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Beyond face Validity: Assessment of a participatory value evaluation for an institutionalized transport conflict

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ABSTRACT

The importance of public participation in transport planning continues to increase. Participatory Value Evaluation (PVE) is a relatively new instrument to involve citizens in transport planning. In a PVE, citizens are put into the shoes of a policymaker and see which polices are considered, the impacts of the policies and the constraint that the policymaker faces. Subsequently, citizens are asked to advise the policymaker on which policy options should be chosen and why.

So far PVE has been successfully applied in contexts in which citizens and stakeholders broadly agreed on the pursued policy goals. It is, however, unclear whether PVE is equally valuable in contexts in which stakeholders have conflicting interests. This paper investigates whether deploying PVE in an institutionalized transport conflict results in similar benefits and costs as in contexts where stakeholders pursue the same goals. We studied a PVE application in which 2466 participants provided recommendations to the government about decision-making regarding Schiphol Airport, the Netherlands. Stakeholders were involved in many phases of and decisions on the PVE design process. The aim of this research was twofold. First, to establish whether the benefits of applying PVE in an institutionalized transport conflict outweigh the costs. Second, to develop an instrument to assess the face validity of PVE as experienced by participants.

We find that PVE can provide similar benefits in the context of an institutionalized conflict compared to cases in which such a conflict was absent. Citizens participated who normally do not participate and the PVE produced useful outcomes for decision-making. However, a notable difference is that the design phase of the PVE involved several feedback rounds which made it much more time-intensive than other cases. Hence, the benefit that PVE requires low time investment of civil servants that emerged in other studies was not applicable when applying PVE to an institutionalized transport conflict setting. Furthermore, stakeholders could not agree on various design choices of the PVE. To satisfy the diverging requests of stakeholders a very lengthy PVE was constructed. As a result, the satisfaction among participants about its face validity was relatively low.

1. Introduction

The importance of public participation in governmental decision-making continues to increase. The need to involve the public in decision-making becomes more enshrined in law in many democratic constitutional states such as the United Kingdom, United States, France and the Netherlands (Akerboom and Craig, 2022; Cascetta et al., 2012, p. 104). In the transport sector, the public also becomes more involved in planning and decision-making to better cater decisions to the needs of involved and affected citizens (Nabatchi, 2012). Especially because transport decisions are complex, impact all levels of society and require both top-down and bottom-up interactions. Combining insights from experts with results from public participation fosters finding a shared solution and can change stakeholders' minds about transport policies (Le Pira et al., 2016). More recently, the focus in practice has been on involving citizens at the local level, in neighborhoods and municipalities, and on addressing policy issues that directly affect citizens' personal lives such as health and urban planning (OECD, 2020).

Generally, the literature distinguishes three rationales for including citizens in public decision-making (Fiorino, 1990; Stirling, 2008). The normative rationale argues that involving the public is the 'right thing to do' in a democracy. Citizens should have a say in governmental

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decisions that affect their personal lives. The substantive rationale argues that including the public increases decision and policy quality. Citizens can introduce perspectives and solutions that might be overlooked by experts or people with vested interests in the status quo (Burke and Stephens, 2017; Beierle, 1999). The instrumental rationale argues that involving the public is motivated by other goals. Examples include increasing support, restoring trust, educating in skills and knowledge on the topic; and improving process and decision transparency (Callahan, 2007; Irvin and Stansbury, 2004).

Public participation also comes with various challenges. For example, citizens who participate are often not a good representation of the population as participation demands much from citizens' knowledge, capabilities and time. If participation is intensive such as for transport policies, there is a risk of overrepresentation of citizens who consider the issue as in their immediate interest, have much spare time, gain much by influencing decisions, have the required expertise or enjoy speaking in public (Hartmann, 1998; Coenen, 2009). Population groups that are less often associated with the aforementioned aspects are more likely to be underrepresented. For example females (Hendriks, 2008), lower-educated, younger (Jacquet, 2017) and ethnic-minority people (Barnes et al., 2003).

A member of the municipal council interviewed in the research of Mouter et al. (2021a,b,c,d) highlighted that participatory processes generally attract citizens that oppose a certain policy and that proponents and the 'silent middle group' feel less encouraged to participate, particularly when the antagonists are very vocal. This skewed ratio of participants in terms of socio-demographic backgrounds and vocalness is especially present in transport policy discussions (McAndrews and Marcus, 2015). Generally, transport decisions often lead to a small advantage for a large number of citizens and a big disadvantage for a small number of citizens. For example, an extension of a road or an airport benefits travellers but disadvantages residents who experience the nuisance (Bickerstaff et al., 2002). As a result, policy makers question whether the participants and their opinions are a good proxy for the general public (Barnes et al., 2003).

In the Netherlands, a new participatory method called Participatory Value Evaluation (PVE) was developed and deployed to circumvent these issues (Mouter et al., 2021a,b,c,d). In a PVE, participants are faced with the decision-making problem of policy makers in an online environment. Citizens are basically put into the shoes of a policy maker and see which policies are considered, the impacts of the options among which the policy maker can choose and the constraint(s) that the policy maker faces. Subsequently, citizens are asked to advice the policy maker on which policies should be chosen and to provide written motivations for their choices. These are analyzed to establish the preferences, values and concerns of (different segments of) the population. Participation takes about 20 min and citizens can participate where and whenever they want. Because of this low entry barrier, PVE promotes greater inclusion of citizens who might otherwise not have participated, teaches citizens about choices that the government has to make and by informs policy makers about citizens' preferences and knowledge on the topic (Mouter et al., 2021).

Various applications show that in a PVE all relevant segments of the population were represented to a substantial extent. For instance, 30,000 citizens participated in a PVE regarding the alleviation of lockdown measures (Mouter et al., 2021). In this PVE various subsegments of the population participated. Furthermore, Mouter et al. (2021a,b,c,d) show that PVE enables participation of people that normally do not participate, particularly younger citizens. Consequently, policy makers recognized that PVE holds the promise to ensure that the preferences of participants are a better reflection of the preferences of the general public than the outcomes of conventional (offline) participation methods such as a public hearing, citizen assembly, referendum or opinion poll. Furthermore, the majority of participants indicated that they learned about, had more confidence and more trust in the decision that the government has to make because they participated in the PVE (Mouter et al., 2021a,b,c,d; Mouter and Itten, 2022). Other established benefits in previous PVE case studies were the low time investment of civil servants, useful outcomes for decision-making and a safe anonymous environment for citizens to express their nuanced opinion without feeling intimidated by noisy individuals.

Despite these benefits, the PVE has also been criticized on the timing of stakeholder involvement and its validity. Some participants questioned the fact that they could only express their preferences concerning a set of policy options predetermined by experts (Mouter et al., 2021). Few et al. (2007) also express their caution as to pre-determined policy options. Following their line of reasoning, pre-determining options and goals might be required (to a certain extent) to design the PVE process and instrument in line with feasible solutions to the policy issue at hand. However, the policy options might not match local views and wishes. Some participants also shared this desire to have a (greater) say in the design of a PVE and the chosen policy options (van Beek et al., 2024). For example, a PVE participant said: "Please offer a wider range of options, pre-selecting them steers my choices too much". Another participant mentions that he: "Needs more space for my own perspectives, instead of spoon-feeding everything" (Mouter et al., 2021, p. 169).

To remedy this issue, two PVEs were conducted in which citizens were involved in the design process. In the PVE for the thermal energy transition of Utrecht a small group of 7 citizens was asked to give feedback on draft versions of the PVE (Mouter et al., 2021a,b,c,d). Their feedback was used to fine-tune the experiment. These citizens were all themselves active in the thermal energy transition and had a positive attitude towards the goals of the municipality, i.e. agreed with the necessity of the energy transition process. In another PVE regarding the energy transition of the municipality Súdwest-Fryslân citizens were asked through an open call to participate in the design process and 45 of them were selected. These citizens co-developed the policy options with researchers and transformed the results of the PVE into policy recommendations. These were unanimously adopted by the municipality and used for various policy decisions, including those on small windmills and a geothermal project. One citizen action group that previously opposed the energy plans and goals of the municipality rejoined the process after they were allowed to have a say in the PVE design (Mouter and Itten, 2022). A civil servant mentioned that the process of co-development gave citizens a feeling of ownership over the participatory process and in a subsequent interview in the journal Binnenlands Bestuur, the Alderman described the process as 'restoring the trust between people and politics'.

In both cases, citizens who participated were new to the process and these were the first attempts of municipalities to involve them in a deliberate way in decision-making. Although these citizens had different opinions towards the desirability of the policy options, they all in a broad sense agreed upon the necessity of the energy transition in their municipality. Involving citizens in the design of a PVE while there exists opposition or tension between their main goals and those of the municipality has not been studied yet. For instance, it is questionable whether in such a context citizens, other stakeholders and researchers can still co-design a PVE in a way that they arrive at an agreed-upon and shared problem definition, goal and policy options. Especially if a conflict among citizens and between citizens and stakeholders persists already for a longer period of time. Agreeing on shared problems and solutions can be even more challenging (De Jong and Geerlings, 2003).

It is unclear whether the benefits of conducting a PVE in such a context will be similar to the benefits that materialize in applying a PVE in contexts where a conflict was absent. Possibly, the benefits will not materialize when conflicted citizens and stakeholders aim to frustrate the process. And if the benefits materialize, it is unclear whether these benefits still outweigh the costs. Therefore, the main research question of this study is as follows: "What are the costs and benefits of applying Participatory Value Evaluation to an institutionalized transport conflict?".

As the advantages and disadvantages of involving citizens and

stakeholders in the design of a PVE for an institutionalized conflict are unclear, we searched for a case study with these characteristics to ameliorate this gap in the scientific literature. The Dutch Ministry of Infrastructure and Water Management gave us the opportunity to conduct a PVE for Schiphol Airport and involve citizens and stakeholders who were part of the institutionalized conflict. Most of these citizens have been involved for a long period of time, which enable them to compare the benefits and costs of a situation with and without a PVE.

A very important precondition for a participatory instrument to be viewed as legitimate by all parties is its perceived validity. Perceived or face validity implies that stakeholders view all information and the way it is presented in a participatory instrument as genuine, satisfactorily and acceptable (Holden, 2010). During the design phase of the PVE for the new Societal Council of Schiphol Airport we realized that in this case study the conflict was escalated to such an extent that there was a high risk that the face validity of the participatory process would be contested. Because discussions among stakeholders kept reverting to how the validity of the PVE design was perceived by everyone, we acknowledged that face validity was an imperative aspect to be addressed and measured.

In such a conflict situation, stakeholders are inclined to influence the design process and instrument, hoping that the outcomes will be in line with their interests. Power then works through influencing this conduct; and it works by influencing how parties act upon one another. As one actor acts, they shape the possible future actions of another actor (Huijs, 2011; Flyvbjerg, 1998). In the Schiphol case study, this implies that stakeholders involved in the design process not only shape actions of each other but also shape actions of future PVE participants through their decisions on the instrument design. Moreover, if the outcomes are not in favor of stakeholders' interests, they will be more inclined to contest the validity of the participatory process and instrument for strategic reasons.

Stakeholders' judgement of face validity is also important for the trustworthiness of the relatively novel PVE method and its results in a context of social complexity and conflict. If involved stakeholders become caught up in trying to influence the design process and validity of the PVE, discussions can divert from relevance and reason. This potentially results in suboptimal decisions on how to present the policy problem and solution(s) in the most valid way as perceived by all parties. The perceptions of stakeholders and citizens on face validity can function as empirical evidence to (re-)focus discussions on the issues at stake and make decisions based on substantive arguments. In this way, the final PVE design reflects what is generally viewed as most face valid.

As no instrument was yet available dedicated to assess the face validity of the PVE method, we developed one during the research process. Hence, a secondary goal of our research was to develop an instrument to assess the face validity of the PVE. The contribution of this research is threefold. First, we establish the costs and benefits of deploying PVE in a context of an institutionalized conflict. Second, this is the third application of the PVE method in a transport context (Mouter et al., 2021; Bahamonde-Birke et al., 2024) but the first to explore this in the air traffic domain. Third, we interview stakeholders who were involved in the design process and question participants of the PVE through our newly developed instrument on their evaluation of PVEs face validity.

The remainder of this paper is organized as follows: in section 2 we present the case study. Section 3 outlines the methodology that we used to answer the research question, including a description of how we developed the PVE for this particular case study. Section 4 presents the results of our study, section 5 the conclusion and section 6 the discussion.

2. Case study

When we started the design phase of the PVE for the new Societal Council of Schiphol Airport various stakeholders such as the airport, various residents' organisations and environmental interest groups were in conflict about the composition, the tasks and the mandate of this entity. The Societal Council was proposed in a report (van Geel, 2020) as a follow-up entity to two previous entities (the Alderstafel and the Schiphol Environmental Council.

The Alderstable was installed in 2003 to discuss and investigate the flight routes, pollution and safety of Schiphol Airport together with the aviation sector, regional governments and local residents. The goal of the Table was to balance the expansion of Schiphol Airport with the quality of the living environment for all stakeholders. While some agreements on the use of airstrips and nuisance mitigation measures were reached, the issues to solve became increasingly complex and contradictions between stakeholders' viewpoints more prominent (KLM Royal Dutch Airlines, 2013). As soon as any item regarding the Airport needed to be discussed, the institutionalized citizens became opposed to each other, aviation and governmental parties. This opposition stems from the ongoing dispute among local residents about which regions surrounding the Airport should be the flight routes.

To reorganize and manage this institutional conflict situation, the Alderstable was replaced with the Schiphol Environmental Council (ORS). The ORS also included members from the aviation sector, national and regional governments, and residents' representatives and organisations. It attempted to shift its focus from private to public interests of the Airport. However, the discussions among stakeholders resulted in the same issues. Various stakeholders did not support further expansion of the Airport, which caused them to be against most of the discussions and solutions in advance. As a result, the collaboration between these parties had become infeasible and reaching agreements near impossible. Even on other topics regarding the Airport besides flight routes (Huijs, 2011, pp. 2–4).

The Ministry of Infrastructure and Water Management asked a former undersecretary van Geel (2020) to give advice on the functioning of the ORS. He concluded that communicating and decision-making based on stakeholder discussions was no longer effective and action must be taken. Due to the narrow focus on Schiphol Airport's growth opportunities and absence of mutual trust between the ORS members, stakeholders had a difficult time reaching agreements, focussing discussions on the issues at stake instead of on the deeply rooted conflict and implementing concrete policy measures. A common goal and willingness to cooperate and compromise among stakeholders was missing. A stalemate situation was reached.

Therefore, van Geel (2020) proposed to replace the ORS with two new entities: the Schiphol Social Council to intensify public participation and the Environmental House to improve information provision for the public. He argued that a basic degree and quality of participation and information are cornerstones of the governance and decision-making model that should break the stalemate situation. However, the report of van Geel (2020) lacked clear guidance on which goals, functions and mandate to choose or prioritize for the new entities. Thus, an independent administrator was commissioned to make a concrete proposal after consultation with the institutionalized stakeholders. This administrator decided that a PVE should be conducted to also involve the broader public in the prioritization, while the initial idea of the Ministry was to not conduct any participatory process. As the entities could not execute all the tasks proposed by van Geel (2020), considering the available resources. The PVE was meant to gather preferences of all stakeholders and citizens on which tasks to prioritize and why.

The decision-making on the goals and functions of the two entities may sound relatively non-controversial compared to concrete decision-making on Airport expansion and flights. However, the topic was very controversial as the mandate of the two entities would determine the extent to which citizens (and other stakeholders) could influence the aforementioned decisions. Other reasons for conducting the PVE were the absence of younger citizens and presence of a small vocal group that claimed to speak for all stakeholders. It was impossible for the Ministry to verify whether the latter was true. Less vocal stakeholders felt unjustly represented by the statements of the small vocal group. The

Ministry hoped that the low entry barrier of and time investment in a PVE would attract younger residents and improve representativity. It was also an opportunity for the so-called 'silent middle group' to express their opinions without interference of the vocal stakeholders.

While the vocal stakeholders were trying to discuss which conditions they accepted for the expansion of the Airport, the administrator felt that the silent stakeholders were neglected in terms of their participation and information needs. By withdrawing some public parties from the new entities, administrators hoped that discussions were initiated again, and the focus would shift to the real underlying problems and concerns. After the PVE was conducted, stakeholders could again provide input on the design of the entities. However, stakeholders did not write or deliver any text for the PVE. We were responsible for the initial, improved and final text.

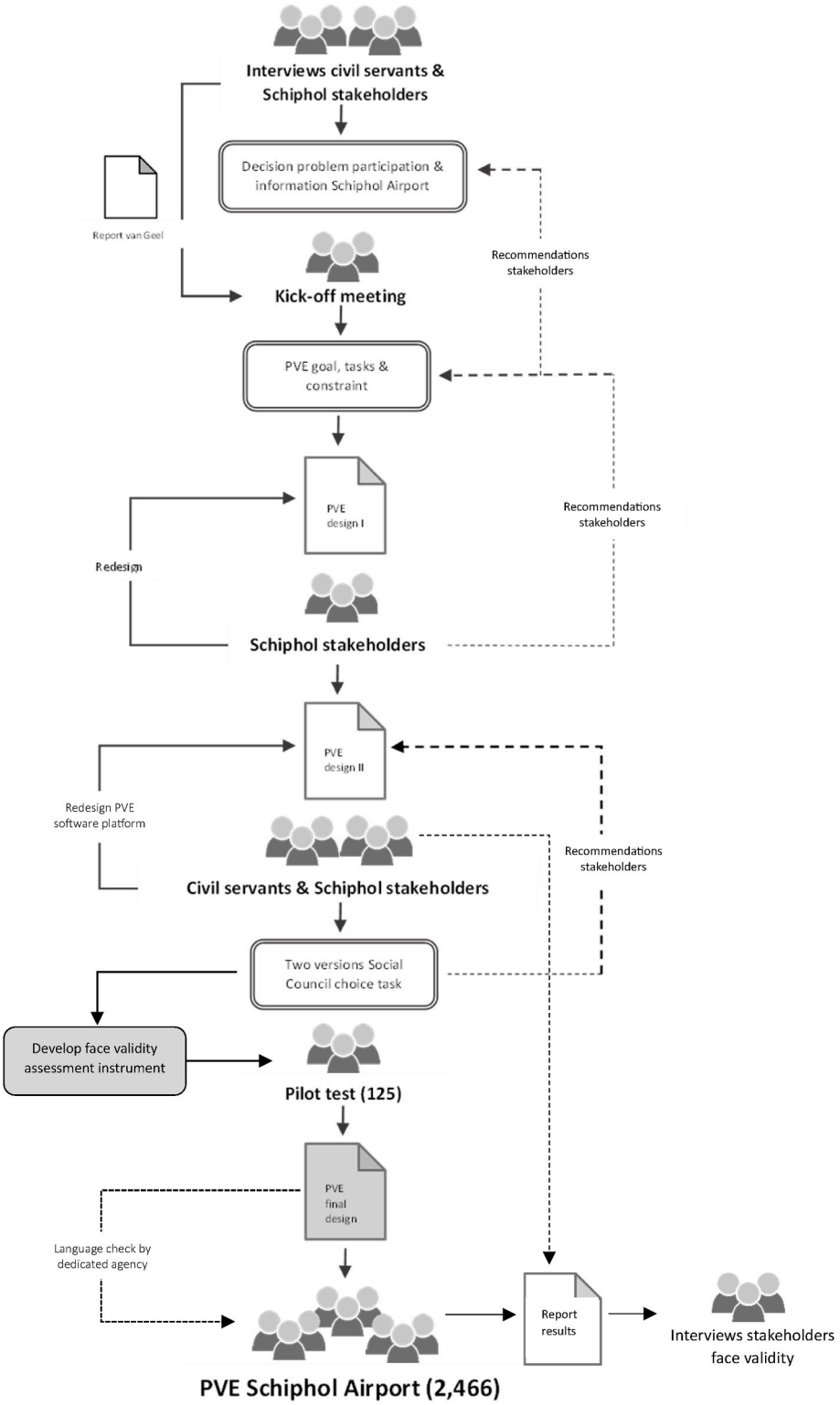

Fig. 1. Design process of the Participatory Value Evaluation with stakeholders.

3. Methodology

Fig. 1 shows an overview of the design process of the PVE together with the stakeholders. The process involves five key steps: formulating the decision-problem, drafting the initial PVE design, gathering feedback and improving the design, finalizing the design and the final PVE roll-out.

3.1. Design process of the participatory value evaluation with stakeholders

The first stage started with interviews with civil servants of the Ministry of Infrastructure and Water Management, public affairs managers of the employers' organisation VNO-NCW and the Schiphol Group; the director of the Environmental Federation Noord-Holland, account managers and

strategy experts from Air Traffic Control, the strategic advisor Airport Affairs of the municipality Haarlemmermeer, a process manager of the municipality Ouder-Amstel and five representatives of the local residents. In these interviews stakeholders were asked about their thoughts on the design of the two new entities. The key question that should be asked to participants in the PVE.

Based on these interviews, we established that this decision problem concerned the selection and prioritization of the tasks that both the Social Council and the Environmental House should perform. In the second stage, a kick-off meeting was held to discuss stakeholders' participation and information preferences. Based on these and the work of van Geel (2020), we translated the decision problem into several tasks for each entity that participants could choose from. The Social Council functions were centred around advisory and dialogue roles, doing independent research, social signalling and organising participation. The Environmental House tasks were providing informational websites, physical information centres and meeting places, and complaint committees. The initial design of the PVE was approved by the stakeholders.

In the third stage, their feedback on the initial design was used to improve the specification of the tasks. Moreover, we learned from the interviews and meetings that there were insufficient resources to execute all tasks for the Social Council. Therefore, a joint decision was made to make the limited number of public resources the constraint that participants in the PVE would face. This forces them to prioritize, since selecting all tasks would exceed the available resources.

A revised version of the PVE design was sent to the stakeholders and after several rounds of feedback, it was integrated into the online platform We valuate to show them what the final design would look like. Again, stakeholders were allowed to provide feedback. At this fourth stage, an irreconcilable point of disagreement emerged among citizens' representatives on how the validity of the PVE design was perceived. Specifically, concerning the way the Social Council choice task was structured and the way the constraint was presented. The impacts of each option were presented as three abstract levels (low, moderate, high) rather than monetary estimates. As no specific information on the cost of each option was available. Participants could then drag a slider from the left to the right to indicate their degree of preferability with each option. They saw the impacts of their choices on the public resources (see Fig. 2).

However, stakeholders could not agree on the desired amount of detail. Some of them thought it was best if the choice situation was as realistic as possible. Others thought including the effort constraint was morally undesirable, especially some residents. To accommodate these remarks, we created a second choice task design. For the Social Council, participants could allocate 20 effort points among all policy options For the Environmental House, a choice task in which participants were asked to divide 60 effort points was created and agreed upon. Participants could express more nuance and evenly distribute the points if they wished to assign effort to all tasks (see Fig. 3). The slider design prioritized realism while the point allocation design prioritized allowing residents to express their desires without feeling constrained. Each version would be conducted by half of the participants.

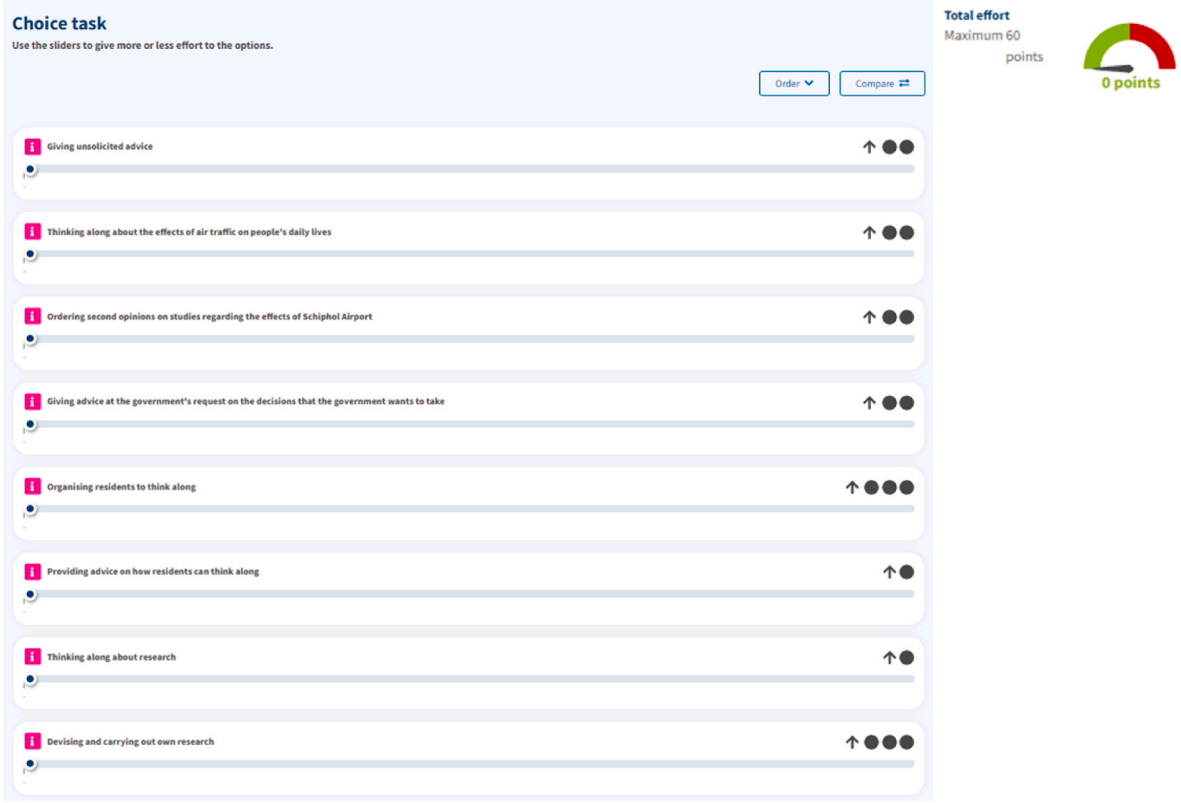

Fig. 2. Slider choice task screen Schiphol Social Council.

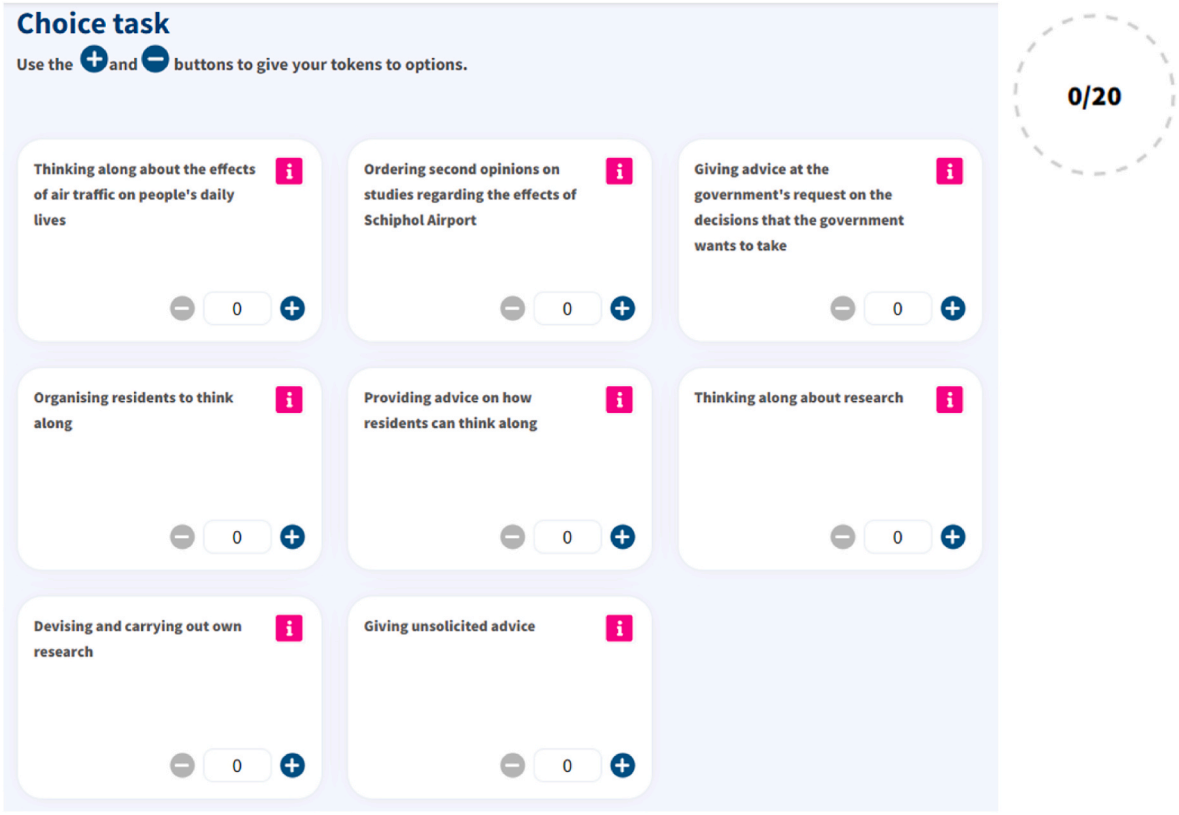

Fig. 3. Point allocation choice task Schiphol Social Council.

A difficult decision in this part of the design process concerned the trade-off between satisfying all requests of the stakeholders (which would significantly increase the difficulty and length of the consultation) and keeping the PVE feasible for participants. In a meeting with civil servants of the Ministry of Transport we decided to make concessions with regard to the feasibility for participants and give more weight to securing the approval of stakeholders. We determined the most important information need for each stakeholder (group) by asking them to prioritize. We validated these needs with the administrator and Ministry; and incorporated this into the PVE design. We did not try to balance the relative importance of each interest but tried to satisfy all stakeholders. Due to the controversy of the topic and history of conflict between the vocal stakeholders, we deemed that this was the best approach.

Next, a language check was done by a dedicated company. This agency ensured the language level was at B1 and made recommendations to correct framed wording. Each version was tested in a pilot with 125 respondents. As no issues emerged, the final design version was sent for approval to stakeholders. Some final but minor amendments were made based on their feedback.

3.2. *Design process of the face validity assessment instrument*

We aim to assess the face validity of the PVE as perceived by both institutionalized stakeholders and PVE participants. With regard to the former, we: 1) asked stakeholders to evaluate the report about the results of the PVE, 2) presented the results to stakeholders and asked for their feedback; and 3) interviewed several stakeholders on how to assess the face validity of the PVE. These interviews were conducted in a semi-structured manner, according to an interview protocol. In the interviews we also gave the interviewees the opportunity to divert from the predefined themes in sharing their opinion and experiences. We informed the stakeholders on the purpose of the interview, their rights and informed consent, data security, audio recording and follow-up procedures. We transcribed the recordings and coded these based on the list of face validity determinants to identify them.

As previously stated, we developed a new instrument to assess the face validity of PVE as perceived by respondents. We followed the steps in the framework of Nevo (1985) to determine 1) who will assess face validity, 2) what will they assess and; 3) which measurement approach will be used? First, for this instrument, participants will evaluate face validity. This facilitates understanding the relation between their assessment needs and the way the PVE is designed. Second, we decided that the evaluation should also contain specific questions on the Social Council choice task. This caused most commotion among the institutionalized stakeholders during the PVE design process. We wanted to know whether prioritizing stakeholders' face validity requests would affect participants' perception on and experience with it. Finally, we followed Nevo's (1985) recommendation to use a questionnaire approach if face validity is studied for the first time.

The literature distinguishes several determinants of the construct face validity that are used to concretize and operationalize it. We performed a review on 25 related studies that either discussed or conceptualized face validity to identify these determinants. We translated them into questionnaire

statements based on their definition in the literature. We added Likert scales with five answer categories, varying from strongly agree to strongly disagree, to these statements such that respondents could indicate their degree of agreement with each of them. Because fulfilling stakeholders' design requests has already increased the length of the PVE considerably, the Ministry of Transport decided that we could only question five face validity determinants.

The following face validity determinants were identified in the literature review: feasibility, clarity, relevance, transparency, efficacy, completeness, legibility, unambiguity, aesthetics, sensitivity and familiarity (Royal, 2016; Broder et al., 2007; Moores et al., 2012; Lidwell

et al., 2010). To select five determinants and formulate the statements we interviewed five experts on PVE and determining the validity of experiments. The interviews were conducted in a structured manner, according to an interview protocol.

We informed the experts on the purpose of the interview, their rights and informed consent, data security, audio recording and follow-up procedures. We transcribed the recordings and coded these based on the list of face validity determinants to identify them. The interviews were structured as follows. First, we asked the experts whether they thought the list of determinants drafted from the literature was complete. Two of them stated that 'acceptability' and 'legitimacy' were missing. Second, we asked the experts to choose five determinants they deemed most important and to formulate corresponding statements to present in the PVE. All interviewees noted that each determinant concerned a potentially important point to question, as the assessment needs and want of participants can differ.

After careful consideration clarity, relevance, completeness, legibility and unambiguity were chosen as most crucial by the experts. We combined this conclusion with guidance from our literature study on which determinants were most often mentioned. Although used in some empirical studies, most studies were theoretical and argued why a determinant could be important. Suggestions on importance from the experts and the literature were similar. Finally, we used experts' suggestions to improve the formulation of the statements (see Table 1). The questions on clarity and unambiguity were tailored to the Social Council choice task, while the remaining questions referred to participants' experience with all parts of the PVE. Respondents rated these general statements at the end of the PVE.

Fig. 4 shows the order of the various components within the PVE design. After participants read the introduction and gave their informed consent in part 1, they received questions on how they are and wish to be involved with Schiphol Airport. In part 2, they either received the slider or point allocation choice task for the Social Council. After they motivated their choices, they received the face validity statements on clarity and unambiguity. In part 3, participants completed the Environmental House choice task. They could again motivate their choices. The order in which all tasks were presented was randomized for each respondent. The PVE ended with the general face validity statements and some socio-demographic questions.

4. Results

We limited ourselves to presenting the results that were shared in a presentation with policy makers and other stakeholders who aimed to provide input for the decision-making process. Detailed results can be found in the Dutch language report (Mouter et al., 2022).

4.1. Results of the participatory value evaluation

The data was collected between April 22nd and May 15th, 2022, via a data panel company. We recruited 2572 panel respondents from Noord-Holland, Zuid-Holland, Utrecht and Flevoland. These provinces were chosen because the administrator and stakeholders concluded that preferences from residents surrounding the Airport were most important for establishing the new entities. This sample aimed to be representative of the Dutch adult population based on age, gender and educational level (see Table 2). Participants who were not part of this sample were also invited to participate in the PVE (Omgevingsraad Schiphol, 2015). 224 respondents participated in this open sample. The panel participants represent all population groups. The open sample allows citizens whom views have been marginalized to express their preferences.

Table 1
Face validity determinants and statements in the PVE.

Determinant	Statement
Clarity	"I received sufficient information to make a choice about the possible tasks of the Schiphol Social Council."
Unambiguity	"I found it clear what was meant by each of the possible tasks of the Schiphol Social Council."
Relevance	"I think this research is a good way to give my opinion about the Schiphol Social Council and the Environmental House."
Readability	"I found the questions asked to me in this study understandable."
Completeness	"I felt I could give all my opinions on how citizens should be involved in decision-making about Schiphol and how information should be provided."

The mean completion time of the PVE was 28 min (median: 19 min). Those who completed it within 8 min and gave the same answers to every multiple-choice question or gave 'meaningless' answers to open questions were excluded. The probability that these responses are invalid is quite high, considering the speed of completion and degree of seriousness. As a result, the final panel sample included 2247 and the final open sample included 219 participants. We also collected information about participants' socio-demographic background and relation to Schiphol Airport.

In part 1 of the PVE (see Fig. 4), participants gave their informed consent and read the instructions. In part 2 of the PVE we asked them whether they had ever let the government know their opinion about Schiphol Airport. For example, through a residents' organisation, by participating in a survey, by signing a petition or by submitting a complaint. Participants could also indicate that they have never expressed their opinions about the Airport to the government or to Schiphol itself. It is clear that residents belonging to the 'silent middle' participated in the PVE. As 76 % of the panel participants said they had never voiced their opinion before. In the open sample this was 47 %.

In part 2, respondents also completed either the slider or the points allocation version of the Social Council and motivated their advice. First, four tasks of this Council are prioritized by respondents based on the maximum effort they assigned to each task: 1) thinking along about the effects of air traffic on people's daily lives; 2) organising that residents can think along; 3) giving advice at the government's request on the decisions that it wants to take; and 4) ordering second opinions on studies regarding the effects of Schiphol Airport (see Table 3). A common characteristic of these highly prioritized tasks is that they all are 'reactive'. Members of the Social Council give an opinion on governmental decisions or order a second opinion on a research project. Contrastingly, proactive tasks such as devising investigations themselves are not prioritized.

We analyzed the qualitative responses of all open and 1000 panel participants. Due to limited resources, we could not analyze the responses of all panel participants. We also reached a point of saturation and did not encounter any new arguments after analyzing 1000 responses. Three analysts analyzed which arguments they mentioned to substantiate their advice. They clustered these arguments based on the three participation rationales: normative, substantive and instrumental. Table 4 gives an overview of the results. It shows how often participants indicated that they conditionally supported the particular task and how many participants spontaneously mention counterarguments. If a participant mentioned more than one category, the argument was added to both categories.

For example, one participant mentions a normative reason in support of the 'second opinion' task and 62 participants give instrumental reasons. For the top three tasks that were prioritized for the Social Council, participants mainly cited normative reasons with respect to citizen participation. According to them, these tasks are inherently important in well-functioning democracy. Being able to order second opinions is substantiated by many participants with instrumental reasons. People see this

In part 3 of the PVE, respondents completed the choice task of the Environmental House. Based on the maximum effort assigned to each task, it can be derived that three tasks were prioritized: 1) making knowledge clear and understandable; 2) answering questions from residents; and 3) there will be an independent committee where residents

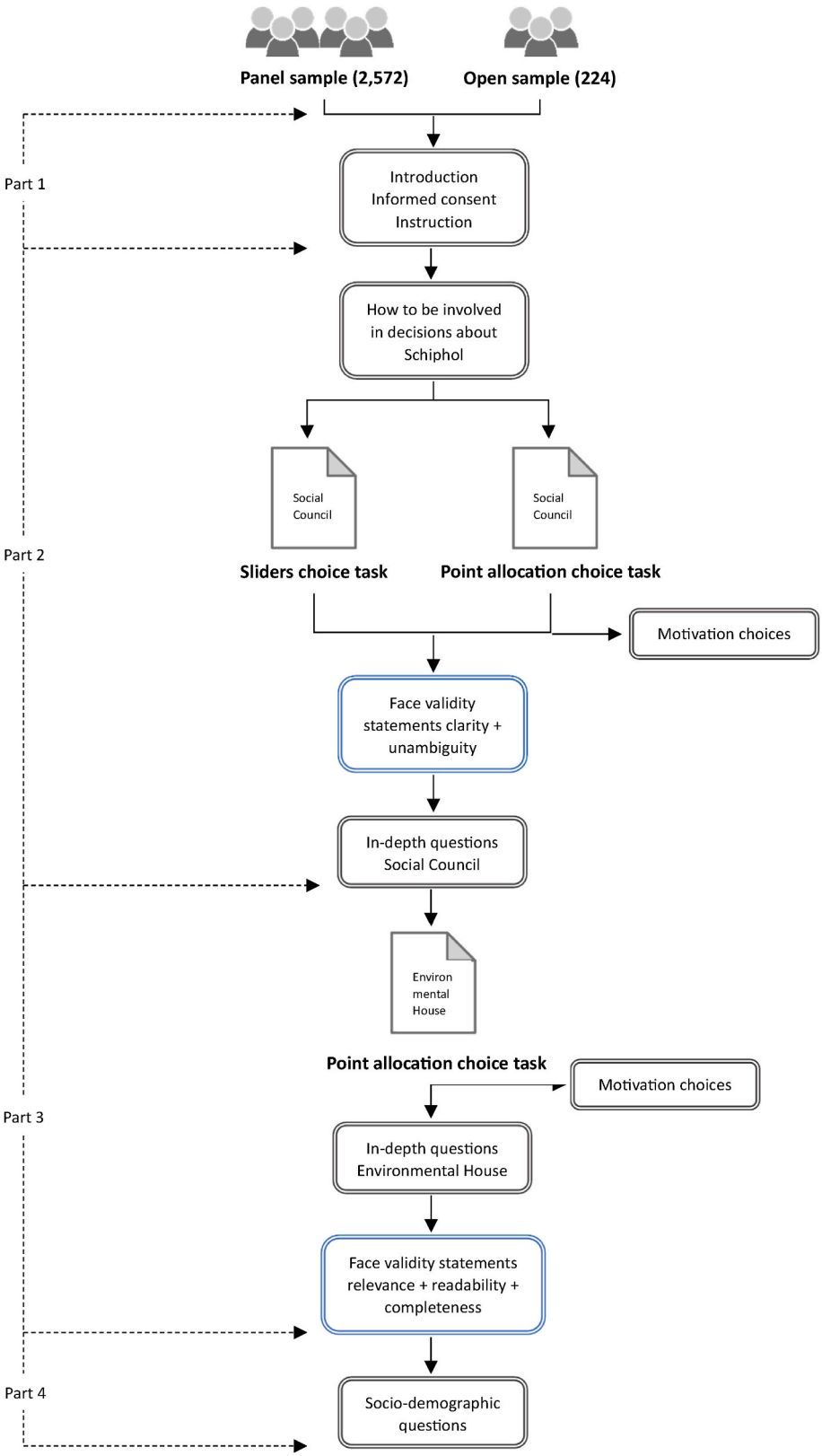

Fig. 4. Components of the Participatory Value Evaluation
Notes: *CBS (2021), **educational levels entail: high (HBO, University), middle (higher secondary education, MBO2-4), low (primary education, vmbo, lower secondary education, MBO-1).

Table 2
Socio-demographic characteristics of the sample.

Characteristics	Open (N = 219)	Panel slider (N = 1187)	Panel point (N = 1060)	Dutch >15 years population*	Chi^2 test (2-tailed) panel
Gender					
Male	58.0 %	45.2 %	43.1 %	49.5 %	1. <0.01***
Female	37.0 %	54.5 %	56.0 %	50.5 %	2. <0.01***
Other	5.0 %	0.3 %	0.9 %		
Age					
18–34 years	6.3 %	26.0 %	28.0 %	30.2 %	1. <0.01***
35–64 years	69.7 %	52.5 %	54.4 %	46.7 %	2. <0.01***
65+ years	24.0 %	21.5 %	17.6 %	23.1 %	
Education**					
High	82.2 %	43.7 %	41.7 %	38.3 %	1. <0.01***
Middle	11.1 %	36.5 %	39.8 %	35.6 %	2. <0.01***
Low	6.7 %	19.8 %	18.5 %	26.1 %	

Table 3
Results preferences for possible tasks of the Schiphol Social Council.

	Social Council		Environmental House	Open
	To what extent should the Council focus on this task?*	What proportion of the 60 effort points should be dedicated to this task?	What proportion of the 20 points should be dedicated to this task?	What proportion of the 20 points should be dedicated to this task?
Thinking along about the effects of air traffic on people's daily lives	16 %	18 %	17 %	19 %
Ordering second opinions on studies regarding the effects of Schiphol Airport	14 %	9 %	14 %	16 %
Giving advice at the government's request on the decisions that the government wants to take	13 %	16 %	12 %	16 %
Organising that residents can think along**	14 %	16 %	16 %	9 %
Providing advice on how residents can think along	12 %	9 %	12 %	10 %
Thinking along about research	12 %	8 %	12 %	10 %
Devising and carrying out own research	10 %	17 %	9 %	9 %
Giving unsolicited advice***	9 %	7 %	8 %	11 %
Total	**100 %**	**100 %**	**100 %**	**100 %**

Notes: *the maximum effort is 100 %; **in the open PVE, this task was named "taking on the organisation for residents to think along"; ***in the open PVE, this task was named "giving advice on own initiative".
Task as a means of increasing general trust in research and the government.

can go if they are not satisfied with how the government or Schiphol Airport handles their complaints (see Table 5). We see that inclusiveness and the existence of a place where you can properly address questions and complaints are important values for supporting these tasks. Regarding inclusiveness, it is clear that many participants feel that the House should focus on the information needs of residents who are not well-informed and who have difficulties in accessing reports with a higher language difficulty level. Answering questions and making knowledge clear and understandable is a means of achieving inclusiveness. In doing so, participants find it important that, as a resident, you can 'turn to' a neutral body if you have questions or complaints. When a government swiftly answers questions, participants perceive this as a sign that the government takes residents seriously. This makes them feel heard and increases their trust and support.

4.2. *Face validity as perceived by participants*

In part 2 and 3 of the PVE, participants were asked the face validity assessment questions. In total 1230 participants completed these questions. Of which 648 were assigned the slider choice task version and 582 the point allocation choice task version of the Social Council.

Figs. 5–9 show the descriptive statistics of the responses. The descriptive results indicate that these participants generally perceived the PVE as relevant for giving their opinion on which functions both councils should carry out (71.2 % agrees), as providing sufficient opportunity to give advice on how citizens should be involved in decision-making and information provision about Schiphol Airport (70.6 %) and as understandable or containing easy-to-read questions (73.8 %). Overall, the PVE was thus perceived as relevant, readable and complete.

We performed latent class analyses to further study which participants have homogeneous perceptions on face validity. This analysis assigns all participants to a class based on their characteristics and assessment of the face validity determinants. Three of these classes were generated. Wald Tests were performed to select the characteristics with a significantly strong relationship to the classes.

Table 6shows the results for the 648 participants who completed the slider choice task of the Social Council. The largest class shows that more than half of the participants assess the face validity positively. They are predominantly middle aged and higher educated. Class 2 shows that 29.7 % of the participants take no clear position with regard to face validity and are mostly younger of age. Class 3 (14.7 %) shows that some participants clearly assess the general face validity higher than the face validity of the Social Council choice task. This group is lower educated and (quite) unsatisfied with their influence on decisions about Schiphol Airport.

Table 7 presents the results for the 582 participants who completed the point choice task of the Social Council. A similar face validity perception can be seen as for the participants who finished the slider choice task. However, two notable differences arise. First, the positive class (39.2 %) is smaller than in the slider choice task analysis (55.6 %). Second, the class of participants that makes a clear distinction between the general questions and those focused on the Social Council is more than twice

as large (39.0 %). Which implies that participants considered the slider design as less clear and unambiguous than the point allocation design.

4.3. *Face validity as perceived by institutionalized stakeholders*

As can be seen in Fig. 1, we assessed the face validity as perceived by stakeholders by asking them to evaluate the PVE results and by interviewing them to reflect on the PVE's face validity ex post. Stakeholders were invited to provide feedback on the draft report with the results of the PVE before it became public. We also selected someone from each stakeholder group to interview after the participatory process was finished to ensure that each perspective was heard and taken into

Table 4
Frequency of occurrence reasons for choosing tasks of the Schiphol Social Council.

	Normative reasons	Substantive reasons	Instrumental reasons	Conditions	Counter-arguments
Thinking along about the effects of air traffic on people's daily lives	33 %	22 %	2 %	12 %	0 %
Ordering second opinions on studies regarding the effects of Schiphol Airport	1 %	14 %	40 %	8 %	6 %
Giving advice at the government's request on the decisions that the government wants to take	11 %	10 %	10 %	19 %	18 %
Organising residents to think along	23 %	11 %	6 %	19 %	4 %
Providing advice on how residents can think along	15 %	8 %	4 %	8 %	9 %
Thinking along about research	4 %	9 %	17 %	15 %	22 %
Devising and carrying out own research	9 %	13 %	12 %	4 %	6 %
Giving unsolicited advice	4 %	13 %	9 %	15 %	35 %
Total	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**

Table 5
Results preferences for possible tasks of the Environmental House.

	Social Council		Environmental House	Open consultation
	To what extent should the House focus on this task?*	What proportion of the 10 effort points should be dedicated to this task?	What proportion of the 20 points should be dedicated to this task?	What proportion of the 20 points should be dedicated to this task?
Answering questions from residents	15 %	18 %	18 %	12 %
An independent committee, where residents can go if they are not satisfied with how Schiphol Airport or the government handles complaints	12 %	19 %	15 %	18 %
A website with all information about the effects of Schiphol Airport on the environment	14 %	11 %	10 %	19 %
Making knowledge clear and understandable	14 %	10 %	16 %	14 %
A website about scientific knowledge and research on the effect of air traffic on the living environment	13 %	10 %	9 %	13 %
Information about laws, regulations and policies	11 %	8 %	11 %	10 %
A physical information center	8 %	12 %	8 %	3 %
A website with an overview of residents' organisations	8 %	5 %	7 %	6 %
A physical place where residents can meet each other	5 %	7 %	6 %	4 %
Total	**100 %**	**100 %**	**100 %**	**100 %**

Notes: *the maximum effort is 100 %.

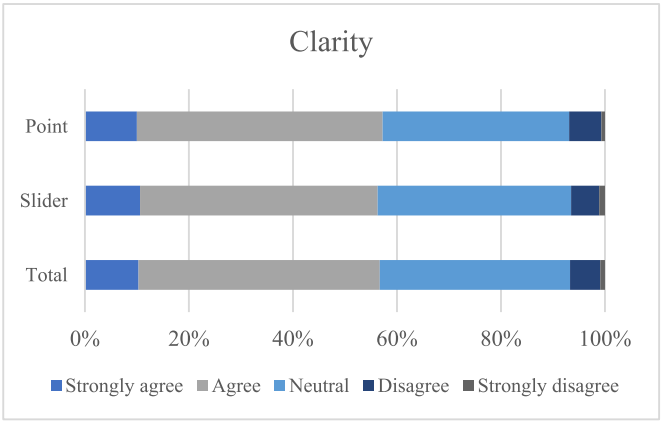

Fig. 5. Descriptive statistics clarity question.

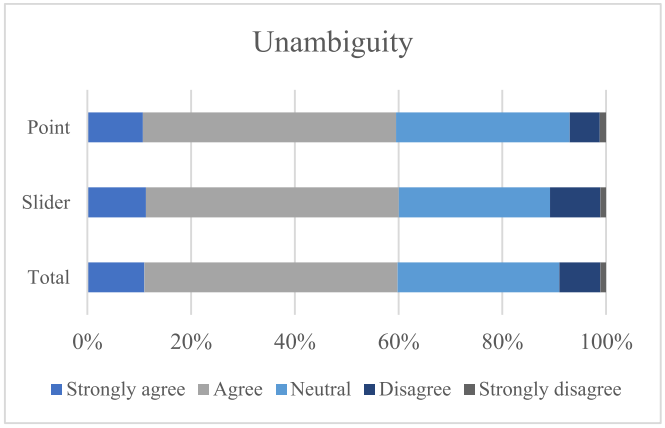

Fig. 6. Descriptive statistics unambiguity question.

account. These interviews were of a semi-structured nature.

Only one stakeholder provided comments on face validity and later repeated her concern during the presentation of the main results to all stakeholders. She said: "many people thought it was so incredibly complicated and long, that they dropped out". While she agreed that the PVE was complete, as it included all stakeholders' ideas, this made it a lengthy and less feasible consultation for participants. During subsequent interviews with stakeholders, one interviewee said that he was pleased with the number of feedback moments and close involvement of the stakeholders during the design process. In his view, all opinions were heard, feedback was processed quickly, aspects could be looked at multiple times and all stakeholders were able to evaluate the final version of the PVE design and report with results.

He stressed that the multiple feedback rounds were definitely necessary in this case, as one feedback round would not have been sufficient to get the required support for the PVE from all stakeholders. Another interviewee indicated that it was useful that in the design process all kinds of stakeholders were forced to state very precisely and very clearly what they meant by each policy option. The fact that the PVE needs to be accessible for lay people forces stakeholders to articulate their perspectives, ideas and arguments in a clear way. This is also beneficial for the stakeholder process in and of itself.

A third interviewee said she liked the fact that an independent party collected input from stakeholders. This encouraged stakeholders to

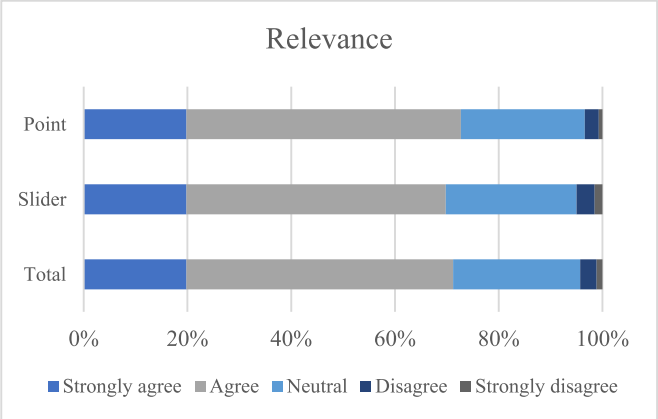

Fig. 7. Descriptive statistics relevance question.

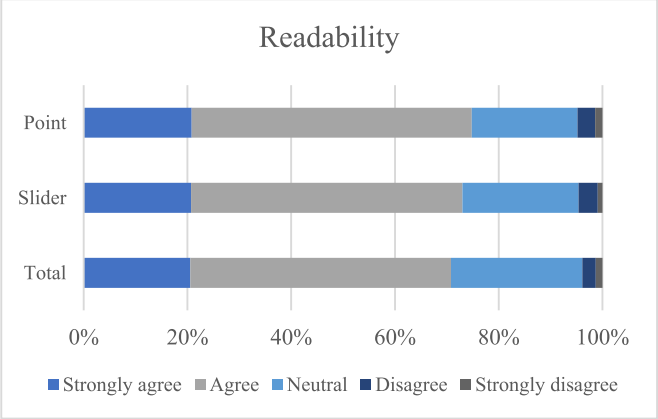

Fig. 8. Fig. 8 Descriptive statistics readability question.

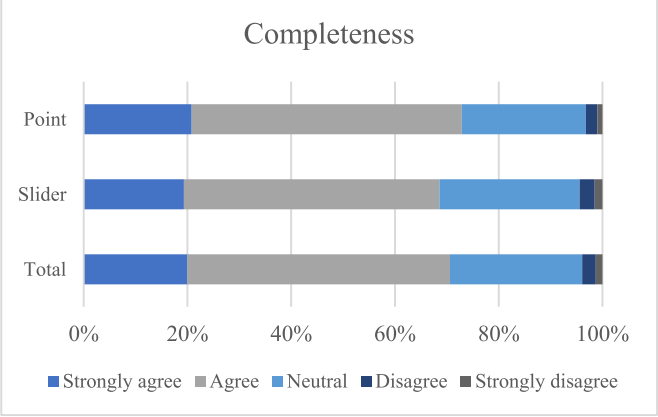

Fig. 9. Descriptive statistics completeness question.

openly articulate their views and values as in joint meetings, with the government being present as well, as they usually operated in a strategic way. He argued that with the benefit of hindsight it would have been better to only conduct one version of the PVE (the slider design) as the other version (the point allocation design) did not really align with the exact decision problem of the government. He agreed that having two versions resulted in consensus among the stakeholders regarding the face validity of the design, but he thought that this benefit did not outweigh the decreased usability of the outcomes. Both in terms of closeness to the real-world policy situation and loss of feasibility for participants.

All interviewees reflected on the length of the experiment and emphasized that in this particular case it was difficult to find the right balance between completeness and feasibility. As a possible solution, the first interviewee cited that this trade-off may differ between the panel and open sample. As the panel sample satisfies the need for feasibility and the open sample the need for completeness. Another interviewee, who was not involved in the design process of the PVE, argued that the outcomes were well-underpinned. At the same time, however, she felt that the questioning in the PVE was somewhat 'steering' as respondents were asked to select from a limited or pre-determined set of tasks.

Two other stakeholders were asked to reflect on the PVE process and both of them thought that the benefits of the process outweighed the costs. First, they hoped to reach and vocalise the citizens who were previously silent about the situation. Since 70 % of the participants stated that they had not given their opinions on this subject before, this goal was realized. Second, they both felt that the design process of the PVE positively contributed to the conflict situation. While the stakeholders were hostile and distrustful at the start of the design process, they accepted the process gradually over time and it forced them to be explicit about the options and consequences they envisaged. Third, the two interviewees argued that the PVE saved a lot of money. Prior to the PVE, stakeholders and government officials pushed for very expensive alignments of the Environmental House, such as a physical meeting place. The PVE showed that this option was not prioritized by participants and residents who have to make use of this possibility. After this option was no longer considered desirable, it prevented spending a large number of public resources. Finally, one interviewee stated that time efficiency was less important in this particular case and should be compromised to break the gridlock situation.

5. Conclusion

We conducted a Participatory Value Evaluation (PVE) to involve Dutch citizens in decision-making regarding two new entities for Schiphol Airport. The Social Council and Environmental House should improve the quality of public participation and information provision. This improvement was meant to break the stalemate between stakeholders that emerged when they discussed flight routes. This situation escalated over time to the point where stakeholders could no longer discuss or agree on any topic related to the Airport. In previous PVEs, we involved citizens in designing the experiments to accommodate in their concerns about validity and late involvement. The main goals of the citizens and the municipality were aligned in these cases.

In this study, we investigated whether deploying PVE results in similar benefits and costs in the context of the Schiphol Airport conflict situation. In this case study, the main goals of stakeholders and the Airport were not aligned. As involved citizens and other stakeholders had conflicting interests and goals, issues on involvement and validity became more prominent. In such a context, the perceived validity of the PVE is an even more important precondition for the success of a participatory process. Therefore, we developed a method to test the face validity of a PVE. We asked participants to indicate their agreement with statements on the clarity, unambiguity, relevance, readability and completeness of the PVE. Some statements were tailored to the choice task about the Social Council, as this was the part in which most design concessions were made to satisfy stakeholders' requests.

We conclude that PVE can provide the same benefits in a situation of an institutional transport conflict present. Many citizens participated in this PVE who had never before given their opinion on decision-making regarding Schiphol Airport. Not only all population subgroups were represented but also the silent middle group. The PVE resulted in useful decision-making advice that prevented the municipality from taking costly actions that were not desired by citizens. Finally, the PVE design process benefited managing the stakeholders and the conflict situation. By involving them early in the design of the PVE and accommodating in

their validity requests we decreased resistance and initiated conversation among them again.

However, some notable costs arose. These were the time-intensive design process of multiple feedback rounds with stakeholders and balancing their validity requests. This involved consequences for participants of the PVE. Creating two design versions and increasing their length to secure stakeholders' approval contradicted the benefit of low time investment for civil servants from previous cases. It also created a dichotomy between two groups of PVE participants on their perception of validity. One group is positive about all five face validity statements while the other group is decidedly less agreeable with the statements about the Social Council choice task. This pattern is more prominent among participants who completed the point allocation version than among those who completed the slider version. While the point allocation version was created because some stakeholders perceived the validity of the slider version as lower, participants of the PVE did not share their perception.

On the one hand, we can conclude that previous PVE cases with stakeholder involvement are more cost-effective than this case study. On the other hand, it is evident that costs are higher in an institutionalized conflict situation compared to cases in which such a conflict is absent. This application shows that similar benefits can still materialize when PVE is applied in a conflict situation. But this is accompanied with relatively high costs.

6. Discussion

Some interviewed stakeholders criticized the PVE for being too complicated and lengthy. One of them summarized that time efficiency is inferior to managing an institutionalized conflict situation. We agree with the fact that ensuring progress and stakeholders' satisfaction in a conflict situation requires more time and likely results in the prioritization of completeness over feasibility of the design. One direction for further research is whether a good balance between completeness and feasibility can be reached by allowing participants to choose between two versions of the PVE on the introduction screen. One that is lengthy but optimised on completeness and one that is relatively short but more feasible.

Adhering to stakeholders' preferences on both content and presentation has another potential imitation. It could have introduced biases into the PVE design. However, not adhering to these requests would have caused (more) feelings of illegitimacy among stakeholders. This would have hindered the design process more, both in terms of time investment and issues to solve. Though, stakeholders could have neutralized these biases as their preferences often diverted to both directions of a design choice. All of them also had to eventually agree on the final design.

A limitation of this study was the large time investment in the rounds of feedback with stakeholders. Future research could focus on minimizing this time investment, for example by allowing all stakeholders to provide their feedback simultaneously in one session. The benefit of such a design decision might be that it takes less time and the quality of the deliberation might improve when stakeholders respond to each other. However, one interviewee warned that stakeholders in such sessions might engage in strategic behavior. This should be moderated carefully with appropriate negotiation and facilitation techniques. Conducting follow-up sessions with smaller groups of stakeholders can minimize this behavior and can be used to verify their preferences. Another example is managing the length by setting restrictions on the number of words or questions in advance. This is important for the scalability of PVE to conflict situations in which even more stakeholders are involved. Applying PVE to such a situation can still result in similar benefits and costs, especially if the conflict is less intensive and institutionalized. However, we acknowledge that generalizing the results of this study to other cases is challenging due to the specific nature of this institutionalized conflict situation.

While we also developed the face validity assessment method based on this case study, we intend it to be generally applicable to more preference elicitation methods. It is important to evaluate the perceived validity of a participatory instrument in a context with and without conflict between the goals of stakeholders and the government. However, we do want to emphasize that balancing the benefits and the costs should be a key component of the design of any participatory process. We believe there is value in generalizing the assessment instrument beyond this application and the PVE method. For example, to discrete choice, ranking and rating tasks. Or to other policy contexts such as health, energy, climate and spatial planning. Adding an open question after the statements could provide us with additional suggestions on how to improve the face validity of the design. It could also clarify the drivers of participants' engagement, understanding and interpretation. We will include such a question in follow-up studies.

A limitation of this study was that we were only able to test five face validity determinants. Future research may further develop the instrument by adding the other face validity determinants that we identified in our literature research. Of specific interest are the potential relations between all determinants. Identifying these could result in guidelines for researchers on how to develop a face valid preference elicitation experiment. Regression and factor analysis are potential methods to study these relationships. We formulated the statements in this study to fit the case specifically. For the improved instrument we intend to formulate the statements in a general way, such that they would fit multiple elicitation styles. Generalizing the statements would also simplify them, as case study details disappear from the phrasing.

Then, we can relate the determinants to general aspects mentioned in the literature instead of to the specific choice tasks of this study. For example to general information, instructions, choices or policy topics. This also presents us with the choice to use one or more statements per determinant in the improved instrument. More research is however needed to determine the exact phrasing for each statement. Although feasibility was an important determinant for this case study, we did not include it in the assessment instrument. Adding it in future case studies gives us the opportunity to study its relationship with completeness in more detail. Participants' responses to these statements could provide more evidence for the trade-off between feasibility and completeness.

The difference in assessment of the point allocation and the slider designs is another interesting avenue for further research. It suggests that not only characteristics of participants but also characteristics of the design could influence face validity. A follow-up study could focus on relating the face validity determinants to different choice task designs. After the assessment instrument is further developed, it is interesting to study face validity perceptions more dynamically. For example, by applying focus group, think aloud or eye-tracking methods. These methods can also be useful during the pilot testing phase. In combination with the face validity assessment instrument, we can identify where participants run into issues with executing, understanding and interpreting the PVE. Further research should focus on which aspects need adjustment such that the instrument can be applied in this way.

CRediT authorship contribution statement

Annamarie de Ruijter: Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization, Writing – review & editing. **Charlotte Tuit:** Methodology, Formal analysis, Data curation, Conceptualization. **Niek Mouter:** Writing – review & editing, Supervision, Project administration, Funding acquisition, Conceptualization.

Funding

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Declaration of competing interest

Niek Mouter reported having stocks in the private company Populytics, a startup of the Delft University of Technology which commercially applies the method Participatory Value Evaluation. Charlotte Tuit is employed at Populytics.

Appendix A. Latent Class Analysis – slider choice task

Table 6
Latent Class Analysis of the panel slider sample Appendix B. Latent Class Analysis – point allocation choice task

Slider choice task (N = 648)		Class 1	Class 2	Class 3	Wald (p-value)
Class size		55.6 %	29.7 %	14.7 %	
Indicators					
Clarity	(strongly) agree	81.3 %	27.4 %	14.6 %	107.1
	Neutral	18.3 %	60.2 %	64.8 %	(0.00)***
	(strongly) disagree	0.4 %	12.4 %	20.6 %	
Unambiguity	(strongly) agree	89.6 %	29.5 %	9.1 %	85.8
	Neutral	10.2 %	55.1 %	49.2 %	(0.00)***
	(strongly) disagree	0.2 %	15.4 %	41.7 %	
Relevance	(strongly) agree	92.8 %	18.3 %	86.2 %	98.1
	Neutral	7.2 %	64.6 %	13.6 %	(0.00)***
	(strongly) disagree	0.0 %	17.1 %	0.2 %	
Readability	(strongly) agree	94.9 %	25.8 %	84.9 %	97.6
	Neutral	5.0 %	58.7 %	14.8 %	(0.00)***
	(strongly) disagree	0.1 %	15.5 %	0.3 %	
Completeness	(strongly) agree	87.5 %	24.6 %	85.0 %	90.7
	Neutral	12.3 %	60.7 %	14.8 %	(0.00)***
	(strongly) disagree	0.2 %	14.7 %	0.2 %	
Covariates					
Age	18–34 years	28.3 %	41.0 %	26.7 %	8.5
	35–64 years	51.8 %	43.3 %	55.9 %	(0.01)***
	65+ years	19.9 %	15.7 %	17.4 %	
Gender	Male	49.2 %	59.1 %	56.2 %	7.0
	Female	50.8 %	40.9 %	43.8 %	(0.03)**
Education*	High	44.2 %	56.0 %	38.0 %	8.3
	Average	36.2 %	32.0 %	40.8 %	(0.02)**
	Low	19.6 %	12.0 %	21.2 %	
Satisfaction with influence	Satisfied	35.8 %	32.0 %	20.0 %	6.6
	Neutral	48.2 %	49.0 %	52.0 %	(0.04)**
	Unsatisfied	16.0 %	19.0 %	28.0 %	

Notes: Bayesian information criterion (BIC) value for the optimal number of (three) classes: 658.61, *educational levels entail: high (HBO, University), middle (higher secondary education, MBO2-4), low (primary education, vmbo, lower secondary education, MBO-1).

Table 7
Latent Class Analysis of the panel point allocation sample

Point allocation choice task (N = 582)		Class 1	Class 2	Class 3	Wald (p-value)
Class size		39.6 %	39.0 %	21.4 %	
Indicators					
Clarity	(strongly) agree	92.6 %	36.2 %	29.9 %	27.2
	Neutral	7.3 %	53.7 %	56.5 %	(0.00)***
	(strongly) disagree	0.1 %	10.1 %	13.6 %	
Unambiguity	(strongly) agree	97.5 %	38.1 %	27.8 %	8.1
	Neutral	2.5 %	52.3 %	56.7 %	(0.02)**
	(strongly) disagree	0.0 %	9.6 %	15.5 %	
Relevance	(strongly) agree	96.0 %	74.2 %	26.7 %	49.9
	Neutral	4.0 %	24.9 %	59.0 %	(0.00)***
	(strongly) disagree	0.0 %	0.9 %	14.3 %	
Readability	(strongly) agree	95.9 %	87.3 %	12.7 %	31.5
	Neutral	4.1 %	12.6 %	65.1 %	(0.00)***
	(strongly) disagree	0.0 %	0.1 %	22.2 %	
Completeness	(strongly) agree	92.9 %	83.1 %	17.2 %	64.8
	Neutral	7.1 %	16.7 %	68.0 %	(0.00)***
	(strongly) disagree	0.0 %	0.2 %	14.8 %	
Covariates					
Age	18–34 years	25.0 %	34.0 %	42.7 %	12.1
	35–64 years	54.0 %	46.8 %	44.3 %	(0.00)***
	65+ years	21.0 %	19.2 %	13.0 %	
Education*	High	52.6 %	38.0 %	35.8 %	9.3
	Average	36.9 %	41.9 %	41.7 %	(0.01)***
	Low	10.5 %	20.1 %	22.5 %	
Inconvenience	Yes	21.8 %	20.0 %	12.3 %	1.5

(*continued on next page*)

Table 7 (*continued*)

Point allocation choice task (N = 582)		Class 1	Class 2	Class 3	Wald (p-value)
from Schiphol	No	78.2 %	80.0 %	87.7 %	(0.04)**
Information	Reliable	53.2 %	33.6 %	31.3 %	9.5
reliability	Neutral	37.3 %	56.4 %	57.1 %	(0.01)***
	Unreliable	9.5 %	10.0 %	11.6 %	
Information	Independent	27.6 %	10.3 %	19.3 %	6.5
independence	Neutral	50.3 %	59.5 %	63.5 %	(0.04)**
	Dependent	22.1 %	30.2 %	17.2 %	

Notes: Bayesian information criterion (BIC) value for the optimal number of (three) classes: 491.90, educational levels entail: high (HBO, University), middle (higher secondary education, MBO2-4), low (primary education, vmbo, lower secondary education, MBO-1).

Data availability

Data will be made available on request.

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