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**URBAN ISSUES**

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**#participation**  
**#urban development**  
**#public participation**  
**#U\_CODE**  
**#H2020**  
**#Co-Design**  
**#participation methods**

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## A method for the assessment of public participation in urban development

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### Abstract

A comprehensive piece of research on the tools and methods available for public participation in urban development was carried out as part of the U\_CODE Urban Collective Design Environment H2020-ICT Project, the results of which are presented in this paper. Approximately 70 methods and a range of participation goals were identified by investigating the publications of 20 cities and participation networks in Germany plus a number of online participation platforms. In the descriptions a general distinction was made between the level of involvement and the objective of participation. For most of the goals on informational or cooperation level, several (especially offline) tools were found to be available. For more ambitious objectives, e.g. massive co-design, no appropriate tools are currently market-ready, yet several research and development projects are targeting the development and testing of such means. The strong development of more complex methods and tools can be expected within the next few years. Often these instruments are designed in cooperation with urban authorities, however their broad application in German municipalities may take a couple of years yet.

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## Introduction

In recent years, there has been a noticeable increase in the desire to promote public participation in urban development. Planners have become increasingly aware of the value of the knowledge held by local citizens as a means to enhance the quality of urban development projects. Events such as the turmoil seen in Germany in relation to the Stuttgart21 Project (Böhm 2011: 615) indicate a need for efficient participation processes. On the other hand, several participation projects, such as Tempelhofer Feld in Berlin (Heuser & Bodenmeier 2016; Fugmann et al. 2018), have led to very positive results. A broad range of methods have been applied (Münster et al. 2017), and often different methods are combined in a customised process.

Overall more and more citizens want to participate in urban development and support the process with their ideas and everyday local knowledge. On the other hand, architects and urban planners often have problems with the use of this input due to its unfamiliar nature and structure. A structural shift is needed from all professional stakeholders – architects, authorities, moderators and economic stakeholders - in order to enable the better development of the cities of the future.

From this starting point, an in-depth literature review has been conducted within the H2020 U\_CODE Urban Collective Design Environment Project. The project's objective is to develop a co-design methodology and a participation platform for urban development, and to provide an overall procedural blueprint for all stakeholders including planners, citizens together, authorities and project initiators.

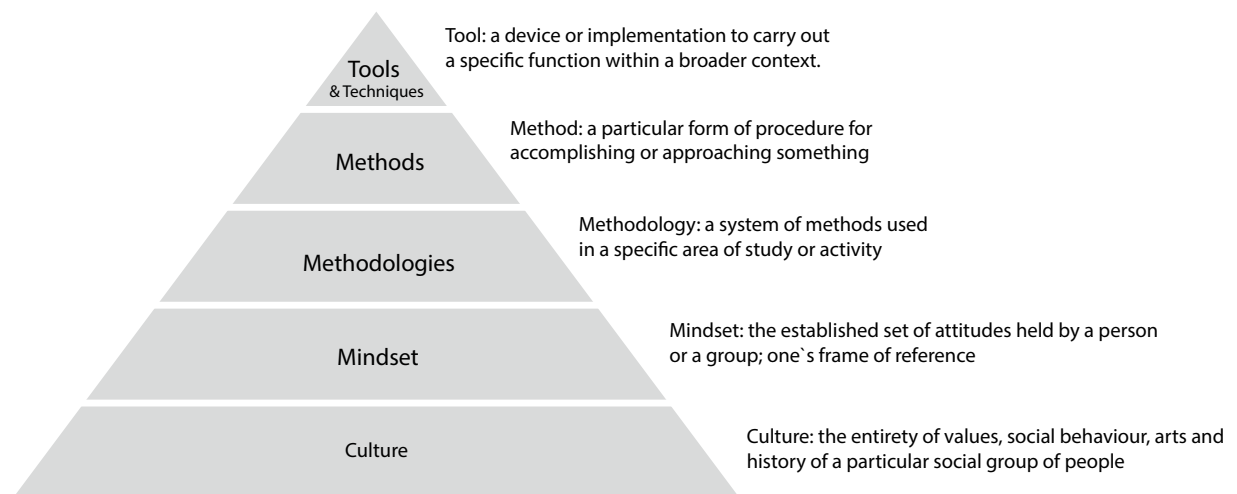
Our research focuses on the level in the methods pyramid (Fig. 1.) which has the highest impact on the creation of participation processes. Currently, there are only a few public participation methodologies available, while multiple existing tools are too fine-grained to establish a complete process. It should be stated that the majority of participation processes employ a combination of different methods, which were combined, phased or even restructured according to the requirements of the specific process or context.

To define the range of the research, a geographical limitation to Germanic countries has also been set. Therefore, it is necessary to gain a general understanding of the different administrative cultures involved. The study by P. Newman and A. Thornley (1996: 28) aims to 'contrast the legal and administrative families of Europe'. They assume the existence of four legal families:

- England, Wales and Ireland;
- France, Italy, Spain, Portugal, the Netherlands, Belgium and Luxemburg;
- Norway, Sweden, Denmark and Finland;
- Germany, Switzerland, Austria, and possibly Eastern Europe.

These legal and administrative families show specific characteristics regarding the government systems and local planning policies. In Germanic countries strict planning regulations ensure a strong regional level of planning. Regions tend to have their own laws and procedures. 'This results in considerable variation in the planning process between regions but within a strong national framework' (Jong, Lalenis & Mamadouh 2002: 43).

**FIGURE 1**  
Participation Tool Pyramid  
Source: re-drawn from Sanders 2009: 24



The last narrowing down of the field of research restricts the definition of urban development. It is seen as the processes involved in designing land use in cities, especially at the scale of street-blocks. The development of whole quarters was noted to be too complex and due to the approach used being based on the architectural viewpoint, participation processes for infrastructure projects were not felt to be of interest.

### Research goal

The goal of the research was to create an overview of the most common methods of participation. Within the U\_CODE project, a method database was created and cross-compared with methods applied in other projects such as Participedia (*PARTICIPEDIA website*) and Stormz (*Stormz website*) or the German databases Wegweiser Bürgergesellschaft (*Wegweiser Bürgergesellschaft website*) and Beteiligungskompass (*Beteiligungskompass website*). Focus was on the methods used in Germany, France, the Netherlands and the UK. The publications of about 20 German cities (Essen, Filderstadt, Gießen, Göppingen, Görlitz, Graz, Heidelberg, Heilbronn, Karlsruhe, Landau in der Pfalz, Mannheim, Marburg-Biedenkopf, Nürtingen, Pforzheim, Potsdam, Saarbrücken, Soest, Tübingen, Vorarlberg, Weingarten, Vienna, Wolfsburg) and networks (e.g. *Stiftung Mitarbeit website*) were reviewed in detail and digested. The goal of this preliminary research was to structure the existing and available methods, and to assess their appropriateness for different participation objectives. Building upon the information collected, a database was set up and will be launched this year that comprises an overview and search tool for 70 methods. Compared to existing databases it provides a filter function for a fast preselection of methods according to specific project requirements.

The second goal was to compare these methods with the purpose of the participation processes in the cities. Open topics should be tackled with developments in U\_CODE.

### Methodology

To gauge the sufficiency of the methods available, a definition of the goals of participation and a classification of methods is necessary and will be explained in the following paragraphs before a comparison is carried out in the following section.

### Goals of participation

There is no consistent definition of the goals of participation in the available literature. K. Selle (2014: 203) claims, that in practice there is seldom a clearly defined objective

for participation due to participation often being mandatory or politically motivated. On the other hand, there is the request for a clear idea of what should be achieved with a specific process (Selle 2014: 203).

Some of the study cities define objectives such as: ‘civic engagement significantly strengthens the quality, efficiency and legitimacy of decision-making processes within the community’ (own translation of Stadt Essen, Büro Stadtentwicklung 22.06.2010). Another example of such objectives on a macro level (Böhm 2011) is the protection of constitutional rights. Other often-stated objectives are the acquisition of information, transparency and higher acceptance. ‘The people, therefore, generally have a dual political interest - interest in the final results and interest in the process of participation’ (Bachrach 1970: 119).

More specific goals on a meso and micro level (Böhm 2011) include, among others: better quality of the structures that are developed (Stadt Essen, Büro Stadtentwicklung 22.06.2010), or user-orientation (Jakubowski & Herz 2005: 19). But a scientific overview is still lacking.

To support the development of our ‘Method Bank’, a set of potential goals for civic engagement has been distilled from the publications of the cities (Stelzle & Noennig 2017: 6):

- better cooperation;
- vision making;
- gathering feedback;
- information;
- project optimisation;
- conflict resolution.

It should be stated, that the focus of this shortlist was to highlight the difference in methods, and not to come up with a comprehensive definition of the objectives of public participation.

However, an aspect which is missing in all the definitions found is an indication of the need for cooperative design, or more succinctly: co-design. Despite all the other objectives, the creation of a complete project in cooperation with different stakeholders is covered by co-design. This approach has been adapted from the field of industrial design and the first applications in the field of urban planning commenced in recent years. Co-design aims to undertake a joint process of work that brings together urban designers and architects on the one hand, and citizens on the other, for the purpose of co-designing urban projects. Such processes allow direct integration of the knowledge of local citizens in relation to design proposals, even from a very early stage. Most methods supporting this approach, however, are still

under development and not used on a large scale (see below). The requirement for appropriate methods of co-design can be seen in the development of several other workshop methods such as *scenario technology* which try to visualise the ideas of citizens but often leave out the legal restrictions. This leads to frustration among the participants and should be avoided.

#### Classification of methods

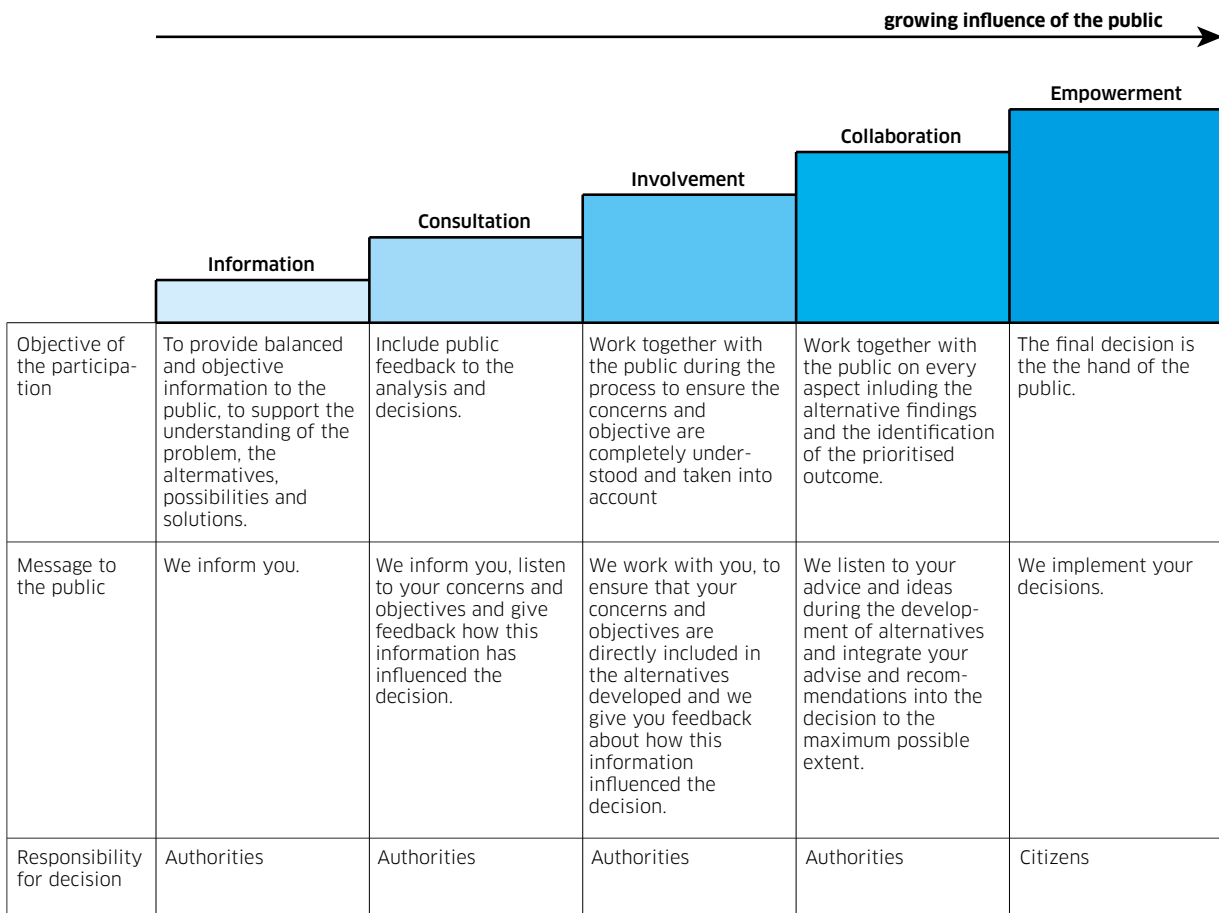
To order the collection of methods in an appropriate way, several classifications have been developed to prepare a database. In Table 1 an example of this so-called 'MethodBank' database is presented. It will be launched on the Project website [u\\_code.eu](http://u_code.eu) during 2018. Key functionalities are sorting and filtering in accordance with the demand and scope of the participation project. A simple overview of the existing methods allows a preselection of those methods that meet the requirements of the specific context. All methods are presented with a short description and links to more detailed information and details of those moderators available who may provide support for the method in question. Thus, the selection of inappropriate methods is avoided. The categories used in the 'MethodBank', given next to the level of participation and organisational sublevel (e.g. subdividing information methods into information meetings, online and offline information material, information points and the mapping of stakeholders/issues), are strengths

& weaknesses, length of process, number of participants, types of outcome, stage within an urban development process and characteristics. The characteristics include the very important item online-offline. As far as actual developments are concerned most of the methods are only 'offline'. The participation of several underrepresented citizen groups such as youth and young adults can be promoted by online methods and lead to a broader base for decision making.

The most common and important classification of participation methods was established by S.R. Arnstein (1969). A modified version is given in Figure 2, where an objective for each level is also identified. The five-level description was also adapted from the publications of the International Association of Public Participation (Soste et al. 2015). In practice a four to five level categorisation has proven to be the most useful one in covering the range of detail for the accuracy of fit of the different methods (for an overview see Karsten 2012). The steps range from information (one-way communication to the citizens) to consultation, involvement and collaboration (two-way communication on different levels between the citizen and the authorities) to empowerment. The last step, empowerment, is a more theoretical one due to no methods being available within the constraints of the research field (urban development methods in Germany). The graphic adds a description of responsibilities.

**TABLE 1**  
Participation methods in urban development  
Source: own study

Participation methods in urban development	
Level of participation	consultation
Sublevel	surveys, polls & voting
Name of the process	<i>Activating interview</i>
Description	a personal survey of citizens about their opinion on an approach and encouragement to actively advocate for their interests. Ahead of the survey, some interviews are undertaken to locate the area of enquiry and to capture the range of the topic. The actual interviews get announced beforehand and get performed in the apartment of the participant with a trained interviewer in a personal discussion. The conversations are close to the daily routine and are explorative, i. e. they do not only follow a questionnaire, but a conversation takes place, and both partners can influence this process. Appropriate for difficult to access groups.
Strength & Weaknesses	+ clear group of participants - expensive
References	Arbeitsgruppe Leitlinien Bürgerbeteiligung Bonn Feb. 2014; Arbter 2012
Examples	no specific examples
Length of the process	longer/ongoing
Number of Participants	up to 100
Types of Outcome	better cooperation, develop visions, gather feedback, information
Stage of the Process	design
Characteristics	inclusive, representative, offline



For the steps information, consultation and collaboration, the responsibility for the final decision lies with the authorities, while only at the empowerment level are the citizens in charge of decision-making.

Apart from this category, several other distinctions have been made in the ‘MethodBank’, also according to the type of outcome. An in depth description of the database, and all the different method parameters, can be found in the publication of B. Stelzle and J. R. Noennig (2017). Other databases also include categories like type of interaction, facilitation, method of recruitment (e.g. participedia.net), while most of them only feature a descriptive structure (e.g. Ley, Weitz & Ley 2012: introduction, description, assessment, literature). The set of categories chosen for the ‘MethodBank’ enables users of the database to get a quick overview of suitable methods in accordance with their requirements.

**Results / Output**

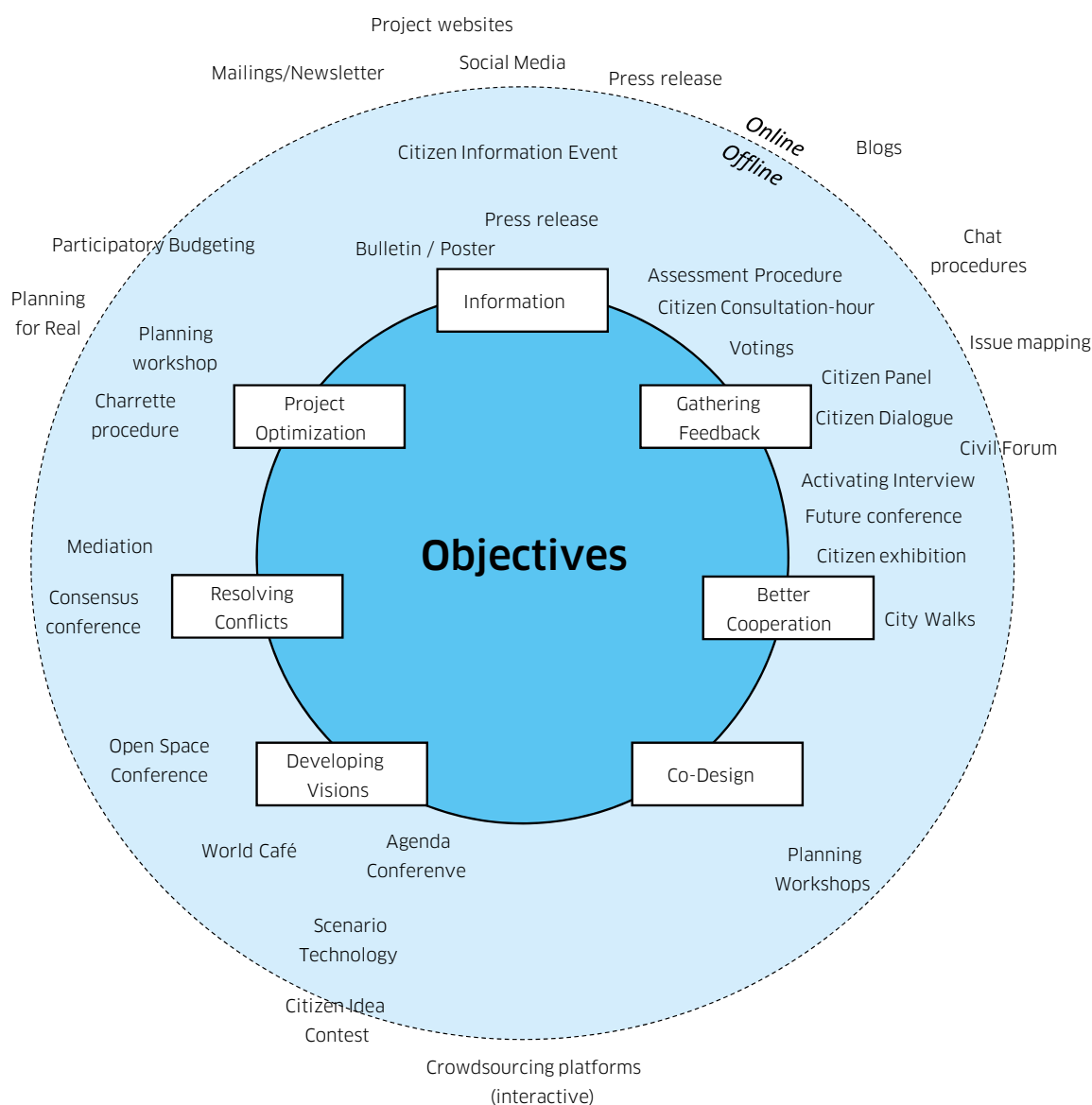
With the development of the ‘MethodBank’ it was possible to get an in-depth overview of the existing and formerly used methods

for participation in urban development in Germany. The most common methods are displayed in Figure 3, ordered by their main objective. For clarity’s sake, not all methods could be listed. Methods that can be used for more than one objective are located between these objectives or placed as the main item. The figure reveals that the majority are offline methods. For higher efficiency and broad recruitment of younger participants, the use of online methods should be expanded.

Many participation methods do not simply aim to meet one specific objective. For example, the method *Citizen Council* targets better cooperation and feedback gathering or *Citizen Consultation-hour* which is emblematic of several methods combining information, gathering feedback and even better cooperation. Here the focus is on the citizen information aspect, while the other objectives are mostly side effects.

Common sense methods are available for resolving conflicts: *Mediation*, and for larger groups a *Consensus Conference*. Here, offline methods are central, due to their higher communication effectiveness and a higher level

**FIGURE 2**  
Ladder of Citizen Participation  
Source: own graphic (based on Wouters, Hardie-Boys & Wilson 2011: 17)



**FIGURE 3**  
Participation  
methods and their  
objectives  
Source: own study

of trust building when compared to online methods, which do not exist for this objective. For project optimisation a *Planning Workshop* is as suitable as a *Charrette* procedure. Most methods are effective for informing citizens, in particular methods such as *Press Release* or *Citizen Information Events*, but also online methods working with *Social Media* and *Project Websites*. Almost all methods include a more or less broad range of information for the citizens involved. For higher levels of participation, well-informed citizens are essential, so these methods include an informational part. Gathering feedback and better cooperation are often covered by the same methods and support a better understanding among the different stakeholders. Example methods are *Citizen Exhibition* or a *Future Conference*. Methods for *Voting* are useful for gathering

feedback about a given topic or project. In this regard, various online methods are well established such as *Issue Mapping Apps* which help citizens to report problems e.g. garbage overflow or potholes. At the moment the most ambitious methods can be found for the objective of 'developing visions'. For this, well established methods are an *Open Space Conference* or *World Café*. Online methods, however, are rare for this objective although commonly-used digital tools exist to support such processes. Examples can be found in different projects such as *optopica.de* that covers a genuine e-participation approach.

A promising future development is expected in the field of co-design and co-creation. In the project *U\_CODE*, a co-design methodology for city planning is under development, and will be supplied with a set of associated



tools and methods. Scheduled for publication in 2019, two methods specifically address the co-design challenges: *VR Focus Group* and *Touch-Table Focus Group*. The VR Focus Group uses a Virtual Reality Headset to create an immersive city environment with drag-and-drop building environments, as can be seen in Figure 4.

Buildings can be placed in the virtual environment, modified and commented in order to express the ideas and visions of the participant. The *Touch-Table Focus Group*, in contrast, uses a multi-touch table with a digital representation of the built environment of the city. Participants can investigate the planned project from different viewpoints, modify, comment and rate it. Different proposals can be compared, and consent may be requested for given schemes.

On yet a more complex level, online tools or methods for massive co-design are still an unexplored field. Here, multi-player gaming approaches may provide an avenue for innovation. The general concept in this respect is to be delivered within the U\_CODE runtime.

**Outlook**

Suitable and sufficient online and offline methods are available for most of the defined objectives of public participation. However, no comprehensive research on these objectives has yet been carried out. A detailed and systematic overview of the origin and nature of these

objectives is a scientific desideratum and also a prerequisite for a detailed evaluation (Selle 2014: 205). First research on these matters has been started on single tools such as *Planning Cell* and *Citizen Report* (Dienel et al. 2014) or by case studies (Kubicek, Lipka & Koop 2011), but not yet on a broad basis. A clear definition of objectives would be useful without missing items and with a view to future development.

Certain innovative developments should be expected over the next few years, especially in the field of co-design. There are hardly any tools for collaborative design work between architects and citizens on a massive scale, but projects like U\_CODE, the activities around MIT’s CityScope, or the CIVAL of the Future Cities Laboratory at the ETH Zürich indicate a promising path for development. The developments in U\_CODE will be further developed and first trials are already in progress.

Another expected upcoming development is a more systematic approach to the combination of methods. At the moment the combination of methods depends on the experience of the moderator (e.g. the commercial TRIPLEX participation model) and without a proper scientific background.

The publications of additional cities and professional moderators should be examined in ‘MethodBank’ to broaden the base and references of the methods. Then one should proceed to transfer the mail to other countries belonging to the same legal family.

**FIGURE 4**  
Preview of the VR Focus Group Environment  
Source: own study

## REFERENCES

- Arbeitsgruppe Leitlinien Bürgerbeteiligung Bonn (2014) *Leitlinien Bürger-Beteiligung Bonn*, Supported by Stiftung Mitarbeit, Bonn. Available from: [http://www.bonn.de/rat\\_verwaltung\\_buergerdienste/buergermitwirkung/leitlinien\\_buergerbeteiligung/index.html](http://www.bonn.de/rat_verwaltung_buergerdienste/buergermitwirkung/leitlinien_buergerbeteiligung/index.html) [accessed: 02.01.2019] [in German].
- Arbter, K. (2012) *Handbuch Bürgerbeteiligung Für Land und Gemeinde*, ed. by Amt der Vorarlberger Landesregierung, Büro für Zukunftsfragen Bregenz, Wien. Available from: <https://www.vorarlberg.at/pdf/handbuchbuergerbeteiligun.pdf> [accessed: 08.05.2018] [in German].
- Arnstein, S. R. (1969) *A Ladder Of Citizen Participation*, Journal of the American Institute of Planners, 35(4), 216–224. DOI: 10.1080/01944366908977225.
- Bachrach, P. (1970) *Die Theorie demokratischer Elitenherrschaft: eine kritische Analyse*, Europäische Verlagsanstalt, Frankfurt am Main [in German].
- Böhm, M. (2011) *Bürgerbeteiligung nach Stuttgart 21: Änderungsbedarf und -perspektiven*, NuR, 33(9), 614–619. DOI: 10.1007/s10357-011-2130-y [in German].
- Dienel, H., Franzl, K., Fuhrmann, R., Lietzmann, H. & Vergne, A. (2014) *Die Qualität von Bürgerbeteiligungsverfahren. Evaluation und Sicherung von Standards am Beispiel von Planungszellen und Bürgergutachten* (Schriftenreihe Blickwechsel 11), Steiner, OEKOM, Stuttgart [in German].
- Fugmann, F., Ginski, S., Selle, K. & Thissen, F. (2018) *Multilaterale Kommunikation in Prozessen der Stadtentwicklung. Querauswertung von 50 Praxisbeispielen* (PT\_Materialien 40|1), Lehrstuhl für Planungstheorie und Stadtentwicklung, RWTH Aachen University, Aachen. Available from: [http://www.pt.rwth-aachen.de/files/dokumente/pt\\_materialien/pt\\_materialien\\_40-1\\_ebook.pdf](http://www.pt.rwth-aachen.de/files/dokumente/pt_materialien/pt_materialien_40-1_ebook.pdf) [accessed 04.05.2018] [in German].
- Heuser, T. & Bodenmeier, E. (2016) *Entwicklungs- und Pflegeplan Tempelhofer Feld*, Senatsverwaltung für Stadtentwicklung und Umwelt Abteilung I, Grün Berlin GmbH, Berlin. Available from: [https://tempelhofer-feld.berlin.de/documents/74/160513\\_THF\\_Broschu%C3%AAre\\_Web.pdf](https://tempelhofer-feld.berlin.de/documents/74/160513_THF_Broschu%C3%AAre_Web.pdf) [accessed 15.05.2018] [in German].
- Jakubowski, P. & Herz, S., eds. (2005) *Effizientere Stadtentwicklung durch Kooperation? Abschlussbericht zum ExWoSt-Forschungsfeld „3stadt2 - Neue Kooperationsformen in der Stadtentwicklung“* (Werkstatt: Praxis 36), Selbstverlag des Bundesamtes für Bauwesen und Raumordnung, Bonn.
- Jong, M., Lalenis, K. & Mamadouh, V. eds. (2002) *The Theory and Practice of Institutional Transplantation. Experiences with the Transfer of Policy Institutions* (The GeoJournal Library 74) Springer, Dordrecht. Available from: <http://dx.doi.org/10.1007/978-94-011-0001-4> [accessed: 08.03.2019].
- Karsten, A. (2012) *Participation Models, Citizens, Youth, Online*. Available from: <http://www.youthpolicy.org/library/documents/a-potpourri-of-participation-models/> [accessed: 19.09.2018].
- Kubicek, H., Lippa, B. & Koop, A. (2011) *Erfolgreich beteiligt? Nutzen und Erfolgsfaktoren internetgestützter Bürgerbeteiligung - Eine empirische Analyse von 12 Fallbeispielen*, Verlag Bertelsmann Stiftung, Güntersloh [in German].
- Ley, A., Weitz, L. & Ley, L. eds (2012) *Praxis Bürgerbeteiligung. Ein Methodenhandbuch* (Arbeitshilfen für Selbsthilfe- und Bürgerinitiativen 30), Stiftung Mitarbeit, Verlag Stiftung Mitarbeit, Bonn [in German].
- Münster, S., Georgi, C., Heijne, K., Klamert, K., Noennig, J., Pump, M. & Stelzle, B. (2017) *How to involve inhabitants in urban design planning by using digital tools? An overview on a state of the art, key challenges and promising approaches*, Procedia Computer Science, 112, 2391–2405. DOI: 10.1016/j.procs.2017.08.102.
- Newman, P. & Thornley, A. (1996) *Urban planning in Europe. International competition, national systems, and planning projects*, Routledge, London, New York.
- Sanders, L. (2009) *Exploring co-creation on a large scale - designing for new healthcare environments*, Proceedings from symposium 'Designing for, with, and from user experience', 13th May 2009.
- Selle, K. (2014) *Über Bürgerbeteiligung hinaus: Stadtentwicklung als Gemeinschaftsaufgabe? Analysen und Konzepte*, Edition Stadtentwicklung, Verlag Dorothea Rohn, Lemgo [in German].
- Soste, L., Wang, J., Robertson, D., Chaffe, R., Handley, S. & Wei, Y. (2015) *Engendering stakeholder ownership in scenario planning*, Technological Forecasting and Social Change, 91, 250–263. DOI: 10.1016/j.techfore.2014.03.002.
- Stadt Essen & Büro Stadtentwicklung (2010) *Grundsätze für die Bürgerbeteiligung der Stadt Essen*, StadtAgentur Essen, Essen. Available from: [https://www.essen.de/rathaus/aemter/ordner\\_2/brgerorientierung/grundsaeetze\\_der\\_buergerbeteiligung.de.html](https://www.essen.de/rathaus/aemter/ordner_2/brgerorientierung/grundsaeetze_der_buergerbeteiligung.de.html) [accessed 21.04.2016] [in German].
- Stelzle, B. & Noennig, J. (2017) *A Database for Participation Methods in Urban Development*, Procedia Computer Science, 112, 2416–2425. DOI: 10.1016/j.procs.2017.08.173.
- Wouters, M., Hardie-Boys, N. & Wilson, C. (2011) *Evaluating public input in national park management plan reviews. Facilitators and barriers to meaningful participation in statutory processes* (Science for conservation 308), Publishing Team Department of Conservation, Wellington, N.Z. Available from: <http://www.doc.govt.nz/Documents/science-and-technical/sfc308a.pdf> [accessed: 02.04.2016].

## Internet sources

- Beteiligungskompass website*: <http://www.beteiligungskompass.org> [accessed: 02.01.2019] [in German].
- PARTICIPEDIA website*: <https://participedia.net> [accessed: 02.01.2019].
- Stiftung Mitarbeit website*: <http://www.mitarbeit.de/> [accessed: 02.01.2019] [in German].
- Stormz website*: <https://stormz.me/> [accessed: 02.01.2019].
- Wegweiser Bürgergesellschaft website*: <https://www.buergergesellschaft.de> [accessed: 02.01.2019] [in German].