5
3) The Forest Garden of AH invokes **hope** in me.	0	1	2	3	4	5
4) The Forest Garden of AH invokes **calmness** in me.	0	1	2	3	4	5
5) The Forest Garden of AH invokes **pride** in me.	0	1	2	3	4	5
6) The Forest Garden of AH invokes **worry** in me.	0	1	2	3	4	5
7) The Forest Garden of AH invokes **stress** in me.	0	1	2	3	4	5
8) The Forest Garden of AH invokes **powerlessness** in me.	0	1	2	3	4	5
9) The Forest Garden of AH invokes **fear** in me.	0	1	2	3	4	5
10) The Forest Garden of AH invokes **anger** in me.	0	1	2	3	4	5
Part E						
1) I think the Forest Garden of AH will be built at high **costs.**	0	1	2	3	4	5

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2) I think the Forest Garden of AH poses a risk to **me.**	0	1	2	3	4	5
3) I think the Forest Garden of AH poses a risk to **my family and friends.**	0	1	2	3	4	5
4) I think the Forest Garden of AH poses a risk to **society.**	0	1	2	3	4	5
5) I think the consequences are **severe** when **unanticipated problems arise** in the process of creating the Forest Garden of AH .	0	1	2	3	4	5
6) I think the Forest Garden of AH is **safe.**	0	1	2	3	4	5
7) I think the Forest Garden of AH benefits **me.**	0	1	2	3	4	5
8) I think the Forest Garden of AH benefits **my family and friends.**	0	1	2	3	4	5
9) I think the Forest Garden of AH benefits **society.**	0	1	2	3	4	5
10) I think the Forest Garden of AH benefits the **environment.**	0	1	2	3	4	5
11) I think the Forest Garden of AH benefits **future generations.**	0	1	2	3	4	5
12) I think the Forest Garden of AH contributes to **economic activities.**	0	1	2	3	4	5
13) I think the Forest Garden of AH is **necessary for the society.**	0	1	2	3	4	5
Part F						
1) I think **I will visit** the Forest Garden of AH on a regular basis.	0	1	2	3	4	5
	Don't Know	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
2) I think **my family and friends will visit** the Forest Garden of AH on a regular basis.	0	1	2	3	4	5
3) I think **the society will visit** the Forest Garden of AH on a regular basis.	0	1	2	3	4	5
Part G						
1) I think the Forest Garden of AH is acceptable to **me.**	0	1	2	3	4	5
2) I think the Forest Garden of AH is acceptable to **my family and friends.**	0	1	2	3	4	5
3) I think the Forest Garden of AH is acceptable to **society.**	0	1	2	3	4	5

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4) I think the Forest Garden of AH is acceptable to **future generations.**	0	1	2	3	4	5
5) I would **tolerate** the Forest Garden of AH **close to my house**.	0	1	2	3	4	5
Part H						
1) I think I can **easily access** the Forest Garden of AH .	0	1	2	3	4	5
2) I think the Forest Garden of AH has a **positive impact on the climate** of Alcalá de Henares.	0	1	2	3	4	5
3) I think the Forest Garden of AH helps **cushion the pressure of the population** on the river Henares.	0	1	2	3	4	5
4) I expect that **people important to me think** I should be strongly in favor of the Forest Garden of AH.	0	1	2	3	4	5
5) If I **acted according to my principles**, I would act in favor of the Forest Garden of AH.	0	1	2	3	4	5

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Appendix H: Questionnaire for Forest Garden (in Spanish)

Nature4Cities - soluciones basadas en la naturaleza para la renaturalización de las ciudades: plataforma de difusión del conocimiento y apoyo a la decisión a través de nuevos modelos de colaboración -es un proyecto financiado por la Unión Europea y tiene la intención de apoyar a las autoridades locales y urbanistas en desarrollar proyectos, y darles nuevas herramientas para involucrar a los ciudadanos en el proceso. Le invitamos a participar en una encuesta de Nature4Cities leyendo y rellenando la siguiente información. Esto le llevará aproximadamente 15 minutos. Gracias por su cooperación.

□ Entiendo que mi participación es voluntaria, que puedo optar por no participar en parte o en todo el proyecto, y que puedo retirarme en cualquier etapa del proyecto sin ser penalizado o perjudicado de ninguna manera.

Por favor, lea la siguiente información sobre el Bosque Comestible en Alcalá de Henares antes de continuar con la encuesta

El **Bosque comestible** de la Isla del Colegio en Alcalá de Henares (Bosque Comestible de AH) es una recreación de un espacio natural pensado para incrementar la biodiversidad y recuperar los beneficios de estos sistemas naturales. Servirá de refugio, de fuente de alimento, de espacio de protección de fauna que además ayudará en la dispersión de semillas y la polinización.

Además, actúa como barrera natural entre el espacio protegido de la Red Natura 2000 al que pertenece el río Henares y sus riberas, y desarrollo funciones de amortiguación de la vegetación de ribera.

Este bosque, de bajo mantenimiento y alta sostenibilidad, cuenta con especies en los diferentes estratos; árboles altos, árboles bajos arbustos, platas bajas cercanas al suelo y diversas especies; nogal, cerezo, manzano, cornicabra, majuelo, malva, jaramago u otras especies herbáceas.

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Preguntas

Edad: ……

Género: □ Hombre □ Mujer □ Prefiere no contestar

Familiaridad: ¿Está familiarizado con el Bosque Comestible de AH? □ sí □ no □ no estoy seguro

Experiencia: ¿ha visitado el Bosque Comestible de AH**?** □ sí □ no □ no estoy Seguro

¿Cómo calificaría su experiencia en el Bosque Comestible de AH? □ no aplicable □ Pobre □ Media □ Buena □ muy buena

□ Excelente

Proximidad: ¿vives cerca del Bosque Comestible de AH? □ sí □ no

Empleo: por favor seleccione la opción que mejor describe su estatus laboral**:**

□ Estudiante

□ Empleado/a

□Política (incluyendo local, regional, nacional, internacional)

□ ONGs/caridades/organizaciones sin ánimo de lucro

□ otros:.....

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Por favor indique su nivel de acuerdo o desacuerdo con cada una de estas declaraciones sobre el Bosque Comestible de AH usando las escalas identificadas

	No sé	Muy en desacuerdo	Desacuerdo	Neutral	De acuerdo	Muy de acuerdo
Parte A						
1) Creo que debemos prevenir activamente el calentamiento global.	0	1	2	3	4	5
2) Creo que el calentamiento global afecta negativamente a la naturaleza.	0	1	2	3	4	5
3) Creo que el calentamiento global es un legado negativo del desarrollo de la civilización.	0	1	2	3	4	5
Part B						
1) Creo que tengo suficiente conocimiento sobre el Bosque Comestible de AH.	0	1	2	3	4	5
2) ¿Cómo obtuvo esta información?	TV	Periódicos	Redes Sociales	Por mi entorno	Visitandolo	Otras: …..
3) Creo que hay suficientes oportunidades para que el público sea informado sobre el Bosque Comestible de AH.	0	1	2	3	4	5
Parte C						
1) Creo que se me ha dado oportunidad de opinar en el proceso de planificación del Bosque Comestible de AH.	0	1	2	3	4	5
	No sé	**Muy en desacuerdo**	**En desacuerdo**	**Neutral**	**De acuerdo**	**Muy de acuerdo**
2) Creo que la opinión pública está suficientemente considerada en el proceso de planificación del Bosque Comestible de AH.	0	1	2	3	4	5
3) Creo que el Ayuntamiento de Alcalá de Henares tiene capacidad para asumir el proyecto.	0	1	2	3	4	5
4) Creo que el Ayuntamiento de Alcalá de Henares difunde toda la información del proyecto.	0	1	2	3	4	5

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5) Creo que el Ayuntamiento de Alcalá de Henares divulga información sobre alternativas al Bosque Comestible de AH.	0	1	2	3	4	5
6) Confió en que el Ayuntamiento de Alcalá de Henares se preocupa por salvaguardar los intereses de los ciudadanos y del medio ambiente.	0	1	2	3	4	5
7) Confió en que el Ayuntamiento de Alcalá de Henares tiene conocimientos especializados, habilidades y experiencia para evaluar los riesgos y beneficios y tomar decisiones adecuadas.	0	1	2	3	4	5
8) Siento seguridad de que el Ayuntamiento de Alcalá de Henares tiene conocimientos especializados, habilidades y experiencia para resolver los problemas que surjan	0	1	2	3	4	5
9) Creo que la planificación del Bosque Comestible de AH es transparente.	0	1	2	3	4	5
10) Creo que el proceso de creación del Bosque Comestible de AH es transparente.	0	1	2	3	4	5
11) Creo que el Ayuntamiento de Alcalá de Henares actúa sin presiones y obligaciones políticas o privadas.	0	1	2	3	4	5
12) Creo que la distribución de los beneficios del Bosque Comestible de AH con respecto a mí y a los demás es justa.	0	1	2	3	4	5
13) Creo que la distribución de los impactos del Bosque Comestible de AH con respecto a mí y a otros es justo.	0	1	2	3	4	5
	No sé	**Muy en desacuerdo**	**En desacuerdo**	**Neutral**	**De acuerdo**	**Muy de acuerdo**
Parte D						
1) El Bosque Comestible de AH me aporta satisfacción.	0	1	2	3	4	5
2) El Bosque Comestible de AH es agradable	0	1	2	3	4	5

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3) El Bosque Comestible de AH me aporta ilusión.	0	1	2	3	4	5
4) El Bosque Comestible de AH me aporta calma.	0	1	2	3	4	5
5) El Bosque Comestible de AH me enorgullece.	0	1	2	3	4	5
6) El Bosque Comestible de AH me genera preocupación.	0	1	2	3	4	5
7) El Bosque Comestible de AH me genera estrés.	0	1	2	3	4	5
8) El Bosque Comestible de AH me genera impotencia.	0	1	2	3	4	5
9) El Bosque Comestible de AH me genera inseguridad.	0	1	2	3	4	5
10) El Bosque Comestible de AH me genera irritación.	0	1	2	3	4	5
Parte E						
1) Creo que el Bosque Comestible de AH supone una elevada inversión.	0	1	2	3	4	5
2) Creo que el Bosque Comestible de AH supone un riesgo para mí.	0	1	2	3	4	5
3) Creo que el Bosque Comestible de AH supone un impacto para mi familia y amigos.	0	1	2	3	4	5
4) Creo que el Bosque Comestible de AH representa un impacto para la sociedad.	0	1	2	3	4	5
5) Creo que las consecuencias son graves cuando surgen problemas imprevistos en el proceso de crear el Bosque Comestible de AH.	0	1	2	3	4	5
6) Creo que el Bosque Comestible de AH es seguro.	0	1	2	3	4	5
7) Creo que el Bosque Comestible de AH me beneficia.	0	1	2	3	4	5
8) Creo que el Bosque Comestible de AH beneficia a mi familia y amigos.	0	1	2	3	4	5
9) Creo que el Bosque Comestible de AH beneficia a la sociedad.	0	1	2	3	4	5
10) Creo que el Bosque Comestible de AH beneficia al medio ambiente.	0	1	2	3	4	5

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	No sé	Muy en desacuerdo	En desacuerdo	Neutral	De acuerdo	Muy de acuerdo
11) Creo que el Bosque Comestible de AH beneficia a las generaciones futuras.	0	1	2	3	4	5
12) Creo que el Bosque Comestible de AH contribuye a las actividades económicas.	0	1	2	3	4	5
13) Creo que el Bosque Comestible de AH es necesario para la sociedad.	0	1	2	3	4	5
Parte F						
1) Creo que voy a visitar el Bosque Comestible de AH sobre una base regular.	0	1	2	3	4	5
2) Creo que mi familia y amigos visitarán el Bosque Comestible de AH de forma regular.	0	1	2	3	4	5
3) Creo que la sociedad visitará el Bosque Comestible de AH de forma regular	0	1	2	3	4	5
Parte G						
1) Creo que el Bosque Comestible de AH es positivo para mí.	0	1	2	3	4	5
2) Creo que el Bosque Comestible de AH es positivo para mi familia y amigos.	0	1	2	3	4	5
3) Creo que el Bosque Comestible de AH es positivo para la sociedad.	0	1	2	3	4	5
4) Creo que el Bosque Comestible de AH es positivo para las generaciones futuras	0	1	2	3	4	5
5) Toleraría el Bosque Comestible de AH cerca de mi casa	0	1	2	3	4	5
Parte H						
1) Creo que puedo acceder fácilmente al Bosque Comestible de AH	0	1	2	3	4	5
2) Creo que el Bosque Comestible de AH tiene un impacto positivo en el clima de Alcalá de Henares	0	1	2	3	4	5
3) Creo que el Bosque Comestible de AH ayuda a amortiguar la presión de la población en el río Henares	0	1	2	3	4	5

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4) Espero que la gente importante para mí crea que debe estar a favor del Bosque Comestible de AH.	0	1	2	3	4	5
5) Si yo actuara de acuerdo a mis principios, yo actuaría a favor del Bosque Comestible de AH	0	1	2	3	4	5

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