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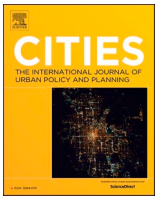

Public participation and consensus-building in urban planning from the lens of heritage planning: A systematic literature review

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ABSTRACT

Public participation has been growing in both theory and practice of urban planning, including heritage planning. The reasoning is to facilitate the involvement of a broader group of stakeholders, beyond experts. More specifically, for heritage planning, participation could enable consensus-building on defining the significance of heritage, namely attributes (the resources that should be listed as heritage), and values (the reasons that attributes are important). However, there is not yet a holistic understanding of the influencing factors behind consensus-building in the participatory planning processes for cultural heritage. To evaluate existing research from this angle, a systematic literature review was conducted on peer-reviewed articles using the Scopus database. As most of the studies focuse on urban planning, this research examines the factors influencing consensus-building in the participatory planning process applied to urban and heritage planning and reflects on the applicability of these factors in heritage planning. The main factors were identified inductively and grouped into two categories: 1) public participation: actors, methods, and levels of public participation, and 2) consensus: approaches, and conflicts. The relations between these factors and their frequencies are investigated using statistical analysis methods, namely frequency analysis, independent-samples *t*-test, and Spearman correlation. The literature confirms that urban planning has applied more diverse methods and tools for public participation compared to studies in the field of heritage planning, and could inspire heritage planning. Conflict is recognized as an intertwined concept with consensus which is considered either as a challenge or as a necessity for an inclusive decision-making. By proposing a framework integrating these factors and sub-factors and illustrating their relationships, this research could also be useful for decision-makers and practitioners to better tailor the public participation process and means to implement it, considering the relevant factors involved.

1. Introduction

Urban planning has a rich history in public participation and consensus-building, and accordingly there has been much literature from both academics and practitioners published since the 1960s (see Innes & Booher, 2004). Public participation is a necessity of sustainable urban planning (Amado, 1970) that should be included in urban planning regulations (Forester, 1999). In the last decades, there has been a growing interest in public participation in heritage planning which is essential to develop sustainable heritage further (Landorf, 2009). A participatory approach is often positively associated with socially inclusive innovation processes, cultural value creations (Nakagawa, 2010; Sasaki, 2010), and forming a shared sense of identity (Biondi et al., 2020). It has been proven that local actors can support and actively contribute to the success of heritage planning (Li et al., 2020; Martinović & Ifko, 2018; Mirzakhani et al., 2021).

In addition to academic literature, international policy documents such as the UNESCO Recommendation on the Historic Urban Landscape (HUL) recognize public participation as an essential tool in heritage planning, management, and conservation (Taylor, 2016; UNESCO, 2011; Veldpaus et al., 2015). Given the wider range of multi-disciplinary stakeholders, beyond experts, involved in a participatory process, consensus-building is a key to define heritage and its cultural significance (values and attributes) (Den, 2014; Myers et al., 2016; Thomas, 2008). While in the past, there was no need for participatory consensus-building mechanisms, as experts, primarily humanity experts as historians, architects, and archaeologists, were the one who determined the heritage listings.

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Despite the growing literature on public participation and consensus-building in heritage planning (e.g., Dragouni & Fouseki, 2018; Van Assche & Duineveld, 2013; Wells & Lixinski, 2016), there is a knowledge gap on the factors affecting such processes. A holistic view of the factors affecting such processes is desired to better understand and manage the process. On the other hand, as mentioned, urban planning has a longer history and more diverse methods and tools for public participation compared to research in the field of heritage planning. Heritage planning can gain insights from urban planning by interpreting urban planning practices from a heritage planning lens. This approach follows the same principle proposed that heritage studies could benefit from the integration of urban and heritage planning studies (Hosagrahar et al., 2016; Veldpaus, 2015). This study, therefore, aims to answer the research question: what are the factors and sub-factors influencing consensus-building in public participation processes in urban planning and heritage planning studies, and what are their relations?

To systematically select and examine relevant studies and answer the research question, it is necessary to understand the existing body of knowledge on this topic and also evaluate them critically. Therefore, it is desired to set up the search protocol to select and critically analyze the existing research, which is in line with the procedure of a systematic literature review. This research, therefore, aims to reveal the factors and sub-factors, using a systematic literature review approach.

Section 2 illustrates the research methods applied, followed by results in Section 3 to show the identified influencing factors and sub-factors, and their relations. Section 4 presents a theoretical framework illustrating the relations among these factors to guide future research directions. Section 5 concludes the study. In this paper, we use terms factors and sub-factors only to convey the parameters that affect consensus-building in urban planning and heritage planning. This paper revealed these parameters through the systematic literature review.

2. Methods

This section is divided into two parts in which Section 2.1 describes the systematic literature review process and Section 2.2 illustrates the analysis approach of the selected literature by manual thematic analysis to reveal important patterns and factors, supplemented by quantitative analysis to find the relations between the factors identified.

2.1. Search strategies

This research followed a systematic literature review process, adapted by Boland et al. (2017), developing a protocol for searching, finding, and selecting articles to minimize bias. The scope of the review was international in geographical extent and limited to English-language academic peer-reviewed articles. Relevant records were specified, categorized, and their main findings were extracted. A broader systematic literature review was conducted, based on three key terms, namely "public participation," "consensus," and "values and attributes." Although the different variations of these terms were used as search terms, these three terms are the ones used further in this paper (see Table 1).

Due to the low number of records of publications addressing all three concepts, this research includes articles that have at least two of the three key concepts in their title, abstract, or keywords. Scopus, a peer-reviewed academic database, was taken as the data source in June 2019, and publications were collected from the fields of Social Sciences, Engineering, Environmental Science, and Arts and Humanities. The inclusion and exclusion criteria were threefold: 1) the content of the paper, 2) the language of the full-text record (excluding non-English), and 3) the type of document (excluding thesis/full books). The PRISMA diagram (Liberati et al., 2009) illustrates the search process, starting with 618 records and ending with 121 studies, which complied with the selection criteria (see Fig. 1).

Table 1
Search terms for the systematic literature review.

Search concepts	Public participation	Consensus	Values and attributes
Definitions	Public participation concerns how local planning authorities should consider the issue of "public" influence over planning decisions in general (Thomas, 2003).	Consensus means a maximum agreement of opinions. It may produce decisions that do not meet everyone's full expectations. But, it should not produce decisions through a narrow majority (Bailey et al., 2011)	The cultural significance includes values (answering the question of "why resources should be protected?") and attributes (answering the question of "what resources should be protected?") that entitle each particular heritage asset. (Veldpaus, 2021)
Keywords	"public" OR "community" OR "citizen" OR "local" OR "actor" OR "stakeholder"	"conflict" OR "consensus"	"value and attribute" OR "heritage value" OR "cultural significance" OR "historical significance" OR "value and heritage" OR "significance and heritage" OR "attribute and heritage" OR "intangible and asset and heritage"
Wild cards	"participa*" OR "engag*" OR "involv*"		

2.2. Classification and analysis

This study used manual thematic analysis to reveal important patterns (themes) about how a phenomenon is being addressed (Daly et al., 1997; Schadewitz & Jachna, 2007). The guidelines of Nowell et al. (2017) are followed through deriving and coding factors relating to public participation and consensus-building on cultural significance. To complement this approach, quantitative analysis was performed. This analysis contributes to finding unfound relations between the factors and sub-factors so that future studies and practices can have a holistic view of the intertwined complex relations. These statistical analyses include frequency analysis (the frequency percentages of the coded keywords), independent-samples *t*-tests, and spearman correlation analyses.

Frequency analysis is only used to further analyze factors for which qualitative content analysis was not possible due to the inconsistent definition in the literature. Independent-samples *t*-test which is useful to compare the means of two groups (Ross & Willson, 2017), was conducted to compare the factors and sub-factors in different groups of case studies. Spearman correlation is often used to evaluate relationships involving ordinal variables (Artusi et al., 2002). It was used to find the significant and minor correlations between quantified factors and sub-factors. Finally, a theoretical framework of the factors and sub-factors and their relations is developed and further discussed.

The main factors were identified inductively and grouped into two categories: 1) public participation: actors, methods, and levels of public participation, and 2) consensus: approaches, and conflicts. These factors and sub-factors will be used to guide the analysis processes. The IAP2 (International Association for Public Participation) framework, built up on Arnstein's (1969) framework, was used as the theoretical framework to analyze the level of public participation and rank them accordingly, between 1 and 5 (International Association of Public Participation [IAP2], 2007). The IAP2 framework was used because it defines clear relations, goals, and techniques for each level of public participation

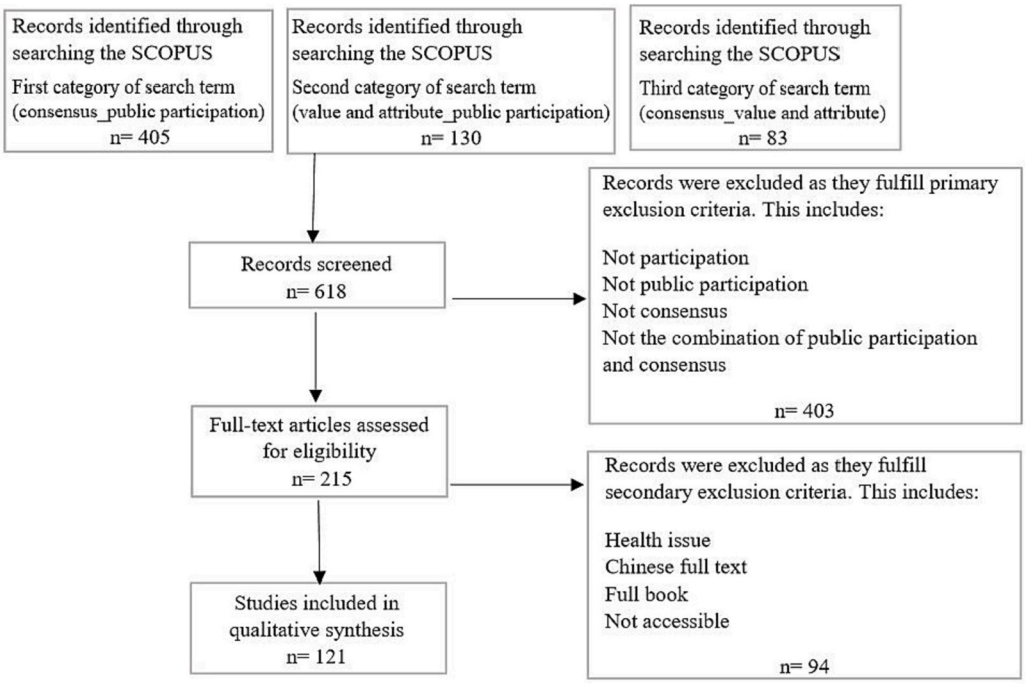

Fig. 1. PRISMA diagram, detailing the number of eligible records in each step and exclusion criteria.

facilitating the case studies' categorization (see Table 2).

Besides, to classify the actors, the theoretical framework by Pereira Roders (2019), among different frameworks (e.g., Li, 2020), is used due to its clear definitions for heritage planning practices, which serves as the lens for this study (see Table 3). Respectively, it splits stakeholders into two groups, public and private stakeholders with three sub-categories within each group. These are Politicians, policymakers, and officers as public stakeholders, and professional/experts, daily users, and occasional users as private stakeholders. This diversity is assumed to help distinguish patterns among them in literature.

3. Results

This section presents the analysis framework in 3.1, which is derived from the manual coding procedure and follows the IAP2 and actor in heritage planning frameworks presented in Section 2. This analysis framework serves as the skeleton to categorize the factors and their sub-factors. Sections 3.2 and 3.3 elaborate on the results from public participation and consensus perspectives following the analysis framework in 3.1. Section 3.4 illustrates the statistical analysis results to reveal the relationships among those identified factors.

Table 3
The framework on actors in heritage planning.

Main category	Stakeholders	Definitions, examples
Public	Politicians	National, regional and local politicians, the administration, the governors, alderman
	Policy makers	Those developing the plans and tools to manage local resources
	Officers	Those carrying out the implementation of policies applied to the local context and specific projects
Private	Professional/ experts	Experts working both in academia, e.g. researchers, and in practice, as in consultancy and advice, e.g. technician, advice, designer or volunteer/amateur experts, e.g. local experts, pressure groups, knowledge groups
	Daily users	Those in contact with the heritage resources on daily basis, e.g. owners, residents, and users. These also include the developers/private sector, with an (economic) stake in the heritage resource, e.g. selling, developing, exploiting, etc.
	Occasional users	Community in general, e.g. local, regional and national population, tourists, educators

(Adapted from Pereira Roders, 2019.)

Table 2
The IAP2 framework on public participation.

Levels	Inform(1)	Consult(2)	Involve(3)	Collaborate(4)	Empower(5)
Public participation goal	To provide the community with relevant and objective information to assist them in understanding the management project, approaches, and intended outcomes.	To obtain community feedback at the start of the management project to help with analysis, approaches, and/or decisions.	To work directly with the community throughout the management process to ensure that their concerns and aspirations are understood and considered properly.	To partner with the community to work through management problems, alternatives, solutions, and decisions together.	To place final decision-making and future projects in the hands of the community.
Example techniques	Fact sheets, Web sites, Open houses	Public comments, Focus groups, Surveys, Public meetings	Workshops, Deliberative polling	Citizen advisory committees, Consensus-building, Participatory decision making	Citizen juries, Ballots, Delegated decision

(Adapted from International Association of Public Participation [IAP2], 2007.)

3.1. General description

From the 121 publications, 18 studies research public participation fundamentally. Most literature (85 %) analyzes public participation through case studies in the fields of spatial planning (87 %), infrastructure planning (11 %), and political management (2 %). The case studies have different scales, ranging from neighborhoods (e.g., Aigwi et al., 2019) to urban development projects (e.g., Brown & Raymond, 2014; Hardoy et al., 2019). These case studies are primarily located in Europe (40 %), followed by America (29 %) and Asia (20 %), and last, by Oceania (10 %) and Africa (1 %). Table 4 illustrates the factors and sub-factors recognized and classified in this paper based on the two frameworks presented in Section 2, and are broadly presented in the following sections.

3.2. Public participation process

3.2.1. Actors

Actors who participated in the urban planning processes were widely addressed (68 %), including the number of interest groups, types of invitations, selection criteria of the participants, and the role of different actors. The public participation process is oftendesigned for a specific profile of actors, either a social group and/or age (e.g., local community: Garcia et al. (2017), Sujarwo and Caneva (2016); young students:). Among these case studies, residents are the most common daily users (e.g., Balug & Vidart-Delgado, 2015; Bergeron et al., 2014; Bieling, 2014; Brown & Donovan, 2014; Brown & Weber, 2012; Henningsson et al., 2015; McLain et al., 2017; Meutia et al., 2018), involved in 24 out of 85 case studies.

Most studies considered two or more interest groups. For example, McCreary et al. (2016) investigated a case study with 14 interest groups (the highest number found in the literature) to create recommendations to improve the future multi-stakeholder marine policy process. A full range of interest groups was involved, including commercial fishing businesses, recreational users, local governments from coastal cities, the U.S. Department of Defense, and conservation organizations.

The selection of participants was pointed out to be essential to the success of the public participation process (Arciniegas & Janssen, 2012; Finka et al., 2017; Gerasidi et al., 2009; Pérez-Soba et al., 2018; Starkl et al., 2013). Given that, Gerasidi et al. (2009) defined a selection process in three sequential steps. This process offered an equal chance of involvement to each interest group. Accordingly:

(a) Stakeholder mapping (identification of all potential stakeholders who influence or is influenced by the project decisions);
(b) Assessment of stakeholder's interests, positions, and how they could be influenced by project risk and viability;
(c) Selection of different stakeholders to be involved in the study processes.

After the interest groups' selection, participants would often be invited. While in some case studies participation was open to everyone (e.g., Dolff-Bonekämper, 2010; Golobič & Marušič, 2007; Martinović & Ifko, 2018; Walsh & Burch, 2012). In other case studies, participants were mainly selected with different sampling methods. These sampling methods include random sampling (e.g., Bergeron et al., 2014; Brown & Weber, 2012; Dragouni & Fouseki, 2018; Marcucci et al., 2017), snowball sampling (e.g., Garcia et al., 2018; Hopkins, 2010; Lo & Lee, 2011), stratified sampling (e.g., Bentrupperbäumer et al., 2006), non-proportional quota sampling (e.g., Garcia et al., 2018), purposive sampling (e.g., Garcia et al., 2017), and convenience sampling (e.g., Gray et al., 2017).

The role of participants was also recognized as a critical element in the success of the public participation process (Biondi et al., 2020; Jung et al., 2015; Mirzakhani et al., 2021). A few scholars have already explored the role of leaders, planners, policymakers, and seldom the public (e.g., Cheng, 2013; Fahmi et al., 2016; Maginn, 2007; Purbani, 2017; Van Assche & Duineveld, 2013). Accordingly, leaders (e.g., Fahmi et al., 2016; Purbani, 2017) and city planners (e.g., Cheng, 2013; Purbani, 2017; Van Assche & Duineveld, 2013) were identified as stakeholders who can play a variety of roles. Leaders can nurture dialogues, foster participation, balance power, and manage conflicts. Planners can facilitate dialogues, strategize and synthesize, build democratic politics, and raise awareness on disciplines' diversity as well as find common ground among them.

In addition to the roles that leaders and city planners can undertake, the role of policymakers was considered crucial. Maginn (2007) suggested three roles for policymakers: 1. developing a more sophisticated understanding of the topography and culture of local communities, 2. demonstrating an explicitly genuine commitment to participation by embracing community diversity and conflict, 3. being more critically aware of the impacts of their cultural practices. Overall, these roles can contribute to policymakers' understanding of the effect of their decisions on structures, processes, policy discourse(s), and approaches towards local communities on the participatory experiences of different groups within a neighborhood.

In heritage planning, daily users living close to heritage properties have the highest priority to be involved because their daily routines and rituals are associated with local cultural heritage (Nic Eoin et al., 2013; Poulios, 2014). Conforti et al. (2015) argue that the values that these key stakeholders convey to heritage attributes need to be well-considered to enhance their motivation for safeguarding cultural heritage. Daily users were found as the second most involved in the participatory process with different roles. The role of other stakeholders (e.g., leaders, planners, and policymakers) was primarily as facilitators, to support, guide, and assist the key stakeholders in the decision-making processes of local cultural heritage management (Chipangura et al., 2017; Lekakis, 2013; Li et al., 2020; Poulios, 2014). Further research could explore key stakeholders' roles in a successful public participation process.

3.2.2. Levels of public participation

Most literature (80 %) provided information about the level of public participation but did not classify it according to any theoretical framework. In more than half of the case studies (55 %), public participation practices matched level two of the IAP2 framework, i.e., consultation (see Fig. 2). These case studies provided a one-way interaction between the participants and the organizing team in which the participants gave information to the execution team. This consultation process typically took place in different steps of the public participation process, using various methods and data sources (Aigwi et al., 2019; Biedenweg et al., 2019; García et al., 2019).

For example, van der Hoeven (2020) collected data from a collaborative heritage website and performed thematic analysis to identify recurring patterns. Yu et al. (2019) investigated a project at level two of the IAP2 framework by collecting data via interviews with key stakeholders, reviewing project documents, and using a model to analyze stakeholders' conflicts and develop action schemes.

The next most frequent level of participation is level three (32 %),

Table 4
Factors and their sub-factors revealed through the literature review.

Public participation	Consensus
Actor: Number of interest groups| Selection process|Participants' role	Approach
Level (1–5): Based on IAP2 framework	Conflict: Approaches|Subjects of conflict|Conflict resolution
Method: Data collection: qualitative/ quantitative/mixed Data analysis: qualitative/ quantitative/mixed	

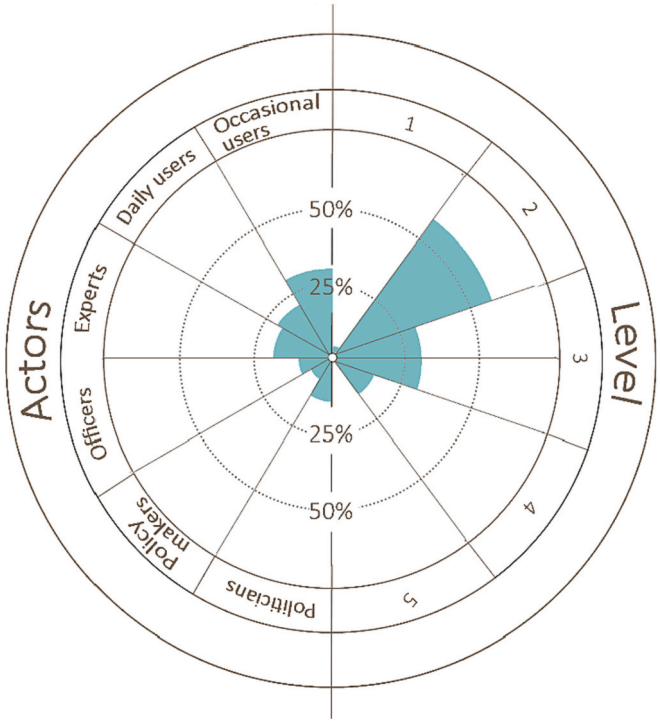

Fig. 2. Range of interest groups and level of public participation revealed in the 103 case studies analyzed (among 121 analyzed literature) according to the IAP2 framework.

involvement, enabling two-way interaction between the participants and the execution team. Participants do not interact with each other but only with the execution team. An example of such process is García et al.' (2019) study, which followed three steps. Residents of two traditional neighborhoods of Cuenca, Ecuador, were surveyed to convey their opinions on the significance of cultural heritage. Then, stakeholders were mapped according to their links, influences, and particular interests in the neighborhood (e.g., practices, rituals, and festive events). Lastly, a series of interactive workshops were held to facilitate knowledge exchange between participants and the execution team.

Some cases matched level four (12 %), to collaborate, through which a two-way interaction was established between the participants and the execution team and between the participants themselves. In the study of Golobič and Marušič (2007), residents of Komenda, Slovenia, Europe participated in a survey including a writing part and a cognitive map to give their opinions on land-use planning. Then, the interest groups were identified based on the similarities and differences in participants' answers. In addition, the cognitive maps were processed and synthesized with experts' knowledge, and new maps were created. These maps were used in the workshops to facilitate conflict identification and resolution with all the participants' collaboration with each other and the execution team.

Were the only found study specifically focused on level one (1 %), to inform, which only informs the participants, specifically to raise awareness about heritage properties. A digital campaign was held in Oceania through which digital images and snapshots of information (e.g., pictures of buildings with descriptions of their history and values, for example, the Regent Theatre) were regularly shared with the public through Facebook, Instagram, Pinterest, and Twitter. A diverse range of over 2000 community members was attracted to this online event. Informing enables a one-way interaction between the participants and the execution team in which the participants get information from the execution team. However, most of the other case studies with a higher level of public participation also take this step.

The literature did not reveal case studies that empower the residents (level five) through which a two-way interaction is possible between the participants, and between the participants and the execution team. The difference between levels four and five is that in the latter, the executive team gives the decision-making power fully to the participants.

Overall, almost all case studies went further than informing and at least consulted with the stakeholders, which denotes varied experiences in public participation processes. In this way, participants' opinions were collected to be considered in the decision; however, the participants were not directly involved in the decision-making and consensus-building process in most case studies (88 %). Besides, according to the literature, there is still a long way to conduct public participation projects at the last level, to empower.

A high level of public participation like empowerment is sometimes necessary in heritage planning (Achig-Balarezo et al., 2017; Chipangura et al., 2017; Human, 2015; Oevermann et al., 2016) as it could lead to wider mobilization of daily users in protecting the heritage (Chinyele & Lwoga, 2018; Lewis, 2015; Li et al., 2020). However, a high level of public participation has barriers and consequences depending on the contextual and political situation of the projects and would not always lead to success. This is probably the reason behind the average and low level of public participation (levels two and three) in most case studies. In levels two and three, daily users can contribute to identifying heritage attributes and values as well as local social issues (Bruku, 2015). However, as they will not be involved directly in decision-making, there is a higher risk that daily users' interests get ignored by other stakeholders.

3.2.3. *Methods of public participation*

The literature is rich in exploring various participatory methods that can engage the public in the decision-making process to enable different levels of public participation (e.g., workshops, meetings, and interviews). These methods were detailed in most of the case studies (90 %) in data collection and data analysis steps (e.g., Aigwi et al., 2019; Mohammadi et al., 2018; Sujarwo & Caneva, 2016; Yu et al., 2019). Still, some studies used other terms including interaction step(e.g., Ghavami et al., 2017; Shen et al., 2012) and exchange of knowledge and actual experiences step (e.g., Rouwette et al., 2016; Shen et al., 2012). As 'data collection' and 'data analysis' were used most frequently, this study adopts these terms. However, we do emphasize that public participation steps are also about other aspects like data sharing and learning processes.

This research classified the methods into quantitative, qualitative, and mixed methods. While qualitative methods are often associated with the actors' interaction, quantitative methods use mathematical methods. Within qualitative methods, studies use digital, analog, or both digital and analog tools. All the studies with quantitative methods used both analog and digital tools (e.g., SPSS software) (see Fig. 3).

Almost all the case studies (90 %) detailed public participation methods concerning the data collection step. Qualitative methods have the highest percentage (74 %) including analog methods(70 %), namely participants and site observation, site visiting, interviews, workshops, meetings, and living laboratory; digital methods (23 %), namely digital interviews, workshops, meetings; and combination of analog and digital methods (7 %). The rest used mixed methods (23 %), and quantitative methods (3 %) namely interviews, surveys, and questionnaires.

The most common data collection methods are conventional, namely meetings, interviews, workshops, surveys, and mappings. However, digital and automated methods are growing in application, such as social media analysis (Chen et al., 2018), online collaborative platforms, Building Information Modeling (BIM) (Bertolinelli et al., 2018), and Cloud-based Virtual Reality (Zhang et al., 2017), and Software tools used for building the visions (Pérez-Soba et al., 2018).

Social media analysis is considered helpful for enabling access to a large amount of data at a low cost, capturing broader voices, collecting data without interventions, and accessing a private or semi-private perspective of users' daily life. Thus, social media can be an additional resource to conventional approaches in many study areas (Chen et al.,

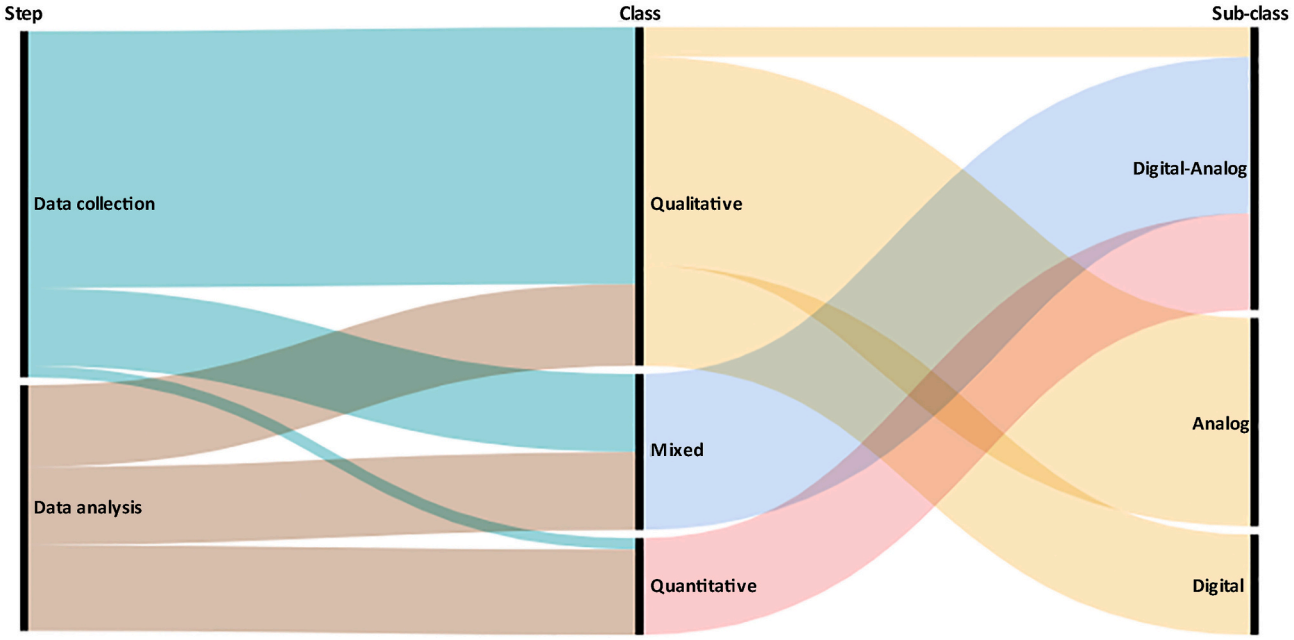

Fig. 3. Classification, interrelation, and the ratio of case studies dealing with specific research methods.

2018). Pioneering Information Communications Technology (ICT) systems and informative tools, such as Building Information Modeling (BIM), can be employed as participatory tools since they allow for managing a massive number of data, which improves stakeholder collaboration and increases information accessibility. BIM simulates various scenarios understandable even to non-experts. According to Bertolinelli et al. (2018), these tools provide transparency, accessibility, and data verifiability.

Cloud-based Virtual Reality (VR) platform, another type of ICT, was used by designers to propose and modify design alternatives in the virtual environment easily. Through 3D databases and modeling approaches, users can compare different design alternatives and better understand the design concepts which can contribute to a consensus (Zhang et al., 2017). Moreover, Pérez-Soba et al. (2018) applied the canvas to enable participants to create future visions. Canvas allows participants to use visual elements in images and text formats to fill a blank page. It is a user-friendly tool that needs no technical knowledge.

More than half of the literature (59 %) detailed public participation methods concerning data analysis. In contrast with the data collection step, quantitative methods were the most frequent methods in the data analysis step (35 %). Qualitative methods (33 %) are the next most frequent among which 50 % of the projects used digital methods, followed by analog methods (36 %), and the last combination of analog and digital methods (14 %). Lastly, mixed methods (32 %) are used in the rest of the case studies.

Overall, Delphi (e.g., Aigwi et al., 2019; Diaz et al., 2018; Jayasooriya et al., 2019) and Analytic Hierarchy Process (AHP) (e.g., Diaz et al., 2018; Nordström et al., 2009; Regan et al., 2006) were the most commonly used methods in the data analysis step. It could be because they are straight-forward methods to reach a consensus among various stakeholders as the actors' opinions and preferences are quantified and accordingly the result will be calculated.

Few cases explored Artificial Intelligence (AI), a new trend in digital heritage (e.g., Chen et al., 2018; Ghavami et al., 2017; Marcucci et al., 2017). Ghavami et al. (2017) applied Software Intelligent Agent (SIA) to elicit and model actors' preferences (e.g., land-use preferences encompassing residential areas, working areas, and educational service areas), and this training data is used for the learning process of the SIA. They aim for an automated negotiation phase that involves negotiation among autonomous software agents trying to reach a consensus on behalf of the relevant actors. The model's validity was tested by interviewing the actors to check if the outcome was close to their social preferences. The research shows that all the actors acknowledge the results of the SIA learning approach.

In participatory heritage planning, there is a preference for methods that enable active participation in decision-making with awareness-raising and capacity-building (Borona & Ndiema, 2014; Mackay & Johnston, 2010). These methods aim to collect people's values, raise awareness, and empower people (Li et al., 2020; Poulios, 2014; Woodley et al., 2013) to grow in their roles in public participation. While these methods were often discarded for being costly and time-consuming, instead, digital tools (e.g., social media, AI, and VR) can compensate for these shortcomings.

3.3. Consensus

3.3.1. Approach

Although most case studies were focused on levels two and three of public participation, they also addressed consensus-building in decision-making processes. Other terms referring to the same concept of reaching an agreement were found e.g. compromise, agree, agreement, convergence, and acceptance. While we understand that there is subtle difference between these terms, for the purpose of aggregating the results, we included all studies that pointed to the process that resulted in some form of agreement across the stakeholders in our analysis. Different forms of the term "agree" (e.g., agreement, disagreement) were repeated in 49 records (40 % of total literature). Only a few scholars defined consensus (e.g. Bailey et al., 2011; Beaumont & Nicholls, 2008; Raynor et al., 2017), but their definitions were contradictory. This echoes disagreement about 'consensus' in broader social theories too. While some scholars argue that reaching a consensus is possible in decision-making (Habermas, 1987; Healey, 1997), others alter that to reach a consensus, minority groups with conflictual perspectives will always be marginalized (Moote et al., 1997; Mouffe, 1994).

Habermas introduced "rational consensus" which is achievable by plural actors. Accordingly, Habermas developed the concept of an "ideal speech situation" where all the stakeholders are involved, on an egalitarian basis, in a rational and constraint-free communication in the public sphere for a depth of understanding and reconciliation of hitherto conflicting value claims (Habermas, 1987). There are many critical

responses to the Habermas theory claiming that this approach is possible through normalizing power relations and erasing the differences.

The consequent problem can be a broad refusal to participation - the 'silent majority' (Maier, 2001) or 'latent public' (Simon, 1982) - and consequently a lack of legitimacy in decisions made (Mascarenhas and Scarce, 2004). Forester (1999) highlights the importance of conflict and diversity as they lead to opportunities to learn about each other and create public values (mutual recognition and empowerment to act singly or together). Accordingly, the decoupling of consensus and meaningful public involvement was suggested by some scholars (e.g., Moote et al., 1997; Mouffe, 1994).

3.3.2. Conflicts

There are two major approaches to conflicts, while Habermas suggests that conflicts can be solved to reach a consensus (Habermas, 1987), Mouffe acknowledges conflicts' potentials for legitimate and inclusive decision-making (Mouffe, 1994). Most of the literature we reviewed, pursuit the first approach and consider conflicts as challenges to be solved (e.g., Kaya & Erol, 2016; Lin & Geertman, 2015; Raynor et al., 2017) discussing the issues, reasons, and conflict resolution methods (e.g., mediation, facilitation, negotiation, collaboration, and consensus-building). Still, some scholars have a different approach (e.g., Bailey et al., 2011; van Ewijk, 2011). Accordingly, Van Ewijk (2011) stated that conflict is as important and beneficial as consensus in participatory practices because conflicts contribute to the generation of new ideas and solutions. This way, a balance between consensus and conflict is considered essential. Consensus and conflict are intertwined and should not be addressed without each other. Besides, García et al. (2019) presented a methodology to consider the majorities and consensus, as well as, the minorities and controversial interests, to construct a holistic but integrated decision, in which all values are considered equally important.

The most addressed issue of conflict is diversity of interests (Lin & Geertman, 2015; Kurki & Katko, 2015; Oda, 2014; Tudor et al., 2014; Starkl et al., 2013; Kaliampakos et al., 2011; Dolff-Bonekämper, 2010; Collier & Scott, 2009). Conflict of interests was found to be caused by various backgrounds (Oda, 2014), e.g., between urban development and conservation experts (Collier & Scott, 2009; Halla, 2005; Starkl et al., 2013), and by the dominance of economic interests (Kaliampakos et al., 2011; Tan, Beckmann, van den Berg and Qu, 2009).

Kaya and Erol (2016) investigated case studies in Izmir, Turkey trying to find reasons and solutions for conflicts over locally unwanted land uses. They categorized the issues of conflict into two groups, substantive reason, and procedural reason. The first depends on outcomes, and the second depends on processes. The substantive reason can be associated with types, locations, and impacts of results. The procedural reason can be related to the decision-making approach (not fully open and transparent, top-down), technical procedures, and the role of actors in the process. Kaya and Erol (2016) highlighted the necessity of considering both substantive and procedural issues for effective participation, as solving the conflict by mainly considering substantive reasons would fail.

Given the importance of conflict in public participation, some research undertook a methodological process encompassing the identification, assessment, and resolution of conflicts to reach an agreement (e.g., Blokhuis et al., 2012; Garcia et al., 2018; García et al., 2019; Peltonen & Sairinen, 2010). Kurki and Katko (2015) focused on conflict identification and assessment. To identify conflicts, data were collected using semi-structured interviews with all the primary parties (politicians, officials, local inhabitants, landowners, and representatives of a local NGO) and secondary documents (official documents, newspaper articles, appeals in court, and court decisions). Then, the material was analyzed using different categories of conflict assessment (history, parties, interests, context, and process dynamics), which were developed by Peltonen and Kangasoja (2009). The conflict assessment product is a conflict map in the form of a written summary of the analyzed material, including a timeline of the project, main events, and conflict issues. A workshop was held not aimed to solve the conflicts but to allow all parties to speak and listen to each other in a positive and cooperative atmosphere.

Participation is highly advised to include various stakeholders in heritage planning and to reach an inclusive sustainable heritage. Consensus on heritage values and attributes is often considered the goal of participatory heritage planning (e.g., García et al., 2019; Zhou et al., 2018; Harmon & Viles, 2013; Van Assche & Duineveld, 2013; UNESCO, 2011). Nevertheless, reaching an agreement can also eliminate diversity and conflictual opinions, leading to a less inclusive decision. Given that, while methods were found to solve the conflicts and reach an agreement, the interests of minority groups might be undermined, even when they are key stakeholders. García et al. (2019) suggest a methodology to reach a consensus that considers the majorities, as well as, the minorities, including controversial opinions on heritage values. As such, heritage attributes can be valued differently by various individuals and interest groups, but still be respected.

3.4. Relation between the factors

This step investigates potential relations between the different factors and sub-factors discussed in the Results section by calculating independent-samples *t*-test and Spearman correlation. The analysed variables are the researche's publication year, method, level of public participation, and number of repetitions of main keyword.

3.4.1. Independent-samples t-test

An independent-sample t-test, a method to compare the means of two groups (Ross & Willson, 2017), was conducted using SPSS to compare means of the level of public participation and frequency of consensus for studies using different methods for data collection and data analysis. There is no significant difference in the frequency of consensus and the participation level in cases using different data collection methods. Nevertheless, there are three significant differences in the frequency of consensus and the participation level in cases using various data analysis methods (see Table 5).

As mentioned earlier in Section 2.2, the participation level is analyzed according to the IAP2 framework. Among different methods of public participation, only one significant difference in participation level was found. This is related to case studies that use a combination of all methods, quantitative, digital qualitative, and analog qualitative ($M = 2.55$, $SD = 0.81$), and those using only quantitative (M[1]$=2.16$, $SD =$

Table 5
The independent-samples *t*-test of groups with significant results.

Variables	Groups	Mean values	Standard deviation	t-Test	p-Value
Participation level	All the methods Quantitative methods	2.55 2.16	0.81 0.37	2.09	≤0.05
Frequency of consensus	Analog qualitative methods Digital qualitative methods	14.22 6.4	15.51 5.31	1.80	≤0.05
Frequency of consensus	All the methods Digital qualitative methods	12.91 6.4	11.04 5.31	1.99	≤0.05

[1] M is the mean difference, SD is the Std. Error Difference, *t*(degrees of freedom) = t-statistic, *p* = significance value.

0.37), t (40) = 2.09, p ≤ 0.05. Given that, studies using the combination of all methods have a higher participation level than those using only quantitative. Probably because quantitative studies mostly lack the interaction between participants and keep the project at level two (to consult). Interestingly, projects that combine quantitative methods with others get the advantage of quantitative methods to get the opinions of a larger sample of participants and provide a setting for interaction through analog or digital qualitative methods.

Among case studies using different methods of public participation, two significant differences were found in the frequency of consensus. There is a significant difference in the frequency of consensus of records using only the analog qualitative method ($M = 14.22$, $SD = 15.51$) and those using only the digital qualitative ($M = 6.4$, $SD = 5.31$); $t(22) = 1.80$, $p \leq 0.05$. There is a significant difference in the frequency of consensus using all the methods ($M = 12.91$, $SD = 11.04$) and those using only the digital qualitative ($M = 6.4$, $SD = 5.31$); $t(24) = 1.99$, $p \leq 0.05$ (Sedgwick, 2010).

The above *t*-test results show that the frequency of the term consensus in case studies using the combination of all methods or only the analog qualitative is more than double of case studies using digital qualitative methods. In other words, a variety of all methods or only analog qualitative methods tends to focus on consensus more than those only using digital qualitative methods. Digital qualitative methods tend to focus more on facilitating interaction and discussion rather than consensus-building. Hence, the combination of qualitative and quantitative methods results in both higher participation levels and higher focus on consensus-building.

3.4.2. Spearman correlation

Spearman correlation is often used to evaluate relationships involving ordinal variables (Artusi et al., 2002). Given that, the Spearman correlation was calculated using SPSS between quantified factors, such as the research's publication year, level of public participation, and the frequency of the terms. The terms were "value and attribute", "consensus", "paticipa*", "involv*", and "engag*". There are some significant and minor correlations between several factors (see Table 6).

There is a significant positive association between the year of the publication and the frequency of the term "engag*", ($r = 0.34$, $n = 112$, $p \leq 0.01$) indicating that the term "engag*" has been increasingly used in recent years. Frequency of "paticipa*" has significant correlations with two factors, namely frequency of "engag*" ($r = 0.34$,[2] $n = 112$, $p \leq 0.01$), and frequency of "involve*" ($r = 0.41$, $n = 112$, $p \leq 0.01$). It can be concluded that studies repeating the concept of participation more frequently tend to use more different terms for the concept. Moreover, there are significant positive associations between frequency of consensus and two factors, frequency of "involve*" ($r = 0.28$, $n = 112$, $p \leq 0.01$), and participation level ($r = 0.24$, $n = 112$, $p \leq 0.01$).

Table 6
The Spearman correlation of variables with significant associations.

Variables	Spearman's rank correlation coefficient (r)	Sample number (n)	
Frequency of engagement/ year of publication	0.34	112	≤0.01
Frequency of engagement/ frequency of participation	0.34	112	≤0.01
Frequency of involvement/ frequency of participation	0.41	112	≤0.01
Frequency of consensus/ frequency of involvement	0.28	112	≤0.01
Frequency of consensus/ public participation level	0.24	112	≤0.01
Frequency of consensus/year of publication	−0.17	112	≤0.01
Public participation level/ year of publication	−0.05	112	≤0.01

[2] r is the Spearman's rank correlation coefficient, n is the sample number, p is the difference between the two ranks of each observation.

Given the above analysis, the difference between the terms is that "participation" is the most common and frequent one, "engagement" has been more used recently, and "involvement" is the most correlated with consensus. The level of participation and consensus have a positive correlation, which means that the more a project seeks consensus by involving participants in decision-making, the higher the level of participation. Lastly, There is a significant negative association between the year of publication and the level of public participation ($r = -0.05$, $n = 112$, $p \leq 0.01$) as well as the frequency of the term consensus ($r = -0.17$, $n = 112$, $p \leq 0.01$).

Relation between the factors revealed that besides consensus-building, the interaction between the actors plays an important role in the public participation level. Accordingly, successful experiences focused on consensus-building while providing space for interaction between participants, and between participants and the executive team. Finally, the Spearman correlation analysis showed that despite the increasing studies on the topic in the last years, the revealed level of public participation and consensus-building have not been evolving as much.

4. Participatory practices in urban planning, and heritage planning: a theoretical framework

This research inductively identified and categorized the common factors and sub-factors that can be applied in public participatory planning studies: 1) public participation: actor, method, and level, 2) consensus: approach, conflict. The literature also conveys the relations between these sub-factors. Fig. 4 is a theoretical framework depicting the sub-factors and their relations extracted from the literature. The solid lines are relations mentioned in the literature and the dashed lines are those found through the statistical analysis (explained in the Results section). The framework shows the close relations between the sub-factors. In other words, participatory practices can be shaped by any of the factors, and changing each factor can affect the other and the whole process.

Regarding the literature, on actors, it is important to consider interest groups' selection methods and actors' roles. Among different actors, the roles of city planners and policymakers are accordingly to embrace conflicts among diverse actors and to balance power and manage conflicts. Besides, conflict and consensus have a close relation to the concept of diversity of actors and minority groups (broadly explained in Section 3.3 Consensus). Often, a consensus is positioned as the goal of the public participation process, which can be achieved in different degrees depending on the project's level of participation and methods. Accordingly, conflict is mostly considered a challenge of consensus-building which can be overcome through three steps: identification, assessment, and resolution. Still, limited studies explicitly considered conflict as relevant as consensus, highlighting the importance of conflictual opinions of minority groups. Accordingly, even a high level of public participation which leads to a consensus will not guarantee an inclusive decision in which the opinions of minority groups are reflected.

Statistics showed that case studies using a combination of quantitative and qualitative, and both analog and digital methods tend to focus on consensus more than the others and have a higher level of participation. Besides, a positive correlation was revealed between the level of participation and consensus, which means that the more a project seeks consensus by involving participants in decision-making, the higher the level of participation (broadly explained in Section 3.4. Relation between the factors).

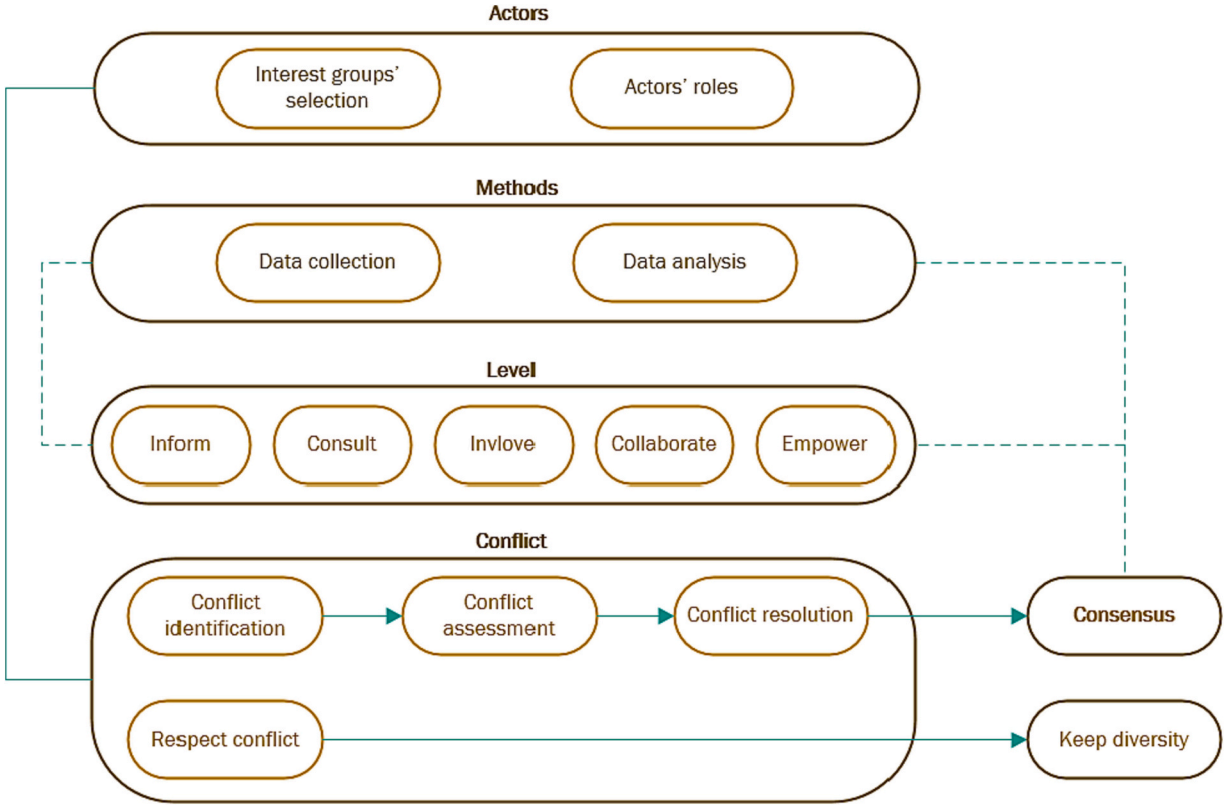

Fig. 4. Theoretical Framework of factors (and sub-factors) in participatory practices processes.
(Solid lines: relations directly mentioned; Dashed lines: relations derived through statistical analysis.)

Hence, the proposed framework aims at facilitating the identification of factors affecting the implementation of a public participation process and the potential assessment criteria of case studies. One of the limitations of this framework is that only one bibliographic database (Scopus) was used, which may have suppressed other relevant studies. For example, there were other factors not explored in this paper because they were only mentioned in a few papers (e.g., the contextual and political nature of public participation: Jaasma et al., 2017; Hansson & Ekenberg, 2016; Beaumont & Nicholls, 2008). Besides, this framework does not propose the issues that result in a successful project because not enough material was found in the assessment of the case studies' success. The contextual and political nature of public participation makes it difficult to assess a project's success based on fixed factors.

Further research is needed to review this framework with more bibliographical search engines. They can complement the presented framework with other factors, sub-factors, and new relations that were not found in the analyzed literature. Besides, it would be very helpful to further develop this study, exploring the relations between the framework and projects' success. Our hope is that the presented framework nourishes conversations about factors influencing consensus-building in public participation in both urban planning and heritage planning.

5. Discussion and conclusions

This research conducted a systematic literature review, to organize the existing literature on urban planning and heritage planning from a participatory planning perspective and develop a theoretical framework on the influencing factors behind consensus-building in a public partitipatory process. This research showed the literature is rich in the application of various approaches to public participation, including innovative technological methods that reduce costs, upscale the actors involved, and speed the process. Even though case studies were from different countries worldwide, this review revealed varied common factors and sub-factors among the case studies that influence consensus-building in a public participatory process. We explained these factors under two overall themes: 1) public participation: actors, methods, and levels, 2) consensus: approaches, and conflicts.

Further analysis showed the close relations between these influencing factors. Therefore, considering one factor at a time for the design or assessment of a participatory practice is not enough. On the contrary, the factors used in the design of a participatory practice affect each other, and they should be considered altogether, as proven in this paper. For example, the choice of the actors affects the process (method and level of public participation), and the desired outcome of the participation process (conflict resolution/keep diversity). Given that, specifying actors without considering the other factors may lead to a participatory process with different actors that initially agreed, or it may lead to an inequivalent process for all the actors. We therefore suggest that design of a participatory process should be more iterative to take into account all these factors. In addition to its theoretical contributions, the present study provides useful knowledge for practitioners. Our framework allows practitioners to consider and specify various factors and sub-factors that we identified before the beginning of each project.

Participatory heritage planning aims for safeguarding attributes and values which are important for various ranges of stakeholders, not only experts. This will not be possible without careful consideration of the factors and sub-factors and their relations (as revealed in our study) in urban planning and heritage planning. Especially, innovative digital methods of public participation used in urban planning can be applied to heritage planning. Digital methods can facilitate a high level of public participation process and consequently inclusive consensus-building which is the aim of participatory heritage planning. It is important to note that, while this will be a good achievement on its own right, this will not guarantee an inclusive decision in which minority groups' values are fully reflected in the decisions. Because through consensus-building some minority groups' opinions might be ignored.

The results imply that consensus-building through public participation is a complex multi-factor process. Therefore, the policies and practices intending to assure a successful process may consider such complexity upfront to approach them more holistically. Moreover, it was found that despite the increasing number of studies on public participation, level of public participation and focus on consensus-building were not increased over time. This confirms the need for further research, primarily on the following gaps identified: 1) studies on public participation in the higher level of public participation (namely collaboration and empowerment); 2) comparative analysis of different methods and tools, their limitations and opportunities; 3) contextual and political nature of public participation. Results confirm the lack of studies on the high level of public participation practices, to empower. Besides, while the method of public participation is the most elaborated factor in the literature, there is a lack of comparative analysis that would reveal which methods can best be applied to which (step of the) process.

Urban planning and management fields have a long tradition of participatory practices. Heritage planning can gain knowledge and skills from such fields, specifically related to moving from an expert-dominated perspective to a greater social diversity and inclusion, using a range of quantitative and qualitative methods and tools. This research undertook initial steps to elaborate a working theoretical framework to support this need by specifying the relevant factors and their relations. This framework has the potential to be applied to other case studies both to assess projects before and after implementation. Further research is needed to validate this framework widely in terms of factors and their relations with additional bibliographical search engines. Besides, future studies can adopt this framework to facilitate consensus-building in participatory heritage planning. This can contribute to understanding if and how consensus building in participatory heritage planning differs from urban planning and how to integrate them.

CRediT authorship contribution statement

Mahda Foroughi: Conceptualization, Methodology, Software, Writing- Original draft preparation, Visualization, Investigation, Formal analysis.

Bruno de Anderade: Writing- Reviewing and Editing,

Ana Pereira Roders: Writing- Reviewing and Editing,

Tong Wang: Writing- Reviewing and Editing.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

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