Initiating the Global AI Dialogues: Laypeople Perspectives on the Future Role of genAI in Society from Nigeria, Germany and Japan

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Figure 1: Dialogues on genAI in Nigeria, Japan, and Germany with laypeople stratified across gender, age, and AI knowledge levels. Copyright: Authors of the paper; photo consent obtained from participants.

Abstract

With the rapid development and release of generative AI (genAI) applications, policy discourses primarily take place on an expert level. Little space is given to laypeople – who have to adapt to and adopt the genAI innovations – to share their opinions and experiences. Addressing this gap, we organized 6h/3.5h laypeople dialogues in Nigeria, Japan, and Germany in July and August 2024. During the dialogues, participants discussed what a desirable future in light of genAI development could look like in one of three contexts: education, public service, and arts & culture. Participants explored the consequences of technology deployment, assessed

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the risks, mapped stakeholders, and derived measures to achieve a desirable goal. This study contributes to policy debates on genAI by providing recommendations derived from participants' identified requirements and suggested measures for genAI to create value and to foster a socially desirable future. We reflect on the results through a cross-national lens.

CCS Concepts

• **Human-centered computing** → **Empirical studies in HCI**; **Empirical studies in collaborative and social computing**; • **Social and professional topics** → *Computing / technology policy*.

Keywords

citizen dialogue, civic participation, participatory AI, stakeholder involvement, public perception, generative artificial intelligence

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1 Introduction

"There is not just a gap, there is a canyon in between what these companies think we are going to do with AI and what right now people want to do with it or are even willing to do with it." [54]

With this response to Google's advertisement video *Dear Sydney* for their generative AI (genAI) driven application *Gemini*, researcher Casey Fiesler showcased a growing problem in AI development: the gap between technological advancement and social meaning. She relates this to the concept of the socio-technical gap, which is "the divide between what we know we must support socially and what we can support technically" [1, p.179]. The ad illustrates a fictional use case of the genAI system, where a father is proposing the utilization of the system to help his daughter write a fan letter to her sports idol. The ad received broad criticism in public media, as the displayed system's usage is seen to prevent a meaningful social interaction between father and daughter [167], as well as preventing meaningful learning progress for a child. This critique aside, where lies the societal value of this fictional use case, or, as Fiesler [54] puts it: "who does want an AI-written fan letter? It turns out practically no one." This case also illustrates that societal meaning cannot be predefined by industry but is determined by society, i.e., by laypeople. Hence, with our work we turn to laypeople to have them assess the societal value of genAI and deliberate about the potential role of genAI in a desirable future.

Generative AI. GenAI systems "create new content — including text, image, audio, and video – based on their training data and in response to prompts" [111, p.6]. While the release of the text-to-text application ChatGPT by OpenAI in November 2022 marks a milestone for the public awareness and accessibility of such systems, genAI is a broad and rapidly growing field, which spans a wide range of different output modalities and applications that are deployed across different domains [63]. Currently, text-to-text, text-to-image, text-to-audio, text-to-video, text-to-3D, text-to-code, and text-to-science can be listed as the most popular text-input based systems [62]. Nonetheless, Fletcher and Nielsen [55] find in their 2024 study that ChatGPT is the most known genAI application by far across their surveyed countries (Argentina, Denmark, France, Japan, UK, and USA) with 50% of people online having heard of it. Likewise, it is the most used genAI application, although daily usage is still quite rare with only 7% in the USA, 2% in the UK and France, and only 1% in Japan [55].

The Global AI Dialogues. In this paper, we are interested in three application contexts of genAI: education, public service, and arts & culture. We selected these three contexts based on prior work [159], asking 61 policymakers and advisors and 1070 laypeople cross-nationally about their perceptions of genAI. The contexts have also been identified as relevant for the following reasons: genAI in education is not only of high importance to school pupils and university students but also adults in the context of their children's education or their own life-long learning [14, 111, 156, 171]. GenAI in the public sector is of high relevance as public authorities across the world are under pressure from their governments to implement genAI services [112], also with the promise to combat the shortage of skilled workers in some countries [98, 170]. GenAI in creative industries, and arts & culture is of great relevance due to the significance and societal value of intellectual property (as exhibited in early court cases), but also new creative opportunities for artists and cultural actors that can be created [24, 68, 111, 140].

This work is part of a larger citizen engagement project, the *Global AI Dialogues*, which is a dialogue series that invites citizens around the world to engage, discuss, and contribute their perspectives on the topic of AI. To date, 288 people across six countries participated in dialogues on the topic of generative AI or facial processing technologies. Each dialogue was co-organized and hosted by local partners. After data collection for the analysis of this paper, further dialogues took place in India, Mexico, and Bolivia in late 2024. More information on this participatory AI project is accessible at https://linktr.ee/aidialogues.

Aims, Research Questions, and Procedures. With our research, we intend to expand the discourse on genAI by creating spaces for laypeople to test genAI applications and exchange experiences with fellow laypeople, and express their opinions. This includes the goal to make dialogues among participants more informed and reflective [58], and to disseminate the diverse perspectives that surface through these discourses. The rationale behind these processes is to complement the perspectives of developers, industry stakeholders, and respective research communities with laypeople perspectives as a key prospective user group. It has previously been argued that "their local knowledge, wisdom, commitment, authority, even rectitude can address wicked failures of legitimacy, justice, and effectiveness in representative and bureaucratic institutions" [58, p.74]. Considering the rapid roll-out of genAI with little to no safeguards in the first place, we apply this perspective to the implementation and governance of genAI. In the following, we use the term laypeople to refer to individuals from the general public, who do not necessarily have specialized knowledge (see also [32, 157, 158, 166]) in AI and who gather in a non-professional

context with fellow residents forming a "mini-public" to discuss matters of public interest [57].

Our empirical study differs from previous research that mainly focuses on the perception of specific genAI manifestations and their characteristics, specific user groups and related application contexts, or specific output modalities. First, there is a notable lack of research regarding what contexts the general public thinks genAI should be deployed in and how. Second, there is a shortage of investigations of cultural variations and commonalities in perceptions. To address these gaps, we explore whether and how the general idea of a roll-out of genAI technology as part of a desirable future socio-technical system and its promise of creating societal value is envisioned by laypeople in three countries. We do so without pre-framing a specific type of application or output modality. We ask:

RQ1: How do laypeople envision the role of genAI in education, public service and arts, culture & creative industries in the context of a desirable future?
RQ2: What requirements, measures, and actors do laypeople perceive as relevant for genAI to create societal value?

Following these research questions, we organized 6h and 3.5h in-depth dialogue workshops with laypeople in three different countries: Nigeria (N=30), Japan (N=23), and Germany (N=23). Before and during the workshops, participants were able to acquire a basic understanding of genAI technology and, in groups, developed a shared future vision for the application (or non-application) of the technology based on local-specific discourses.

Contributions. This work offers genAI stakeholder communities the opportunity to learn about *informed* opinions of laypeople by spotlighting perspectives of mini-publics engaging in in-depth dialogue workshops. Our current data analysis covers three countries and thereby allows for a cross-national comparison of perceptions on genAI in contexts of high societal relevance, i.e., education, public service, and arts and culture. By providing spaces to experience the technology and exchange opinions as well as by empowering laypeople, we respond to expressed needs "for further research to prepare for different possible generative-AI future scenarios" [111]. Further, our results and recommendations cater to genAI developers, HCI professionals, policymakers, and genAI intermediaries/users in the following way: (1) We state societal and technical requirements that laypeople perceive as necessary conditions for genAI to be perceived as valuable. (2) We describe measures that, from a laypeople perspective, can foster achieving a desirable future with genAI.

2 Background

2.1 Impacts on Societies and Governance Responses

With increasing deployment of genAI, its impact on societies worldwide has diversified. Bird et al. [18] present a taxonomy of risks associated with text-to-image genAI systems across three categories, i.e., discrimination and exclusion, misuse, and misinformation and disinformation. Katirai et al. [93] provide a categorization of social issues associated with image generation models. Also, misinformation is of high concern with respect to national and regional elections worldwide [95, 149]. In addition, issues that were previously raised in the context of the broader field of AI [134] are also critical for genAI applications: concerns regarding bias, unfairness, and discrimination [163, 171]; lack of transparency, contestability, and accountability or issues of liability [29, 123]; cybersecurity vulnerabilities [17, 70]; adverse effects on workers [106]; issues of data protection and privacy, legal personhood, and intellectual property [17, 106, 121, 140]; and public trust [17]. Other studies highlight local-specific issues such as cost-related inaccessibility and infrastructure issues specific to the African context [4, 171].

On the other hand, genAI applications promise benefits: to provide faster advice in public service settings [123], to reduce workload of local authorities [98, 170] or to prioritize cases in law enforcement [12]; in education to provide always available teaching assistants and mentors to pupils [36, 136], students [40] and adults [78], as well as reduce workload and prevent burnout of teachers [79]; and in arts & culture, and creative industries to protect images from unauthorized use for AI model training [140], or to inspire new styles and techniques [144] and serve in an assistive role in design tasks [106].

In response to the above-mentioned concerns and to better profit from potential benefits, regulatory bodies, intergovernmental organizations, and non-governmental institutions and groups, mainly from "Western" countries, have taken various steps. Prominent examples include published open letters calling for a pause [59] or discussions of policy considerations [111] concerning genAI. In addition, guiding principles for advanced AI systems including genAI [49] and voluntary codes of conduct for genAI [61] have been proposed. Further, the US Biden-administration issued an executive order on the safe, secure, and trustworthy development and use of artificial intelligence [150] that was rescinded after 15 months by the new administration [151]. In the European Union, the AI Act entered into force in August 2024 [51]. The call for adequate governance, however, is ongoing across the world [17, 91]. In Japan, the newspaper Yomiuri and telecommunications company NTT published a joint proposal in 2024 for shaping genAI including suggestions for legal restrains and effective governance to avoid a collapse of democracy and social order [152]. Likewise, responding to recent growth of AI in Africa, several countries on the continent have started to conceptualize legal and policy frameworks for AI and genAI regulation, or have already developed their own national policies [154, 171]. Reflecting on these recent developments, we emphasize that these measures should consider the public's essential needs, for instance, through involvement in the development of guidelines and measures.

2.2 Needs for Participation in AI and Public Dialogue Fora

The call for more participation to better reflect the public's perceptions has become prominent [e.g., 19, 41, 122]. In contrast to a "technocratic" or "paternalistic" approach to technology or risk assessment, which purports that individuals with technical expertise are best equipped to perform such an analysis [101], a participatory approach includes non-experts in the assessment of technology and its risks [105]. At times, both approaches also stand in direct contrast with each other. For example, in the context of the EU

Table 1: Overview of prior HCI research on people's perceptions of genAI: Three types of perception studies

Branch	Examples of Method	Examples of Study Subject/Object
Perception of specific characteristics of concrete genAI manifestations	*Qual.*: Thematic analysis of open-text responses [165] *Quant.*: survey study [69, 108, 165]; topic modeling of social media discussions [110]	social media users' perception of conversational agents [110]; clickworkers' perception of moral agency of mental health chatbots [165], of recommendation chatbot with different types of self-disclosure strategies (non-emotional, emotional) on recommendation acceptance [108] or of AI brainstorming assistants with different values on the ideation process and ideation output [69]
Perception of specific stakeholders on genAI application in specific contexts	*Qual.*: interview study [75, 76, 106, 145]; workshop study [76, 169]; thematic analysis of online threats [125]	perspectives of teachers, parents, and students on genAI for literacy education [75, 76]; knowledge workers on the impact of genAI in their respective context (advertising, business communications, education, journalism, law, mental health care, and software development) [169]; perception of independent game developers on the role of genAI in game development [125]; perception of UX designers and creative professionals on the impact of genAI on their practice [89, 106];
Perception of genAI output	*Qual.*: interview study [53, 109] *Quant.*: survey study [109, 127, 130, 141, 164]	readers' perception of image generation of political news articles [127]; (US-) citizens' perceptions of human vs. AI-generated written content [53, 130]; clickworkers' perceptions of AI-written messages [109], of emotional expressiveness of AI-generated images [164] or of LLM-powered search results [141]

AI Act, experts have pointed to the normative tension between AI developers judging the acceptability of AI risks and, hence, AI trustworthiness versus the assessment of trustworthiness of AI being informed by participatory processes [102].

To the authors of this paper, it is exactly this tension that motivates fostering the participation of non-experts through dialogue on issues of public concern. Personal experiences and local knowledge can bring into focus aspects relevant to the subjects of the dialogue [27, 34, 82]. Some authors of participatory work [e.g., 114] refer to the theory of communicative action, which proposes that deliberations among individuals can provide well-informed and reasoned viewpoints on matters of public interest [72, 73]. Based on the theories of Habermas, as described by [114], discourse ethics seeks to encourage participation from diverse stakeholders to present decision-makers with a broader array of viewpoints, requirements, and possible solutions [116]. Given the difficulty of achieving an ideal speech situation, researchers should strive to approximate the ideal by facilitating discussions and promoting participation by all [138]. Related to this, Tahei et al. [147] highlight the shortcomings of surveys in achieving public engagement objectives in AI research.

In the last years, there has been an increase in public dialogue fora aiming at achieving the above-outlined engagement objectives. However, to the best of our knowledge, there is no research exploring governance measures for genAI elaborated and proposed by laypeople through a deliberative effort such as a citizen dialogue. Related efforts deploying forms of public dialogues with laypeople on AI and related technologies include: a public assembly on high-risk AI [11], a community forum on AI chatbots [31], a citizen dialogue on the internet [114, 119], a citizens panel on virtual worlds [48], a citizen jury on AI and explainability [35], a citizen jury on the use of AI in healthcare [28], a citizen council on biometrics [2], and a deliberative democracy consultation on EdTech ethics [25].

2.3 Perception of genAI in HCI Literature

Exploring research by HCI communities on the perception of genAI since the release of ChatGPT, we can identify three types of perception studies (see Table 1). One branch of studies researches the public's perceptions of specific genAI manifestations and its characteristics such as conversational agents [110], mental health chatbots [165], recommendation chatbots [108] or AI brainstorming assistants [69]. A second branch of research investigates the perceptions of specific stakeholders on genAI applications in concrete contexts. Stakeholders include teachers, parents, and students [75, 76], knowledge workers [169], individuals in the creative industries and practices [30, 85, 89, 106, 125, 145]. GenAI application contexts include elementary literacy education [75, 76], advertising, business communications, education, journalism, law, mental health care, and software design [169], digital art [30], game development [125], or UX design [106]. A third research branch explores the perception of specific genAI outputs, such as news readers' perception of AI-generated images on political news [127], clickworkers' perceptions of AI-written messages [109], of emotional expressiveness of AI-generated images [164] or of LLM-powered search results [141], or (US) citizens' perceptions of human vs. AI-generated text content [53, 130].

While the existing research is valuable, it is often narrow in scope, focusing on perceptions of particular genAI manifestations, specific use cases of genAI in specialized domains, or their outputs. From the researchers' perspectives, it is crucial to recognize that perceptions of the desirability and anticipated societal value of genAI usage need to be investigated through a broader non-deterministic perspective. This should be carried out while taking the anticipations of potential changes to individuals' direct living environments as well as systemic relations into account. As a result, how laypeople envision a desirable use and interconnected societal impact of genAI remains underexplored. Furthermore, we identify a lack of cross-national comparisons of perceptions. Studied perspectives, to a great extent, reflect those of WEIRD countries, leaving out a large part of the world's population that is also utilizing genAI, but may be differently affected.

The consequence of this gap is the absence of overarching societal visions for the use of genAI informed by general publics that describe how genAI can contribute value to societies. Exploring this perspective across countries can help to challenge current narratives mainly put forward by industry actors and direct efforts by

Table 2: Goals, purpose, and the perspective of the study applying GQM

GQM Category	Goal 1: Characterize the role of genAI within a desirable future from laypeoples' perspectives	Goal 2: Characterize requirements, measures and responsible actors for genAI to create societal value
Measurement Goals	– Analyze laypeoples' anticipated role of genAI within a desirable future in a specific application context (education, public service, arts and culture) – for the purpose of characterization[1] – with respect to imagined *societal value* of a genAI technology – from the viewpoint of the researchers – in the context of dialogue workshops in Nigeria, Japan and Germany.	– Analyze laypeoples' imagined requirements and measures deemed necessary for genAI to create societal value and responsible actors to implement them – for the purpose of characterization[1] – with respect to imagined *conditions* enabling the societal value of genAI technology – from the viewpoint of the researchers – in the context of dialogue workshops in Nigeria, Japan and Germany.
Questions	Q1.1: Do laypeople in Nigeria, Japan, and Germany imagine genAI to be part of a desirable future within the contexts of education, public service, arts and culture? Q1.2: (If applicable) How do laypeople in Nigeria, Japan, and Germany envision genAI technology to create societal value in respective application contexts?	Q2.1: Which technical and societal requirements do laypeople in Nigeria, Japan, and Germany anticipate for genAI systems to create societal value? Q2.2: What measures do laypeople in Nigeria, Japan, and Germany anticipate to ensure AI systems create societal value, and who do they deem responsible for their implementation?
Metrics	For Q1.1: Evaluation of whether genAI is part of the imagined desirable future through qualitative analysis of worksheet sections on *aims* and *future scenario* (see A.3(1)) and through quantitative analysis of survey question on desirable future. For Q1.2: Deduction of the anticipated societal value of genAI technology through qualitative analysis of field notes and worksheet sections on *aims, future scenario* and *benefits* (see A.3(1)).	For Q2.1: Deduction of anticipated technical and societal requirements for genAI systems to create societal value through qualitative analysis of field notes and worksheet sections *benefits* and *risks* (see A.3(1)). For Q2.2: Deduction of measures and responsible actors through qualitative analysis of field notes and worksheets *stakeholder mapping* and *backcasting* (see A.3(2)&(3)) and through quantitative analysis of survey questions on regulation and institutions.

[1] With the term *characterization* we refer to what Briand et al. [22, p.256] define as "forming a snapshot of the current state" of the object of study. In our case, this refers to participants' imagined role of genAI technology within a desirable future scenario (Goal 1), or their anticipated requirements and measures deemed necessary for genAI to create societal value (Goal 2).

the HCI community and governments towards achieving societal value for all parts of societies – also paying attention to local factors influencing what is deemed socially valuable. Engaging with a broader vision of socially sustainable societal adoption of genAI systems can also help to contest research and development focused on narrow application contexts mainly driven by economic objectives, and point to new research directions based on the needs identified by the people.

We address this gap by studying the perceptions of laypeople convening in mini-publics. Performing qualitative studies with groups of citizens [130], or more generally laypeople [97], is a common HCI approach for in-depth analysis of specified topics (e.g., second branch of perception studies [76, 169]), as it "centers lived experiences of those impacted by technology" [169, p.4]. In contrast, when comparing preferences of distinct factors (e.g., first and third branch of perception studies), oftentimes clickworker's (Prolific, MTurk) perceptions are studied [69, 108, 109, 141, 164, 165].

3 Methods

In the following, we provide details regarding the rationale of our data collection, dialogue design, data analysis approach, and recruitment. We pre-tested the workshop materials in two different pre-tests and report observations in Appendix A.6.

This section highlights our research procedures with respect to the study's goals, purposes, and applied research perspective. This is illustrated by applying the Goal-Question-Metric (GQM) approach [168]: The main goal of this study, to foreground laypeoples' perceptions, can be split into two measurement goals when applying the GQM goal template [22], detailed in Table 2: First, each goal is described through its object of study, its purpose, its focus or perspective, the applied viewpoint and the context of the study. Second, each goal is characterized through a set of questions. Third, the type of data that is expected to address each of these questions and the analysis procedures are outlined.

3.1 Approach of Data Collection: Laypeople Dialogues Workshops

For an exploration of laypeople's touchpoints, perceptions, and future visions of genAI, we organized in-depth dialogue workshops with laypeople in three different countries. We chose a mixed methods approach [100] combining qualitative and quantitative data collection that enabled cross-national and local context-sensitive comparisons. More specifically, we applied a concurrent nested strategy with qualitative data being given priority over quantitative data, data collection occurring at the same time, and integration of qualitative and quantitative data and results taking place when collecting and interpreting the data [37, 38, 100].

3.1.1 Initiating a cross-national laypeople dialogue. We recruited participants from Nigeria, Japan, and Germany. The choice of these countries was based on an exploratory approach aimed at capturing perceptions from a varied range of nations, from both, Global South and North, and covers three highly distinct cultural clusters

according to the classification of Gupta et al. [71]: 'Sub-Saharan Africa,' 'Confucian Asia' and 'Germanic Europe'. Our unit of analysis focused on the country level instead of the cultural level, which enabled us to classify our study as cross-national [5, 135, 161], and it is occasionally viewed as a sub-category of cross-cultural research [161]. We recognize that by utilizing membership (nationality or residence) in a nation state as our grouping variable, we did not address the cultural variations that may exist both across and within countries [3]. Hence, with this exploratory study, we do not claim representativeness, neither for laypeople's perspectives in general nor for prevailing attitudes of the population of respective cities or countries. Our study adopted a descriptive approach, emphasizing possible differences and similarities in judgments both across and within countries. In this research, we refrained from providing oversimplified explanations that stem from a narrow view of culture in relation to national borders. We followed best practices for conducting cross-national studies [128].

3.1.2 Overview on data emerging from the dialogues. We designed a 6h (and 3.5h) dialogue format for in-depth group discussions. Pre-designed worksheets available in digital and printed form[1] that introduced one method after the other guided and structured the groups' processes and dialogues. All developed materials were shared among all local partners and four external reviewers (two postdoctoral researchers, a professor, and a lead scientist of an AI research team at a supranational organization, all four with a background in AI, machine learning, or computer science and also working as lecturers), and adapted according to their feedback. The material and workshop structure also allowed for the input of local-specific parameters (e.g., news articles depicting local-specific discourses). These were collected by the local partners, jointly discussed and the workshop material was adapted accordingly. All materials were translated into the local language. To ensure all participants understood the process, the worksheets were explained by group facilitators during the workshop process (one facilitator per table). Facilitators also moderated and observed discussions, taking field notes of the process. *Groups' worksheets* documenting their process of developing a shared vision for the technology (written on the sheets or using sticky notes), in combination with *facilitators' field notes* represent the qualitative part of our data collection. This was accompanied by quantitative data collected through a *multi-part survey* that was also included in the workshop process.

3.1.3 Organization and overview of a dialogue. The organization of the dialogue workshops was structured as follows: First, local partners advertised the dialogue to recruit participants. When participants registered for the dialogue, they were provided with additional informational material on the format (deepening the information provided by the advertisement) and asked to confirm the spot that was offered to them. After participants confirmed their spot, they were sent additional information on AI technology in general and on genAI specifically. Before the dialogue, the research team conducting the respective workshop recruited facilitators to guide the individual group processes.

To prevent introducing a moderation bias, several efforts were made to ensure facilitators were equally capable of moderation: We conducted 2-hour facilitator trainings in the local language with all facilitators several days before the respective dialogue, explaining all steps and providing the opportunity for the facilitators to try out the methods themselves and ask questions. As part of these trainings, facilitators were also provided with a comprehensive facilitation guide, leading them through the process step by step and explaining the methods, how to explain them to participants, and what to pay attention to explicitly at each step. It also clearly defined the role and activities of the facilitators to support the group method-wise and observe and document discussions (for details see A.1.1). After the training, facilitators were given time to reflect on the session and revisit the documents to ask final questions before the workshop. The facilitation guide also provided space for taking the field notes, making it a manual for the moderation of the group phases and documentation of the observations at the same time.

On the day of the dialogue, participants were welcomed and introduced to the research project in detail. After this short introduction, participants filled out the first part of the survey, which asked about their initial perceptions, feelings, and knowledge about AI in general and specifically genAI. Participants were then provided short talks about these topics by the research team conducting the respective workshop to ensure everybody was able to start the process with a general knowledge basis. Introductory talks were based on content from introductory online courses on AI [90] and supplemented with information on genAI, genAI applications, and potential risks and benefits [104, 111]. Afterward, participants filled out the second part of the survey, which centered around their previous awareness and touchpoints with genAI applications. After this first phase, participants were split into groups and applied the workshop process with the help of the worksheets and their facilitators. Afterward, participants filled out the last part of the survey, which centered around reflections and perceptions on the use of genAI in specific contexts as well as on potential regulations and the role of institutions. A joint sharing of the groups' workshop results concluded the event.

3.2 Laypeople Dialogues Workshop Process

We situate our workshop approach in the rich conceptual background and methodological history of participatory workshops in HCI [77, 137, 153, 169] and designed the protocols of the workshop accordingly. Participatory workshops in HCI often start with an initial impulse (oftentimes a probe [20] or provocation [169]) to engage participants with the context, to then collectively imagine and evaluate the anticipated effects based on the participants' lived experiences and perspectives. This often culminates in outputs aimed at influencing future agendas and policies. This protocol procedure has similarly been applied by prior HCI studies [e.g., 45, 81, 82, 169]. More specifically, the workshop process that guided the groups through their dialogue is a combination of methods from design futuring [43, 45, 92] (term by [56] and used as umbrella term for approaches like speculative design, design fiction, etc., as proposed by [99]), future studies [45, 60, 132, 133, 146], narrative and digital ethics [65, 82] as well as technology assessment [67]. These methods, stemming from different domains, all integrate a participatory element. In that sense, we build upon and are inspired by participatory speculative design [e.g. 52, 82], participatory futures

[1] Resources and more information on the material are accessible at https://osf.io/e7dx3/.

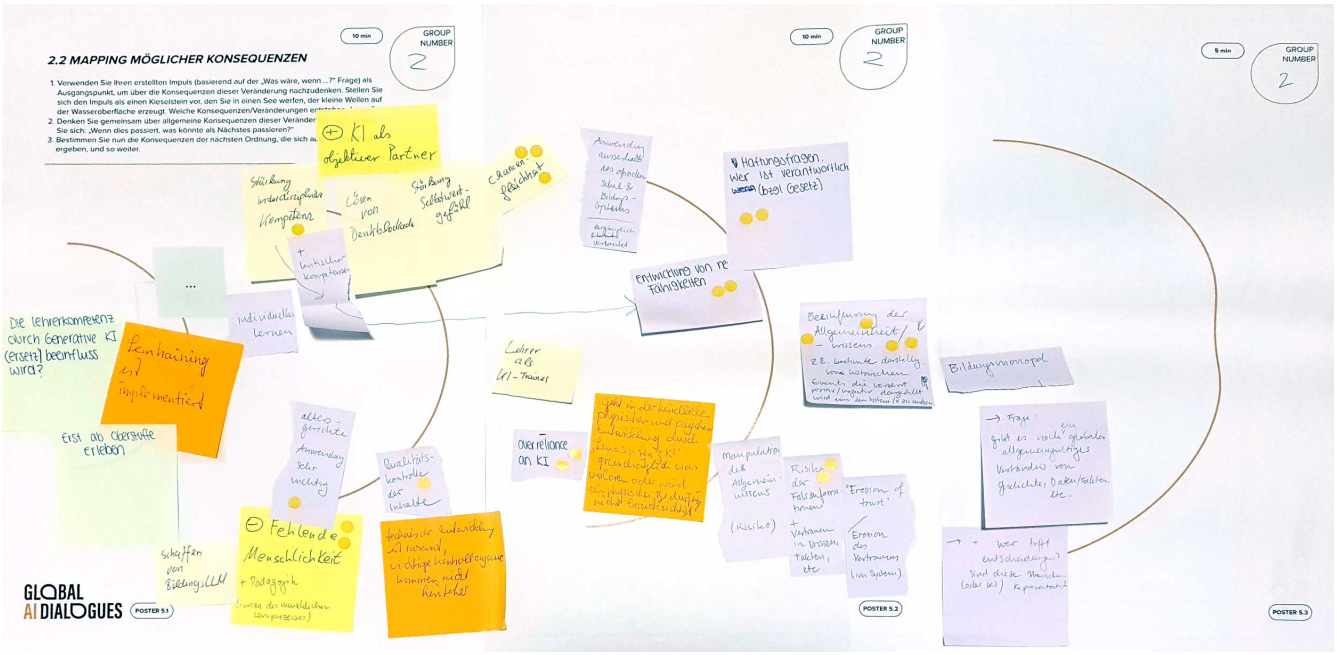

Figure 2: Example of the consequence mapping with voting from one German participant group (worksheet and post-its in German).

research [9, 16, 87], narrative [15, 66] and digital (media) ethics [46, 66], and participatory technology assessment [67]. The workshop process also builds upon prior work by the authors conducting risk assessment formats [160], eliciting socio-technical discourse through (participatory) speculative design [81–84], and assessing their value to inform policymaking [80]. In the following, we describe the dialogue workshop process.

3.2.1 Introduction and demonstrations. After the introduction in the plenary, groups (4-7 participants) assemble at their tables with their group facilitator. After a short introduction by the group facilitator, each group member introduces themselves and explains their motivation to take part in the workshop. As a short icebreaker, each group member indicates their use of genAI applications in their everyday lives and their perception of whether genAI will be beneficial for society or rather a threat using a coordinate system. To ensure that all participants have at least one hands-on touchpoint with genAI before starting the dialogue, a short practical task was conducted after the introduction. The task is to jointly create a short greeting card introducing the city where the workshop is held to participants from other workshops around the world. This is carried out by using a text-to-text system. We propose a privacy-sensitive system that is accessible without registration called *DuckDuckGo AI Chat*[2]. The second part of the task is to create an image suitable to accompany the text using a text-to-image application. We propose *Deep Dream Generator*[3], as it is accessible without pre-registration, enabling fast usage. The task is carried out using laptops, tablets, or smartphones, which every group is equipped with. Aside from gaining practical experiences with the technology, the task also strengthens the feeling of being part of a cross-national dialogue. Before starting into the next phase, the group jointly determines a code of conduct, complemented by a basic set of rules provided by the organizers. To mitigate the risk of individual participants dominating the groups' dialogues, this set of rules includes the request to pay equal attention to the perspectives of all participants and provide space for everyone to share their opinions. Group facilitators are also advised to pay attention to equal distribution of speaking time for each group member. The aim is to foster a good atmosphere of discussion and ensure a positive, fair and safe environment for all group members.

3.2.2 Data cards and selection of application area. In the following, groups start to engage with their topics of discussion. To kick this off, groups are introduced to three pre-selected topic areas: genAI and education; genAI and public service; genAI and arts, culture & creative industries. This introduction is carried out by the group facilitators using short summaries of the results of a horizon scanning [45, 146] in the form of data cards. Horizon scanning as a method stemming from foresight investigates signs of change in the present that could indicate major changes in the future. To make these signs as accessible as possible for the participants, the research team decided to focus on local (whenever possible) media and news reports, putting forward the newest developments in the respective topic areas. This could include reports about specific new use cases in a respective context, e.g., pilots for applying genAI-driven learning companions in a university, or service chatbots rolled out by a specific city. However, special attention was paid to including positive and negative perspectives in the summaries,

[2]https://duckduckgo.com/aichat
[3]https://deepdreamgenerator.com/

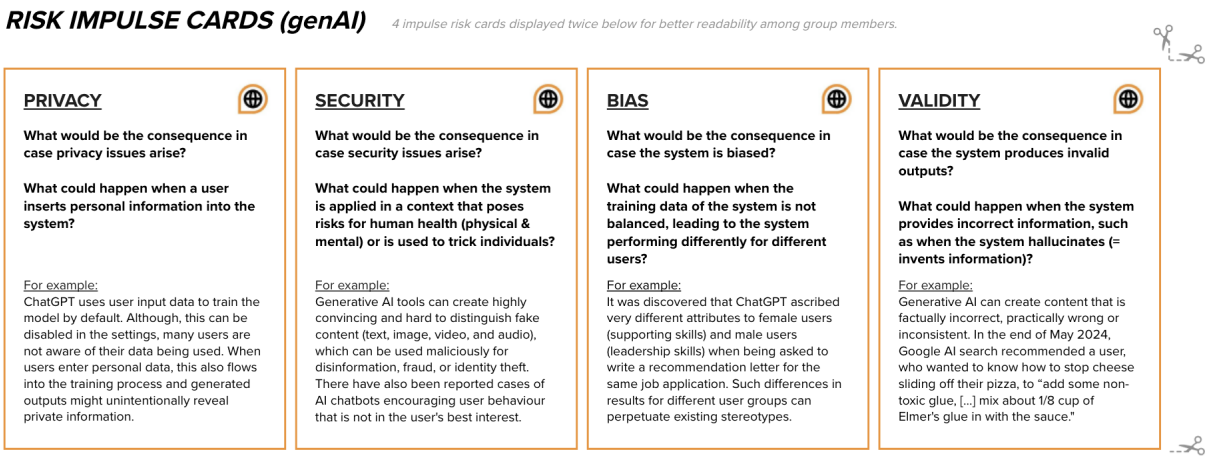

Figure 3: Risk impulse cards in English to be cut out and distributed to participants at the table. (Zoom in for details)

e.g., also including cases when these pilots failed. The scanning and summaries are carried out before the workshop by the researchers that conduct the workshop in the respective city, applying their local specific knowledge. The rationale is to connect to local-specific discourses, paying attention to local-specific parameters of technology adoption or aversion and providing opportunities for the participants to connect with the topics from a more personal point of view. A list of the chosen articles for each topic area and country is accessible in the Appendix A.1.2 in Table 7. After a short period to get familiarized with the topic areas and a joint discussion, the groups each select one topic area to engage with for the rest of their workshop time.

Every topic area comes with a What-if-question that builds the basis for the groups' follow-up processes. What-if-questions are typically utilized in speculative design practice for ideation or finding and exploring problem areas [43] by asking how a certain topic might develop in the future if certain parameters are seen as given [92]. Applying this principle to the three topic areas of the workshop, the following questions are posed for participants to select:

- genAI and education: What if personal genAI learning companions were the new standard in education?
- genAI and public service: What if genAI systems were established in public service contexts?
- genAI and arts, culture & creative industries: What if genAI systems were established in arts, culture, and creative industries?

3.2.3 Consequence mapping and risk impulse cards. The What-if-question is then utilized as the starting impulse for the following consequence mapping (see Figure 2), similar to [45]'s brainstorming of consequences, which they call *creating ripples*. They label their method as "an adapted version of the Futures Wheel, tailored for novice futurists" [45, p.393], which fits perfectly to our work's context. The Futures Wheel [60] represents a visual brainstorming method to explore how consequences of signs of change could develop in the future. Similarly to creating ripples, the objective of our consequence mapping is to jointly brainstorm possible consequences that the What-if-question could lead to, using the form of concentric rings. On the first ring (or ripple), the first direct consequences of the What-if-question are collected, in our case using sticky notes on the worksheets. On the following rings, consequences of the previous consequences are collected. Our worksheets display 4 rings allowing consequences up to the 4th order.

To pay attention to critical perspectives from academic literature on genAI, we adapted the method by adding *risk impulse cards* depicted in Figure 3. The four risk categories were derived from [17, 18, 104, 111, 163]. These are introduced by the group facilitator after a period of time when a saturation in the brainstorming is perceivable. The cards pose critical questions that can be applied to any consequences and describe short examples of how the respective risk has been detected in existing genAI systems in the past. They aim to counterbalance overly optimistic technocratic narratives that participants might have encountered and can complement the chain of consequences emerging from the What-if-question.

3.2.4 Consequence prioritization and risk assessment. After the consequence mapping is completed, groups vote on the consequences they deem most discussion-worthy (3-4 votes per participant depending on group size) and conduct a risk assessment [51, 88]: first, all consequences that receive at least one vote are collected and sorted into negative and positive consequences on the next worksheet. Then, group participants jointly assess the consequences' probability of occurrence and their severity of impact on two coordinate systems (one for risks, one for benefits). This is also in line with [45]'s *desirability analysis*. The method was slightly adapted by adding in-between steps on the axes to make participants' assessments easier (likelihood: unlikely - possible - highly possible; severity of impact: negligible - moderate - significant). Additionally, participants are asked to provide a rationale for their ratings on the worksheet.

3.2.5 Stakeholder mapping. Next, building on their assessment of risks and benefits, groups determine a desirable aim for their topic area and think about involved actors and possible strategies. For this, [82]'s adaption of Greimas' actantial model [65] is applied and further extended. The model, originally a method for narrative

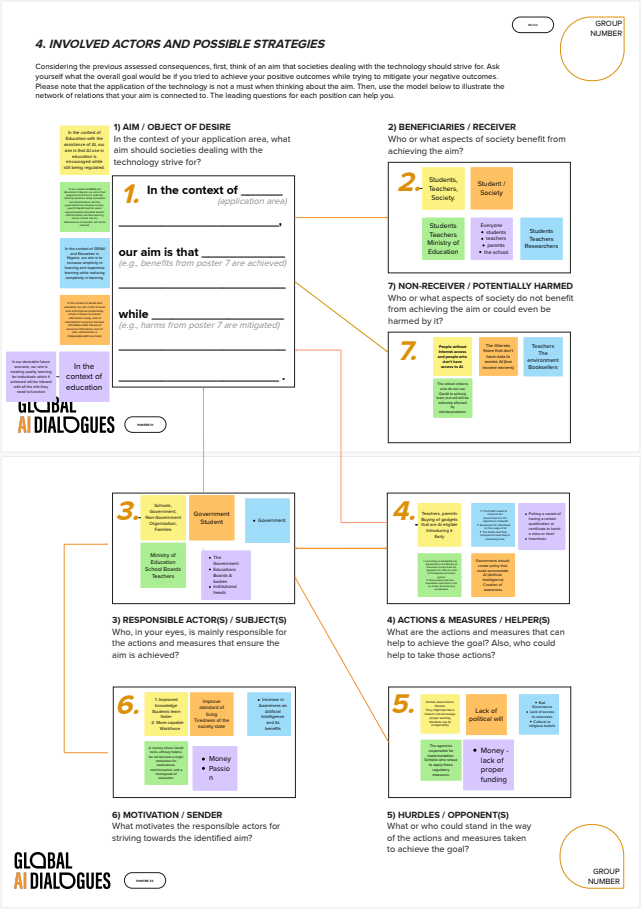

Figure 4: Stakeholder Mapping worksheet with digitized sticky notes from all groups in Nigeria as a preparatory step for the data analysis. One color indicated one group. (Zoom in for details)

analysis to determine relevant actors and their relations within a story, is adapted by [82] to map all relevant stakeholders in the conception of a speculative product or service within a future scenario. For the authors, the method also resembles a simplified version of value network maps [143], stemming from service design. In our workshop process, for this step, groups receive two worksheets (see Figure 4) with a visual map of seven stakeholder positions (the seventh – non-receiver/potentially harmed – was added by the authors of this work). Questions on the worksheet for every stakeholder position (see Appendix A.1.3) guide participants in their process.

3.2.6 Detailing measures for a desirable future scenario. After this, groups engage in the final task of the group work: taking a deep dive into the previously mapped possible measures and actors responsible to achieve the aim, groups conduct a backcasting [132, 133]. Backcasting as an explicitly normative approach aims to explore the implications of a pre-determined desired future status quo and to investigate its feasibility, taking especially questions of policy choice into account [133]. In line with this, participants, first, jointly formulate a future status quo for their topic area as a starting point. In this, the group sharpens a future preferable scenario reflecting the previous discussions and the previously outlined aim. They are aided with a pre-defined sentence structure to fill in the gaps: *In our desirable future scenario, the aim of ... is achieved. Therefore, in this future ... <indicate the consequences for the future>*. Then, the group thinks backward from that scenario and considers measures necessary to reach that future status quo. To aid them in their process, *backcasting impulse cards* are introduced by the facilitators, and depicted in Figure 5. Similar to the previously introduced *risk impulse cards*, these cards exemplify what could happen and pose questions that help participants think about the events leading to their desirable status quo in the future (see Appendix A.1.4 for a detailed description).

With the end of this exercise, the group work is complete and participants gather in the plenary for a concluding discussion of the groups' results.

3.2.7 Quantitative data collection. The survey consists of three parts, which are filled out at three different time points of the dialogue by each participant individually, to document participants' personal perceptions. Participants filled out the first part after welcoming them to the dialogue and before the introduction to AI and genAI. This part took 10 minutes and asked participants about their perceptions of AI (feelings toward AI [155], AI attitudes [64]), and AI in the media (AI interest [96], media consumption of AI-related news [42], portrayal of AI in the media, topic coverage, knowledge of AI and genAI). Participants filled out the second part after joining their discussion groups and before introducing themselves to the group. This survey took 5 minutes and asked about points of contact with genAI and demographics. Participants completed the third part of the survey after concluding the dialogue steps as a reflective exercise, which took 10-15 minutes. They reflected on the dialogue, the use of genAI in education, public service, and arts and culture, rated whether genAI could be part of a desirable future and whether regulation is required, and what institutions they trust most for establishing measures that ensure that genAI is safe [155]. Survey items varied between single-choice and multiple-choice questions, 5-point scales (partially with multiple items constituting one measure), and three open-text questions for feelings, demographics, and feedback.

3.3 Data Analysis

The qualitative data obtained from the dialogues is composed of the groups' worksheets with written documentation (sticky notes or hand-written) and the facilitators' field notes. The researcher teams (NIG: 2 researchers, JP: 3 researchers, GER: 2 researchers) from the country the respective data emerged from were responsible for performing the data analysis. We applied Initial/Open Coding [139] for an initial structuring of our qualitative data. This first coding was enhanced through evaluation coding [139], which we performed on parts of the data we deemed applicable. We then applied focused coding [139] as second cycle coding method to further categorize the data. These codings were conducted through two rounds of coding: First, one researcher from one country started the open coding for the respective country, enhanced by evaluation coding. A second researcher (from the same country) repeated the

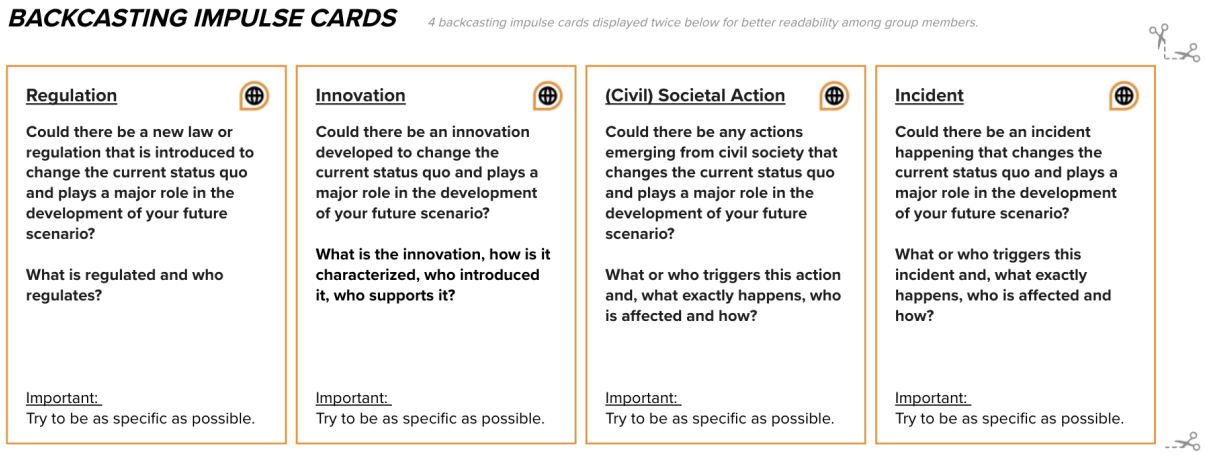

Figure 5: Backcasting impulse cards in English to be cut out and distributed to participants at the table. (Zoom in for details)

process reviewing the codes identified by the first coder [129]. In Japan, both rounds of coding were respectively split up between two researchers. This was followed by joint discussions of identified codes and potential alternate suggestions by the second reviewer. Within all country teams, all disagreements were solved in the joint discussion meeting and did not require external consultation. Next, the same two or three researchers jointly engaged in a round of focused coding (see Figure 7) based on the previously agreed-upon codes. Then, in an online workshop, researchers from all three countries presented their analysis results, and engaged in a joint round of focused coding across all results to merge and rearrange clusters of codes into a final set of codes (see A.4 for final codebook). During this procedure, care was taken that strong country-specific codes, i.e., codes not apparent in other countries were retained. Implications of the codes were jointly discussed. Each country team updated their codes based on the final set of codes, if necessary. The facilitators' field notes were consulted as secondary data sources at all times during the procedure to add more context whenever needed. In the Appendix A.3, we document the data analysis guideline with the detailed analysis steps for the first coding cycle carried out across all countries and how they relate to our reported results. The guideline was distributed to all researchers engaging in the analysis.

To the quantitative data, we apply frequency analysis to all single-choice and multiple-choice questions and report mean and standard deviations for all scale measurements. For scale measurements with multiple items (AI Attitudes and Interest in AI), we calculate a mean index, as suggested by the developers of the respective scale (see Appendix A.5). We calculate ANOVAs or Kruskal-Wallis tests and pairwise comparisons to evaluate statistically significant differences between the three independent samples (Germany, Nigeria, Japan) and report assumption tests and test statistics in Appendix A.7.

3.4 Participant Selection

3.4.1 Participant selection method. Despite the rapid roll-out of genAI applications and many expert discussions around the governance of large language models, we identify a lack of platforms for laypeople to explore and express their opinions on desirable genAI use cases. With the aim of providing such a space for discourse and comparing laypeople perspectives across Nigeria, Japan, and Germany, we decided for a mix of participant selection methods [142] including *targeted recruitment*, *self-selection*, and *purposive sampling* [58, 122]. Steel et al. [142, p.46] argue that "deliberative mini-publics frequently have mixed aims, which can justify hybrid recruitment strategies that reflect distinct senses of representativeness or diversity." The selection methods were implemented as follows: 1) The recruitment process, i.e., the process of informing people of the dialogue, followed the idea of targeted recruitment through different communication channels and community-based engagement, where we contacted communities (inspired by [82, 114]), which then distributed information about the dialogue to their members, allowing interested individuals to pre-register. The purpose of the targeted recruitment approach was to enhance diversity based on gender and age and reach individuals with different levels of AI knowledge while allowing for a breath of the populace to indicate interest in participation [58]. This resulted in a self-selected subset of the interested[4] general population. We chose self-selection as a strategy based on the principle of universality, which seeks to unite volunteer citizens to collectively contribute towards enhancing the future for everyone and which is a participatory ideal of citizen engagement [114]. 2) Inspired by the principles of stratified sampling, we applied purposive sampling with a random component on the set of pre-registrations for each country [142]. We sampled based on the criteria gender, age, and AI knowledge such that each dialogue workshop group had a gender-balanced, age-diverse (across age clusters of 20 years; 'low', 'middle', 'high') and AI knowledge-diverse ('low', 'middle', 'high') composition. From all participants with comparable demographics (age, gender, AI knowledge), we randomly selected as many as required to achieve diversity in each

[4] In his definition of lay stakeholders in the context of participation in governance, Fung highlights the important role of interested members of the public to participate in matters of public concern: "unpaid citizens who have a deep interest in some public concern and thus are willing to invest substantial time and energy to represent and serve those who have similar interests or perspectives but choose not to participate" [58, p.68].

Table 3: Demographics, number of participants, number of groups, and group sizes

country	gender				age								AI knowledge*						education				N		
	female	male	diverse	no answer*	18-24	25-34	35-44	45-54	55-64	65-74	>75	no answer	1	2	3	4	5	no answer	no Bachelor	Bachelor	other	no answer	participants	groups	median size
Nigeria	17	12	-	1	10	9	2	3	4	0	0	2	2	12	12	3	0	1	10	16	2	2	30	5	6
Japan	10	11	2	-	4	4	6	3	3	2	0	1	2	8	10	2	1	-	3	20	-	-	23	4	6
Germany	11	12	-	-	6	4	2	3	1	5	2	0	1	3	12	4	5	-	5	18	-	-	23	5	5

* no answer refers to "prefer not to say"; AI knowledge level items: 1=I don't know anything about "artificial intelligence.", 2=I have a basic understanding of what "artificial intelligence" is, 3=I understand what "artificial intelligence" is and I know some fields of application, 4=I am knowledgeable about "artificial intelligence" and its fields of application, 5=I know a lot about "artificial intelligence" and its fields of application

dialogue group, which we achieved for most criteria for all groups. This form of popular participation can be considered as a "mini-public" where residents intentionally gather in a discrete body to discuss matters of public interest [57] (see Appendix A.2 for details on recruitment and sampling).

3.4.2 Financial compensation and ethics review. Participants received monetary compensation for participation. The amount and format of monetary compensation were decided on by the country teams after consultation with the initiating researchers to ensure fairness across countries: Japan: ¥4000 (3.5h), Nigeria: ₦37500 (6h), Germany: €50 (6h). See Appendix A.2 for details on compensation.

We obtained an ethics approval from one of the cooperating universities for conducting this study, including the specifics of our recruitment procedure, the design of the workshop process and the handling of the results. The other two universities did not require an ethics approval. We followed standard practices for ethical research (including informing participants, obtaining consent) while performing the study and analyzing the data. As part of registration, participants gave informed consent to be part of a study and photo consent.

3.4.3 Final sample. Table 3 reports the demographics, number of participants, number of groups, and median group sizes of the final sample per country.

4 Results

In the following, we report the results of the three dialogues. We begin by describing the sample's AI attitudes, genAI usage, and media perception. We then outline what genAI applications in their respective contexts are considered valuable by participants if certain requirements are met, and what measures should be taken, before summarizing their reflections on genAI after the dialogue.

4.1 Participants' Attitudes Towards AI, Media Perception, and Personal Usage

4.1.1 AI perception and genAI touchpoints. The majority of participants indicate to have rather positive *attitudes towards AI*, with participants from Nigeria reporting the most positive perceptions (NIG: M=4.15, SD=0.62; JP: M=3.95, SD=0.71; GER: M=3.88, SD=0.74; differences not statistically significant; see Appendix A.7.2). Across all countries, participants indicate to be rather *interested in AI*, with highest interest ratings from German and Japanese participants (NIG: M=3.96, SD=0.82; JP: M=4.25, SD=0.82; GER: M=4.26, SD=0.98; differences not statistically significant; see Appendix A.7.2). More specifically, for German and Japanese participants, *curiosity about AI developments* (GER: fully agree 65%, rather agree 22%; JP: fully agree 52%, rather agree 30%) and *general interest in AI* (GER: fully agree 57%, rather agree 35%; JP: fully agree 65%, rather agree 22%) was high overall. Nigerian participants indicated less *curiosity* (fully agree 32%, rather agree 14%) but the highest rating for *general interest* (fully agree 74%, rather agree 7%). Across all countries, most participants have *previously used genAI applications* for generating text (NIG:83%; JP:87%; GER:78%), followed by generating images (NIG:67%; JP:61%; GER:74%), while generating audio (NIG:20%; JP:26%; GER:35%) and video (NIG:17%; JP:9%; GER:17%) received comparatively low ratings. Some participants indicated to have never used any of these before (NIG:7%; JP:9%; GER:22%).

4.1.2 AI in the media. When asked about how AI was portrayed in the media, participants overall indicated a rather positive impression, with participants from Nigeria having statistically significantly more positive ratings than Japanese participants ($\tilde{\chi}^2$=10.19, p<0.01, df=2; see Appendix A.7.4), followed by German participants. When asked in what context(s) AI topics were mainly reported on, German participants indicated a focus on economic topics (e.g., AI in the workplace), while Nigerian and Japanese participants mostly indicated a technical focus (e.g., IT security) in media reporting. Regarding whether participants have specifically heard about *generative* AI in the news, Japanese (96%) respondents reported statistically significantly higher ratings than Nigerian participants (54%; $\tilde{\chi}^2$=9.95, p<0.01, df=2; see Appendix A.7.5; GER: 83%).

4.2 Visions of Desirable Futures Related to genAI and Necessary Requirements

In the following, we outline the analysis of the desirable futures that groups define during the dialogues and what requirements they described as necessary for genAI to create value. Concerning the application contexts, in Germany, two groups discussed the education context, two groups the public service context, and one group the arts and culture context. In Nigeria, all five groups discussed the education context. In Japan, three groups discussed the education context, and one group the public service context. All groups perceived genAI to have a place in their future scenario (see

Q1.1; Table 2), i.e., deliberatively not choosing to omit genAI from their scenario. This is noteworthy as the design of the workshop process explicitly aimed for non-determinism regarding technology application, i.e., leaving space for conceptualizing a future scenario without genAI. Participants' affirming survey responses to the question whether genAI could be part of a desirable future support this result (GER:100%, NIG:96%, JP:96%).

4.2.1 Sensemaking of the AI system in specific contexts. Regarding the question of what should be achieved, the main theme is *making something accessible through AI systems* for all of society, among all groups across countries. In the context of education, this refers to knowledge. In Nigeria, genAI systems are envisioned to be used by learners and teachers to get better outputs and services from the existing educational system regardless of systemic limitations; efficiency in the learning approach; and a service more suitable for whatever knowledge challenges and demands the world of the respective learner requires. In Japan and Germany, the theme is closely linked to personalization, i.e., that education is aimed to become more personalized through the use of genAI chatbots for individual learning fostering individual competencies and, hence, make education more effective for individuals. This is anticipated to be made possible through the system's ability to provide education that is better tailored to individual needs or curiosities and adapt to the pace of learning of respective users. In the context of public services, the theme refers to information, instruction, and advice as well as to genAI-based public service processes. In Japan, the theme is linked again to personalization, which would involve making public services more suited to diverse end-users and more efficient, the latter was also emphasized by German participants. Here, genAI systems are envisioned to be used as intermediaries for citizens' requests regarding public services, facilitating and simplifying public service processes and making, for example, the filing of citizens' requests and related information more accessible. In the context of arts and culture, in Germany, the theme refers to the creation of arts as a form of expression (by breaking down institutional barriers) as well as the consumption of arts (by breaking down monetary barriers and overcoming notions of art representing elitist cultural practice). Here, genAI systems are envisioned to be used as widespread tools for creating artistic content by individuals, who want to engage in creative processes, making tools that are established today and that require specific skill sets obsolete.

German participants speculated that, when striving for and achieving the abovementioned aims in the education context, knowledge would become a public good and the level of education in society would increase, in the long term. In the public service context, it is speculated that in the long term, goal achievement would decrease bias in public service processes, and increase equality in society. In the arts and culture context, it is speculated that in the long term, goal achievement would lead to a democratization of art and culture (referring to both, the creation of art and the consumption of art and cultural expression).

Nigerian participants considered that in the long term, goal achievement would lead to an empowerment of individuals and better scholarship. Participants envisioned end-users to be able to engage with genAI effectively (increased productivity, time-efficiency) in their personal and professional lives. Participants in Japan noted that on the one hand, this tailored approach to education and public services could bring benefits not only to end-users but also to teachers and public employees providing services. In the longer term, this would reduce the burden on such workers, and contribute to greater respect for individuals. On the other hand, there were concerns that uneven implementation or a lack of digital literacy could lead to increased inequality, and so, as will be discussed below, there was awareness of the need to ensure that AI implementation could help to close equity gaps rather than create them.

4.2.2 Technical and societal requirements for the AI system to create societal value. All groups outlined several requirements necessary for an AI system to actually create societal value in the first place. We derived the requirements from the groups' indicated benefits and risks. In Table 4, we summarize all meta-requirements constituted by various societal and/or technical sub-requirements. In total, we identified seven distinct meta-requirements, of which *accessibility*, *education and reflective use*, *safety/robustness* are shared across all countries, *privacy protection* and *governance structures* are common to two countries, and *genAI awareness*, and *ecological awareness* were discussed by one country each. In the following, we present the three main meta-requirements and highlight a country-specific one.

The strongest consensus was observed around the need for *accessibility* of AI systems. The societal requirements were primarily to ensure an adequate level of digital literacy and support. This involved not only ensuring that teachers had sufficient digital literacy to use the systems effectively, but also literacy as an important factor to prevent inequality that may arise between users and non-users of the systems. Other requirements referred to ensuring availability of hardware and digital infrastructure; financial affordability; and preventing the exclusion of individuals. On the technical side, accessibility referred to ensuring the systems are easy to use; easy and cost-efficient to implement; and available 24/7. Linked to the sub-requirement of digital literacy to ensure accessibility is the meta-requirement of *education and reflective use*. This involves the requirements to prevent overreliance on system use and output by ensuring adequate literacy and the maintenance of critical thinking skills; promote a dual path to knowledge that regards genAI solutions as one information source or teaching method amongst others; ensure established educational formats for reflective use; and retain the value of societal goods such as sociality, books or arts. Finally, participants from Nigeria, in particular, highlighted the requirement of responsible AI usage by educators and academics. For *safety/robustness* of the AI systems, there was discussion of technical requirements in the form of the need to ensure quality of output, and particularly, the accuracy and bias-free nature of information generated by AI. Participants addressed the societal requirement of an adequate error and misuse response mechanism. It is noteworthy to highlight that all groups in Nigeria addressed the need for *genAI awareness* by ensuring genAI is used for individual or institutionalized learning, to counterbalance lack of resources, or for individual or corporate work. These requirements were not observed in the dialogues in Japan and Germany.

Table 4: Description of meta-requirements and sub-requirements that are perceived as necessary for genAI systems to create societal value. Numbers in brackets indicate how many groups highlighted the respective meta-requirement.

NIG	JP	GER	Meta-requirement	Description of sub-requirement ([S] denotes societal requirements; [T] denotes technical requirements for genAI system)
X (3/5)	X (3/4)	X (5/5)	Accessibility	[S] ensure level of digital literacy and adequate support (NIG, JP, GER) [S] ensure availability of hardware and digital infrastructure (GER, NIG) [S] ensure (financial) affordability (GER, NIG) [S] prevent exclusion of individuals due to differing abilities / lack of motivation (GER, NIG) [T] ensure systems are easy to use (GER) [T] ensure 24/7 availability of the systems (GER) [T] ensure systems are easy and cost-efficient to implement (NIG)
X (4/5)	X (2/4)	X (3/5)	Education and reflective use	[S] prevent overreliance on system use and output (JP, GER) [S] promote a dual path to knowledge (genAI as one method among other teaching methods) (GER, NIG) [S] ensure established educational formats for reflective use (GER, NIG) [S] retain value of social & cultural goods (e.g., sociality, arts, books) (NIG, JP, GER) [S] encourage responsible AI usage (by teachers and academics) (NIG)
X (1/5)	X (1/4)	X (4/5)	Safety and robustness	[S] implement adequate error and misuse response mechanisms (GER) [T] ensure quality of output, and prevent bias (NIG, JP, GER) [T] ensure open source for testing the system (GER)
X (1/5)		X (3/5)	Privacy protection	[T] ensure data protection measures and eliminate privacy risks (GER, NIG) [T] ensure consent requirement measures (GER)
X (2/5)	X (2/4)		Governance structures	[S] ensure accountability (JP) [S] enable changes to policies if relevant (JP) [S] ensure support for genAI-induced changes (job loss, job creation, intellectual property) (NIG) [S] restrict illegal and unethical genAI usage and set rules for genAI usage in specific domains (academia) (NIG)
X (5/5)			genAI awareness	[S] encourage genAI usage for individual and institutionalized learning/teaching [S] encourage genAI usage for counterbalancing lack of resources [S] encourage genAI usage for individual/corporate work
		X (1/5)	Ecological awareness	[T] ensure energy efficiency

4.3 Measures to Ensure the Requirements for Future genAI to Create Societal Value Are Met and Actors Envisioned to Be Responsible for Carrying Them Out

In the following, we report the results from the analysis of positions from the stakeholder mapping and measures outlined in the backcasting.

4.3.1 What is the motivation to implement the AI system and who profits? In Germany, participant groups discussed three main motivations for their services to be implemented. Participants from the public service and education contexts described *efficiency gains* such as time and cost savings as the main motivators for the AI system to be introduced. *Political interests*, including competition interests or re-election, were mentioned by three groups across all three contexts. Finally, *societal well-being* through the introduction of the AI system, e.g., because it can avoid unequal treatment or improve service processes, was mentioned by an education and a public service participant group. All groups mentioned the service users as the main beneficiaries. Service providers were additionally mentioned by three groups across the education and public service contexts. Four groups mentioned "everyone" or "all citizens", indicating participants' perceived spillover effects of benefits on everyone related to the service.

In Nigeria, participant groups also discussed three main motivations for their services to be implemented. Three groups considered a range of *emotional attitudes towards AI* such as a passion for the technology, or a fear of what its usage might result to as motivation; two groups believed the resulting *efficiency gains*, i.e., rise in productivity ensuing from its usage will likely drive implementation, and two groups considered *direct individual benefits*, e.g., financial income obtainable from the AI system, as key to driving implementation. All groups mentioned the service users, i.e., students and teachers as the main beneficiaries. Institutional actors, i.e., schools and the Ministry of Education, were additionally mentioned by individual groups. Spillover effects benefiting society as a whole were indicated by two groups.

In Japan, all groups focusing on education discussed social influences, particularly *societal well-being*, as primary motivations for implementing AI. This included expectations and hopes, such

Table 5: Description of measures that are perceived as necessary to achieve the outlined aims for a preferable future.

NIG	JP	GER	Measures	Description of measures
X	X	X	Ensure education and conscious societies	– implementation of programs to enhance AI literacy, e.g., through rolling out of educational and informative formats (NIG, JP, GER) – implementation of possibilities for public discourse and participation (NIG, JP, GER) – implementation of measures promoting appropriate attitudes and paradigm shift (NIG, JP)
X	X	X	Fostering technical innovation and best practices	– establishment of flagship projects to showcase best practices (JP, GER) – fostering of system innovation to ensure technical viability, and avoid monopolization (NIG, JP, GER)
X	X	X	Ensure regulation	– implementation of regulations/guidelines governing genAI system (NIG, JP, GER) – implementation of regulations/guidelines governing (/supporting) genAI implementation in societal systems such as schools or public administration (NIG, GER)
X	X	X	Building of infrastructure	– establishment of appropriate infrastructure (NIG, JP, GER)
X		X	Building of area expertise for system implementation and feedback systems	– build expertise in roll-out context (GER, NIG) – implement feedback and monitoring system (GER)
		X	Provision of financial resources	– Ensure sufficient financial resources for infrastructure, innovation, research, and educational programs related to genAI and societal impact

as improvements in well-being and the quality of life for all of humanity. Some groups additionally noted the significance of *political interests*, such as national interest. One group discussed a need to "keep up" with advances overseas, i.e., having a competitive spirit, as a key motivating factor. Additionally, practical needs such as *existing technical limitations or a lack of human resources* were motivators. One group considered researchers and media as potential stakeholders motivating the implementation of AI. All involved groups in Japan were in consensus that the primary beneficiaries of implementation would be service users. In education, these beneficiaries would include students – particularly those with high levels of motivation – faculty and staff. In the public sector, this would include citizens, workers, busy people, as well as minorities who would benefit from greater accessibility facilitated by the implementation of AI. Furthermore, groups discussing education identified diffuse benefits to local communities, as well as to the academic community as researchers were seen to potentially benefit from the implementation of AI.

4.3.2 What measures should be taken to ensure AI systems create societal value and who is responsible for their implementation? In total, participants outlined six clusters of measures to be undertaken, of which four are shared by groups across all countries (see Table 5 for a summary). The first was to *ensure education and a conscious society*. A dominant perspective across the groups was the importance of AI literacy – for adults and for direct stakeholders such as teachers – which would enable people both to effectively use AI and to offset potential harms such as widening inequality. There were calls for public discourse and participation, including by involving laypeople, policymakers, civil society organizations, and the media. There was also recognition of the influence not just of active participation but also more passive appropriate attitudes in society at large. This includes the need to not "make too much of a fuss" and remain level-headed about the potential negatives of AI; to promote maintaining a human-centered perspective that prioritizes respect for human dignity; and to promote a vision of genAI usage based on a literate understanding of opportunities and risks. Other measures included *fostering technical innovation and best practices*, which included the establishment of flagship projects that showcase best practices, as well as innovation to ensure technical viability. This linked to calls for *regulation* to ensure that appropriate guidelines to govern the AI systems were in place. Japanese participants highlighted that this should not stifle innovation. German and Nigerian participants additionally suggested regulations and guidelines governing/supporting genAI implementation in schools or public administrations. The fourth measure put forward by participants from all countries suggests *establishing appropriate infrastructure* for fulfilling the previously raised requirement of accessibility. Lastly, groups in Nigeria and Germany envisioned measures to *build area expertise for system implementation and feedback systems* and, in Germany, to ensure the *provision of financial resources* to support the above-outlined measures of education and research, innovation, and infrastructure.

When analyzing which actors are deemed responsible for these measures through groups' stakeholder mappings, five main themes emerge. All groups across all countries were in consensus that the *government and political actors* were responsible for ensuring appropriate implementation. Participants from Germany often specifically addressed EU policy or international organizations. Four groups in Germany and three groups each in Nigeria and Japan mentioned *area personnel*, referring to actors in the context of deployment, who are deemed responsible for introducing AI systems to this area or carrying out their implementation, e.g., school boards, school management or public administration. Two groups in Germany and three groups in Japan mentioned actors that play a major role in system development, i.e., *researchers and science actors*, and,

industry such as AI companies or device manufacturers. Lastly, two groups each across all countries mentioned *citizens*, mainly as users or their caregivers. Three groups from Japan also mentioned *the media* and *non-profit organizations*.

4.3.3 Who or what could hinder the achievement of the aim and who or what is not benefiting? In Germany, participant groups discussed five main aspects that can hinder the achievement of the goal. *Political interests* and *corporate or financial interests* that may oppose the goal were mentioned by three groups across all three contexts. Three groups from the education and public service contexts identified *non-interested individuals or AI-averse people*, e.g., because of fear or skepticism, as actors who could stand in the way of achieving the goal. *Lack of funding* and *limitations of the technology (software or hardware)* were each mentioned by two groups across all three contexts as hindering factors. Non-beneficiaries were identified to be *individual workers*, i.e., those that might lose their jobs or have less job requests, and *industry players* that previously served the specific purpose of a new AI system. One group mentioned the *environment* to be harmed with increased implementation of genAI services.

In Nigeria, *political interests* were also discussed as a main challenge by four groups, mainly referring to lack of political will to guide transformative processes related to genAI or badly designed political actions. *Non-interested individuals or AI-averse people* were also considered by two groups, mostly referring to individuals that stand in the way of implementation because of fundamental beliefs. *Misuse*, i.e., irresponsible use, and *access challenges*, i.e., from a hardware but also financial point of view, were discussed by two groups. *Lack of funding* was relevant for one group. As non-beneficiaries *excluded individuals/groups* were identified by three groups, referring to people without access due to technical, financial, and knowledge limitations. The *environment* and *individual workers*, such as teachers or booksellers, were named by one group.

In Japan, there were four perceived hurdles. In both contexts (education, public service), there were concerns by three groups that *non-interested individuals or AI-averse people* may pose challenges. Specifically, people, particularly teachers, with conservative mindsets could reject change, partly due to worries that AI may take their jobs. Likewise, there were also concerns that skilled individuals – particularly those threatened by job loss – may object to AI implementation. Additionally, there were concerns by one group that *existing regulations* may pose a hindrance. Furthermore, two groups cited unease over financial interests held by *industry players*, due to oligopolistic tendencies or general misuse. And finally, *technical limitations* were perceived to be a potential barrier by two groups.

There were two stakeholder groups who were perceived as potential non-beneficiaries or harmed by AI implementation. These were common to both contexts (education and public sector). For three groups, there was concern about *excluded individuals/groups*, i.e., people who may be "left behind" (e.g., children without necessary devices, people without the necessary technology due to regional disparities, elderly without technical knowledge). Three groups also stated worries about the impact of implementation on *individual workers*, including teachers who may lose their jobs, or students, faculty, and researchers in higher education. For workers in the public sector, there were similar concerns.

4.4 Participants' Individual Reflections on AI After the Dialogue

After the group dialogues, participants completed the last part of the survey. In the following, we document their responses.

4.4.1 Participants' individual perceptions on genAI as part of a desirable future and on regulation. When asked whether genAI could be part of a desirable future, participants almost exclusively responded affirmatively (GER:100%, NIG:96%, JP:96%). When asked, whether regulatory measures would be needed to ensure a desirable future with AI, participants from Japan (73%) and Germany (68%) to a majority agreed on the need for a combination of legally binding and voluntary regulatory measures. Opinions from participants from Nigeria were split between the need to implement legally binding measures (48%) and a combination of legally binding and voluntary measures (48%). Only one participant from Germany indicated that no regulations would be needed at all, and none of the respondents from other countries selected this option. When asked which institutions they would trust the most in establishing measures that make the use of AI safe, respondents from Germany (74%) and Japan (70%) favored an international AI safety institute run by experts. This was only rated second highest (55%) by Nigerian respondents, while the companies that develop AI were rated highest (72%). The government was rated second highest by respondents in Japan (39%), and third by participants in Germany (52%) and Nigeria (52%). In Germany, civil society organizations, intergovernmental organizations, and independent regulators were each also indicated by 57% of participants. When asked how much participants trusted their government institutions in their country in general, respondents from Nigeria trusted their government statistically significantly less (not at all 23%, very little 70%; $\tilde{\chi}^2$=34.77, p<0.01, df=2; see Appendix A.7.8) than participants from Japan or Germany. German participants were most in favor of the government (somewhat 26%, a lot 61%).

4.4.2 Participants' individual perceptions of genAI in education, public services, and arts, culture and creative industries. When asked how they would evaluate the use of genAI in the context of *education*, respondents across countries indicated a rather positive sentiment (NIG: M=4.38, SD=0.73; JP: M=4.52, SD=0.67; GER: M=4.44, SD=1.04; differences not statistically significant; see Appendix A.7.10). When asked how they would evaluate the use of genAI in the context of *public service*, respondents' positive ratings were again high overall (NIG: M=4.05, SD=0.69; JP: M=4.44, SD=0.73; GER: M=4.33, SD=0.97; differences not statistically significant; see Appendix A.7.10).

While none of the following differences were statistically significant (see Appendix A.7.11), they might, in particular across contexts, provide tendencies of perceptions across countries. For both contexts, education and public services, German respondents perceived less benefit for the society to use genAI (education: M=3.96, SD=0.83; public services: M=3.95, SD=0.59) than Nigerian (education: M=4.30, SD=0.91; public services: M=4.32, SD=0.86) and Japanese (education: M=4.23, SD=0.61; public services: M=4.36, SD=0.73) respondents. In the context of education, Nigerian respondents perceived the

highest personal benefit (M=4.43, SD=0.96) compared to German (M=3.96, SD=1.11) and Japanese (M=4.15, SD=0.88) respondents. In the context of the public services, Japanese respondents perceived the highest personal benefit (M=4.23, SD=0.78), compared to German (M=3.81, SD=0.87) and Nigerian (M=3.71, SD=1.36) respondents. While there is an overall gap between ratings of personal benefit and being affected personally, across both contexts, Nigerian respondents gave the lowest ratings for the implementation affecting them personally (education: M=3.39, SD=1.44; public services: M=3.29, SD=1.45) and Japanese respondents provided the highest ratings (education: M=4.09, SD=0.87; public services: M=4.27, SD=0.63). For the evaluation of genAI in *arts, culture and creative industries*, see Section A.7.9 in the Appendix.

5 Discussion of Results

To discuss the results of this study, we first reflect on the applied method. To do so, we consulted participants' survey ratings after the group dialogues, their written feedback, facilitators' field notes, and our own observations. We then reflect on our results by responding to the research questions, highlighting country-specifics, and derive recommendations for the stakeholders identified by participants.

5.1 Reflection of Method

5.1.1 Participants' reflections. Consulting survey responses, while indicated feelings toward AI remained mostly the same across countries, in Germany and in Nigeria feelings of hopefulness increased slightly after the dialogue (see Figure 10 in the Appendix). When asked whether they feel they have learned something in the course of the dialogue, respondents from Germany (83%) and Japan (91%) mainly indicated to have learned *how other people view AI* (Nigerian rating 63%). Nigerian respondents mainly indicated to have learned *how AI can affect society* (93%), which was rated second highest by Japanese (57%) and German (48%) respondents. Nigerian respondents' ratings for *how does AI work (technically)* (83%) were higher than ratings from German (30%) and Japanese (4%) respondents.

When asked whether they were able to follow the topics that were discussed in the course of the dialogue, respondents' ratings were high overall from Nigerian (M=4.7, SD=0.6) and Japanese (M=4.6, SD=0.5) respondents[5]. When asked about whether they think that laypeople dialogues, such as the one they participated in, can contribute to AI being developed in line with laypeople perspectives, ratings were high overall from Nigerian (M=4.5, SD=0.7) and Japanese (M=4.7, SD=0.6) respondents. When asked whether they enjoyed the dialogue, ratings were high overall, again, with M=4.8, SD=0.4, for Nigerian respondents and M=4.4, SD=0.7, for Japanese respondents.

When asked how much they see their personal perspectives reflected in the group results, participants' ratings were positive overall with Japanese ratings being slightly lower (NIG: M=4.3, SD=0.9; JP:4.0, SD=0.7; GER:4.2, SD=0.7).

5.1.2 Researchers' reflections. When reflecting on the dialogues from the perspectives of the researchers (also consulting facilitators' field notes), the timeframe(s) and the amount of applied methods can be reported as a main subject of discussion. Differences in customs led to the decision to conduct a 3.5h instead of 6h workshop in Japan, which might have affected the depth of discussion of individual topics. However, during the analysis the identified number of themes was not less than in Nigeria or Germany, most likely because the majority of time difference referred to organizational agenda points.[6] Still, we recommend the 6h version for future dialogues, if possible. Given the engaged discussions within participant teams, time limitations were also perceived by some participant groups from Nigeria and Germany. On a different note, the researchers highlight the importance of the short try-out sessions at the beginning of the group work, to create a practical touchpoint with the technology for all participants.

Another crucial element overall for the practical execution of the dialogues was the training of facilitators. Reflecting on our efforts to prevent introducing a moderation bias (see Section 3.1.3), all researchers reported that training sessions were met with high engagement and active participation by facilitators of all country teams. Consulting the documentations of participants' discussions (worksheets and facilitators' field notes) the researchers did not encounter any signs of groups not properly understanding a method or parts of the process. Also, facilitators did not report any problems navigating the workshop process with the groups. This resonates with participants' survey ratings on whether they were able to follow the topics of the dialogue and their enjoyment ratings as described in the previous section. Reflecting on our efforts to prevent individual participants from dominating the group dialogues (see Section 3.2.1), we did not encounter signs of skewed group discussions when consulting the feedback of group facilitators. This also resonates with participants' overall positive survey ratings when asked how much they see their personal perspectives reflected in the group results, as described in the previous section. We also did not encounter any negative feedback in that regard through the survey's open-text feedback section.

5.2 Reflection of Results

5.2.1 RQ1: How do laypeople envision the role of genAI in education, public service, and arts, culture and creative industries in the context of a desirable future? Across all contexts and countries, groups (both reflected through group discussions and individual surveys) **envisioned genAI to be part of a desirable future** (see Q1.1; Table 2). Despite known risks, this is in line with prior perception research, e.g., showing that specific stakeholder groups perceive genAI to make practices more efficient [148], and beneficial by automating menial work [169], or value it as an assistive tool [106]. We contribute to these explorations of desirability perceptions through a cross-national study.

Referring to **participants' envisioned societal value of genAI** (see Q1.2; Table 2), groups' main shared theme was *accessibility of something through genAI*, i.e., to use the technology to enable individuals or societal groups to access something of societal value (knowledge, advice, and processes). This indicates the potential

[5]For the three items in this paragraph, we are not able to report ratings from Germany, as they were not included in German surveys.

[6]In Japan, the timeline differed from the other countries' timeline in the following manner. Organizational matters: no 10 min buffer for starting later and no need for time for room change as everyone was located in the same room (-20 min), one instead of two coffee breaks (-10 min), participants ate lunch during the groups' final presentations and the closing remarks (-60 min), participant compensation handed out after working time (-25 min); Differences in worksheet times: consequence mapping (-15 min), stakeholder mapping (-10 min), backcasting (-10 min).

that participants attribute to genAI cross-nationally, given certain requirements are met. Participants deemed the education context as most discussion-worthy from a societal value perspective (10/14 groups; public sector: 3/14; arts and culture: 1/14). Whereas the context of arts and culture might be perceived by the broad public to have less of a direct and consequential effect than the context of education (also reflected in participants' individual ratings; compare plots A and C in Figure 15), the HCI research community has intensively investigated the perceptions of individuals in the creative industries and practices [30, 85, 89, 106, 125, 145] as well as in education [75, 76, 169]. Little research by the HCI community, but rather from governance scholars [17, 23], exists on genAI and the public sector, which might provide opportunities for future research.

The application of genAI in the education context being deemed the most discussion-worthy subject, was most pronounced in Nigeria, as all five groups chose the education context. This attention might also be grounded in a focus in Nigerian public media on the context of education when reporting specifically on genAI, which was also observable in the researchers' investigation of local reports for the data cards [e.g., 7, 86, 124]. Together with comparatively low (54%) survey ratings of Nigerian participants, whether they have heard specifically about genAI (vs. AI in general), this might indicate a currently less nuanced public reporting (rather on AI in general than specifically genAI and use cases). One role attributed to genAI by Japanese and German participants in their desirable genAI scenarios was the one of a service or content personalizer. For the Japanese context, this relates to a strong discourse around personalization of education [117, 120] as an aim for Japan's digital transformation in the context of Society 5.0 (the Japanese governmental agenda for a future society [26, 118]). The capabilities of genAI-based personalization are being explored by the HCI community and beyond, for instance, for personalized health interventions [113], adaptive support in planing and running meetings [126], or in the context of self-adaptive systems [107]. In the context of education, Leong et al. [103] found AI-driven context personalization to positively affect learning motivation. However, while AI-driven personalization and individualization might improve user experience, these mechanisms require sensitive data raising privacy concerns [10]. Furthermore, research in the field of personalized information services has shown that tensions between users' (perceived) agency and personalization of content arise which might lead to a behavior-intention gap [131].

5.2.2 RQ2: What requirements, and measures and actors do laypeople perceive as relevant for genAI to create societal value? Participant groups discussed **seven requirements** that are necessary for genAI to create value (see Q2.1; Table 2), namely: *accessibility, education and reflective use, safety and robustness, privacy and protection, governance structures, genAI awareness, and ecological awareness.* Furthermore, they identified **six categories of measures** to ensure genAI systems create societal value (see Q2.2; Table 2), namely: *ensuring education and conscious societies, fostering technical innovation and best practices, ensuring regulation, building infrastructure, building area expertise for system implementation and feedback systems, and provision of financial resources.*

Accessibility: The requirement of *accessibility* to achieve the aim that genAI provides access to knowledge, advice, and procedures, was shared across all countries, however, the notions of accessibility to genAI differed across the country. In Japan and Germany, the focus was on ensuring users were equipped with digital literacy to effectively use the systems. In particular, among Japanese participants, there was a lot of discussion about concerns regarding inequality. This perspective of inequality was more prevalent than the perspective of bias, and has been noticed in other contexts of AI application in Japan as well [94]. It might be possible to understand this concern about inequality as an extension of the *democratization of AI* – which in Japan seems to be conceptualized more as ensuring that everyone is able to use AI. Related but different, in Nigeria, the notion of accessibility referred to bringing genAI to the people by keeping the costs of accessing genAI tools affordable, reducing internet connectivity issues, reducing the costs of introducing AI into the educational system, and ensuring that teachers have the appropriate knowledge to teach with and about genAI. This reflects what Zlotnikova and Hlomani [171] observe for the threat of expanding the already existing digital divide in the African context due to infrastructure disparities and access costs. Prior research has differentiated two types of digital divide: The first one refers to the above-described lack of access of individuals to genAI [145]. Our study also reflected the second concept of divide referring to varying acceptance levels [145]. Participants expressed concerns that non-interested individuals or AI-averse people might not accept the system and block its deployment. Our findings highlight how these notions of divide were expressed differently in the three countries. Resource limitations, including knowledge and infrastructure, are a historically known issue [39, 44], and authors have cautioned that digital inequity and divide will widen [44], emphasizing the importance of the outlined requirements and measures. To mitigate this, our participants across all countries identified the need to implement measures to *build infrastructure* and *ensure education.* The latter had been called for by various authors across studied domains to prevent broadening a digital divide [145, 148].

Reflective use and awareness: Closely related to the sub-theme of knowledge as a barrier is the requirement of *education and reflective use* that was strongly emphasized in discussions in all countries. While the educational aspect of raising accessibility referred to teaching basic skills to be able to use the systems, this sub-theme aims at establishing a deeper understanding of systems' capabilities to foster reflective use and prevent overreliance. Prior research on the implications of genAI in education and UX-design has similarly highlighted the necessity of being able to assess the accuracy, quality, and originality of genAI results [6, 106, 148]. Even more foundational, only Nigerian participants outlined the requirement of fostering/promoting *genAI awareness.* Value can only be created through genAI, if the population is aware of genAI, and knows how to use it responsibly, and for what. This mirrors other studies' observations in the African context. Adarkwah et al.'s research [4], that was identified as the only study available in the African context on genAI in education [171], found that in Ghana academics had limited knowledge about genAI, but were enthusiastic about ChatGPT and AI. Like our participants, the authors call for educators and policymakers to promote technological awareness [4].

Environmental awareness and robustness: Only one participant group in Germany and one in Nigeria discussed potential harms to the environment. It appears that there is limited awareness of the environmental burden of genAI [33] and/or this issue is not at the forefront of participants' minds. Indeed, the environmental sustainability of AI, in general, is a novel topic, which has not been sufficiently addressed in the European Union's AI Act [8, 21, 74, 162]. Additionally, the specific topic of disinformation through genAI [91] was not explicitly mentioned. Rather misinformation received attention in the context of participants' explicit requirement of genAI systems to produce valid output and prevent bias in the results. The expectation that service tool outputs are generally correct is countered by experiences of genAI outputs being neither completely accurate nor reliable yet [106, 148], highlighting again the requirement of reflective use.

The role of governments and regulation: All groups across all countries discussed political actors as a main responsible stakeholder. Similarly, all participants across all countries indicated the need for regulation in their individual ratings. For the German context, we observed the strongest focus on the theme of regulation by governments, i.e., participants discussed this theme as a measure (both towards AI systems and public institutions) the most during the dialogues. This may reflect recent regulatory developments in the European context, where the General Data Protection Regulation [50] and the Artificial Intelligence Act (AI Act) [51] were adopted in 2016 and 2024, respectively. They legitimize regulation as a possible measure to guide technology development. Governmental bodies as a legitimate actor for establishing measures to ensure genAI safety were rated comparatively high among German participants (60%; NIG:52%; JP:38%). This is supported by comparatively high trust ratings towards governmental institutions (DE: a lot 60%). While our participants perceived the government as the main responsible actor and highlighted that spaces for dialogue and exchange with citizens and civil society need to be created, prior research also suggested that technology experts, researchers, policymakers, and area personnel should work together to understand how genAI could be used constructively and safely [13, 169]. Others highlight the responsibility of corporate providers to ensure safe usage through guardrails and by engaging other stakeholders in the application process [76].

5.3 Recommendations

Based on the results from this study, we can summarize recommendations from participants on various levels, addressing the five responsible actors identified by participants. As a cross-national research team, we deliberatively decided to jointly formulate recommendations applicable cross-nationally. This is, on the one hand, motivated by the substantial overlap we see in participants' perceptions of necessary requirements and measures for genAI to create societal value in all three countries. On the other hand, we want to draw attention to the fact that the major companies currently offering the most widespread genAI tools operate from a few countries in the Global North. From the researchers' perspectives, these companies should take responsibility for the implications of the deployment worldwide and ensure they are not widening the digital divide. Taken together, here, we jointly propose one set of recommendations, emphasizing that key stakeholders around genAI operate internationally and many local stakeholders have experienced similar fundamental issues. Concluding this section, we spotlight local-specific expressions of these recommendations from the individual countries, based on participants' perspectives.

To AI developers and industry: When developing genAI systems, it is essential to respect inclusivity from the beginning and refrain from building systems primarily for higher-skilled individuals with ample resources. Specifically, this refers to interfaces that are easy to navigate, but also to system designs that can run on low-tech devices and do not require many resources (data amount, speed, energy) to be accessible to users at any time. Further, genAI systems should only be released if their outputs are of high quality, respecting individual's privacy. To test the systems, open-source code should be released or systems be tested in sandboxes (特区). Models must only be trained on data, for which data owners have given explicit and informed consent, without exceptions. Finally, to ensure the accessibility of genAI to all people, the tools must remain financially affordable.

To researchers and science actors: Societies require genAI flagship projects that manage to bridge the socio-technical gap and showcase the societal value of genAI in specific use cases.

To area personnel / intermediaries (e.g., educators, administration): These actors should promote awareness of the use of genAI for institutionalized learning and teaching, for counterbalancing lack of resources, and for individual work. This promotion of genAI awareness must be accompanied by providing training through established educational formats fostering reflective and responsible use, promoting a dual path to knowledge where genAI serves as one among many methods, while preventing overreliance on system use and outputs.

To governments and political actors: To ensure adequate support and education, and the use of genAI by conscious societies, programs to enhance AI literacy must be implemented. Also, possibilities for public discourse and participation must be implemented to allow different stakeholders, explicitly including laypeople, to share their views. Further, genAI industry players must not become further entrenched as monopolies to prevent one-dimensional development, which may hinder innovation and create power imbalances potentially decreasing accessibility. Adaptable regulations and guidelines must be implemented to govern illegal or unethical genAI systems and to restrict or support societal systems such as schools or public administration to deploy genAI for their purposes. Similarly, societies must be supported during periods of rapid change, e.g., job market impact caused by genAI. Societal support can also be realized through providing guidance and a vision of how genAI should be used. Finally, governments must ensure sufficient financial resources for infrastructure, innovation, research, and educational programs related to genAI and societal impact.

To users and all laypeople: Taking up the topic of awareness, it is relevant to emphasize that both users and non-users should not shy away from remaining curious and, even if not using, engaging with genAI. The commitment to a reflective understanding of opportunities and risks ensures a non-agitated exploration of genAI, whereby responsible use must be ensured.

To all stakeholders: All stakeholders must ensure that capacities are built for the roll-out of genAI in their specific context and

that feedback and monitoring systems are in place to ensure rapid response mechanisms. Also, accountability must be ensured. Appropriate infrastructure contributing to the accessibility of genAI systems must be ensured on different levels, such as the availability of hardware and internet, e.g., in schools, or compatible software.

Local-specific expressions of recommendations: Regarding industry, Nigerian participants emphasized the importance of bridging the digital divide by providing systems that are easy to learn and use and run on low-data connections. Japanese participants highlighted companies should avoid the monopolization of information and provide laypeople opportunities such as workshops to learn from experts. German participants emphasized the need for industry to ensure privacy protection and informed consent. Japanese participants requested that researchers should provide high-quality educational content, also for life-long learning. German participants recommended researchers implement best practices and positive use cases, as well as models based on European values that can also boost the acceptance of genAI by the public. They also cautioned that personnel using and disseminating genAI in their contexts must gain relevant expertise and capacities. Nigerian participants suggested the government could foster the development of its own genAI tools for easier and regulated use to curb data breaches or misinformation. In Japan, the government and political actors were called on to create standardized guidelines about education on genAI (rather than regulations), create sandboxes for testing, and close the digital divide, also ensuring that everyone has access to digital devices. In Germany, there were rather calls for legally binding regulation of genAI development and deployment, as well as calls for supporting public institutions to implement genAI.

Our results, including the recommendations derived from participants' discussions, contribute to filling the research gap outlined in Section 2.3 by describing the societal value that people can attribute to genAI, i.e., achieving accessibility through genAI. Our findings highlight general and country-specific needs that participants perceived as necessary, in order for genAI to generate this societal value. Instead of merely focusing on the technical development of genAI systems, our results show that it is very important to develop and implement educational formats that accompany the systems' roll-outs, also taking into account local-specific parameters like demographics and educational infrastructure. Exploring such adequate formats should be part of HCI and industry research agendas. Also, paying attention to differing technical infrastructures across countries, it is vital to think about more data-efficient and power-efficient systems. This way, development and deployment of the systems can move beyond building on expectations shaped by prerequisites of the Global North.

5.4 Future Research, Limitations, and Positionality

Future work should replicate this study in additional places across the world. The authors encourage utilizing the framework to host dialogues with laypeople also on different AI technologies. One limitation of conducting dialogues represents the associated needed budget for participant compensation, food, drinks, and venue.

Reflecting on our methodological approach and analyzing collected data, some limitations should be highlighted. While all research teams applied the same stratified sampling criteria and tried to ensure sample heterogeneity in demographics through targeted sampling, the three samples in the three countries are inevitably different from each other given different age structures, university quotas, and also factors such as familiarity and openness to participate in dialogues. Our priority was to apply the same sampling criteria but achieve a sample that resembles the country. We acknowledge the sample turned out to be rather educated.

Finally, we acknowledge our positionality relative to this study. We established a cross-national research, with researchers from Nigeria, Japan, and Germany. We had at least two researchers from each country manually code and interpret the collected data from the respective country. The team was multi-gender and multidisciplinary. It represents mathematics computer sciences, political science, science and technology studies, human-computer interaction, and privacy economics. The makeup of this research team reduced the likelihood of bias arising from data interpretations that are specific to a particular country or academic discipline.

6 Conclusion

Concluding, our study presents cross-national perspectives on the valuable use of genAI. It is noteworthy, that while our data shows different experiences with genAI, different exposure to genAI through media, and different starting points to genAI usage across the three countries, the potential value that is seen in genAI systems is shared by laypeople across all three countries. The same applies to the majority of identified requirements for genAI to provide societal value and the measures to achieve this.

In summary, addressing our two research questions: Participants perceived genAI as an enabling technology that can make – if certain requirements are met – valuable goods at the center of our three application contexts more accessible (here: knowledge, public service processes, arts & culture). Hence, genAI systems play a legitimate role in participants' envisioned desirable futures across our three application contexts, along with mindful regulation, technical robustness, and a knowledgeable population that has broad access to the technology. Coming back to the socio-technical gap and the question that Fiesler [54] poses in her reply to Google's *Dear Sydney*, i.e., *what do people want to do, or are willing to do with genAI*, the answer our participants gave is, *a lot*, if their requirements and needs are properly addressed. With our study, we hope to help narrow the gap between where AI development is (partly) heading and what is perceived by laypeople to actually create societal value.

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A Appendix

A.1 Details on Dialogue Methods

A.1.1 Description of facilitator role from the facilitation guide. The group supporters have the role to support the groups in their dialogue throughout the entire workshop. It is important that they do not participate in the group discussions themselves but rather provide a soft guidance and observance of the processes. The main tasks are:

(1) to support the group in the workshop processes, meaning, to explain the worksheets and the methods/procedures.
(2) to observe the groups and to quietly take notes of the participants' dialogues.

The purposes of the two tasks are:

- to ensure that the groups can properly navigate through the workshop process and every group member understands the procedures correctly.
- to ensure that the arguments put forward by participants are documented on post-its or on the worksheets. This includes also ensuring that post-its are not moved from one worksheet to another, but instead re-written or summarized on the new poster. Thereby, we can guarantee that the group dialogues are best documented and can be analyzed afterwards.
- to take note of the "why", i.e., why do participants argue in a certain manner or why have participants assessed a specific consequence in a certain manner. The reason for documenting the "why" is that, in group processes, often only the result of a brief dialogue is written down, not the reasoning that led to that result. This would likely slow down the group process. Therefore, documenting the "why" becomes the central purpose of the note-taking task of the group supporter.

In general, the group supporter should note that this is a dialogue. This means that technical knowledge levels of participants are not decisive for participation. Instead, the distinct perspectives of the individual participants and experiences should be at the center of the dialogue.

A.1.2 Data Cards. Figure 6 presents an example of a data card worksheet from the dialogue in Japan. Below each data card with the text description displayed in Table 7, a What-if question was given. The What-if questions for each context are printed in Table 6. See Section 3.2.2 in the main text for further description of the data cards and What-if questions.

Table 6: What-if Questions for each context

	education	public service	arts and culture
What if?	What if personal genAI learning companions were the new standard in education?	What if genAI systems were established in public service contexts?	What if genAI systems were established in arts, culture, and creative industries?

Table 7 presents the texts of each data card (translated into English) for each context and country. We provide the sources of

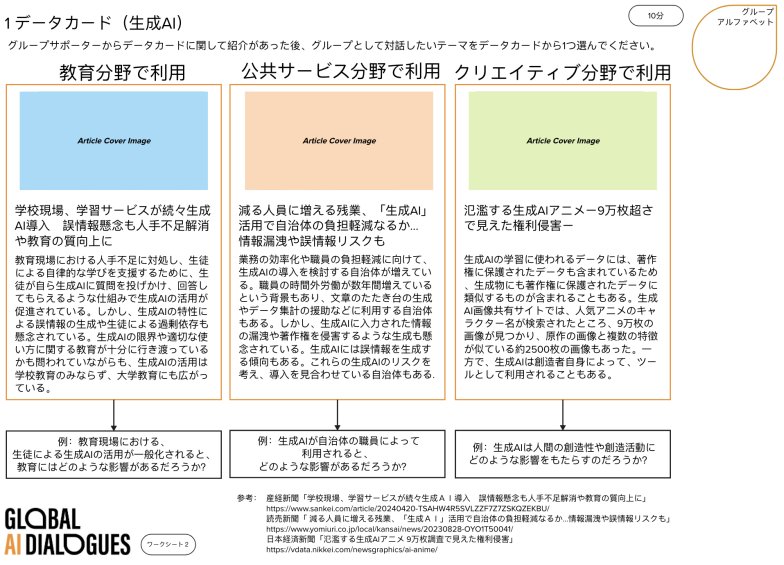

Figure 6: Example of a worksheet with data cards from the workshop in Tokyo. Each context (from left to right: education, public service & arts and culture) is displayed through one card. Cards include a teaser image (cover image of the news articles), a headline, and a short description. Each card points at a respective *What if-Question* at the bottom.

respective news reports from each country that were also provided on the data card worksheets. The cards provide spotlights into the local discourses for the participants to connect to. Hence, they do not cover the same aspects when compared cross-nationally. However, together with the impulse talks at the beginning of the workshop and other informational and tryout material provided onsite, participants were exposed to positive and critical perspectives on the technology applied in the three contexts. It has to be noted, that differences in length are sometimes grounded in translations (e.g., Japanese to English). Effects of different lengths of text on the number of groups choosing respective cards could not be perceived; e.g., Arts & Culture had the longest text of all data cards, while in Japan it was the shortest, however, neither were chosen by participants. Possible effects of differing text lengths were also mitigated by facilitators' verbal introductions to the cards' content.

Sources Nigeria: [EDUCATION] Punch Nigeria - *Experts canvass adoption of AI in education*[7] & Business Day Nigeria - *Nigerian classes struggle with basic tech amid AI age*[8] [PUBLIC SERVICE] Business Post Nigeria - *Salesforce Introduces Tool to Boost Government Service Delivery*[9] & Reuters - *New York City defends AI chatbot that advised entrepreneurs to break laws*;[10] [ARTS & CULTURE] TRT Afrika - *How Nigerian producer embraced AI for Afrobeats*[11] &

[7] https://punchng.com/experts-canvass-adoption-of-ai-in-education/?amp
[8] https://businessday.ng/news/article/nigerian-classes-struggle-with-basic-tech-amid-ai-age/?amp
[9] https://businesspost.ng/general/salesforce-introduces-tool-to-boost-government-service-delivery/
[10] https://www.reuters.com/technology/new-york-city-defends-ai-chatbot-that-advised-entrepreneurs-break-laws-2024-04-04/
[11] https://trtafrika.com/lifestyle/how-nigerian-producer-embraced-ai-for-afrobeats-14385099

Table 7: Data Card Text for each country and each context

	education	public service	arts and culture
NIG	**Experts in educational technology have called for the need to adopt AI in the Nigerian education system, but Nigeria still struggles to leverage basic technologies to provide education to many learners, including children in underserved communities.** With genAI, teachers and learners can, e.g., create learning content in the form of videos, audios or texts and even in the form of flashcards. This enables students to select their preferred learning approaches. However, several challenges must be addressed before genAI technology can fully realise its potential in increasing access to educational materials. Firstly, a favourable environment for broadband accessibility must be created before AI and genAI can be used for education, for example for those who cannot attend traditional classrooms.	**Service Agent Chatbot introduced to Boost Government Service in Nigeria – New York's MyCity chatbot shows what can go wrong.** The new tool for public services in Nigeria uses generative AI to summarize vast amounts of data to help public service workers generate case reports and summaries in their workflows. It also deploys conversational AI to transcribe calls and helps workers document case interactions by automatically collecting data and summarizing important insights from various sources, like calendar events, contacts, or emails. In the city of New York, USA, the city's new AI chatbot showed what can go wrong with these tools implemented for public services: It wrongly advised that employers could take a cut of their workers' tips, and that there were no regulations requiring bosses to give notice of employees' schedule changes.	**Nigerian music producer says genAI helped him to reduce costs and time to produce a nine-track album, however, concerns regarding its negative impact on creative industries continue to prevail.** "It (AI) doesn't have to replace what we have. It gives people a new experience ... and that's how I believe AI is really going to shake things," the musician told Reuters news agency. In the past, it would have taken him thousands of dollars and up to three months to compose the tracks, recruit the musicians, record the performances, knock them into shape in a traditional studio and get them out to fans. This album took about three days and $500. However, concerns regarding the negative impact of genAI, e.g., in the Nigerian film industry continue to prevail. Such concerns include the threat to the work of writers and actors and the unauthorized use of name, image and likeness (NIL) rights. This is what led to the highly publicized strikes in the United States by the Writers Guild of America and the Screen Actors Guild and the American Federation of Television and Radio Artists.
JP	**Schools and learning services are introducing AI to solve manpower shortage and improve the quality of education, despite concerns about misinformation.** To cope with the shortage of manpower in the educational field and to support autonomous learning by students, the use of generative AI is being promoted through a system in which students can ask questions to the generative AI and have it answer them. However, there are concerns about the generation of erroneous information due to the characteristics of generative AI and over-reliance on it by students. While it is questionable whether there is sufficient education on the limitations and appropriate use of generative AI, the use of generative AI is spreading not only to school education but also to university education.	**Reduced Personnel and Increased Overtime: Will the Use of "Generation AI" Reduce the Burden on Local Governments...?** An increasing number of municipalities are considering the introduction of generative AI to improve operational efficiency and reduce the burden on staff. Against the backdrop of several years of increased overtime work by staff, some municipalities are using the system to generate text and assist in data tabulation. However, there are also concerns about the leakage of information entered into the generating AI system and the generation of information that infringes on copyrights. Generative AIs also have a tendency to generate erroneous information. Considering these risks, some local governments have decided not to introduce the system.	**Over 90,000 copies of AI animations flood the market.** Because the data used to train generative AI includes copyrighted data, the generated products may also contain similarities to copyrighted data. On a generative AI image-sharing website, a search for the names of popular anime characters turned up 90,000 images, some 2,500 of which resembled multiple features of the original images. On the other hand, generative AI is sometimes used as a tool by the creators themselves.
GER	**ChatGPT & Co could change exams at universities - university uses AI learning assistants** In view of the development of programs such as ChatGPT, some students will have to adapt to other forms of examination in the future. "The oral exam will have to play a stronger role again," said the Deputy Chair of the State Presidents' Conference. However, a ban is "completely the wrong approach". At a private international university based in Germany, students already have access to an AI learning assistant developed by the university. According to the university, this provides answers to individual questions on exam-relevant learning material and adapts to the students' learning rhythm. The AI also records the students' learning progress.	**Instead of call centers: Chatbots for citizen communication** Artificial intelligence could be a solution to the staff shortage in the public sector, according to a study. For example, chatbots could take over around half of the requests in communication with citizens that previously had to be handled by a call center. The authors also cite the generation of summaries, the automation of change requests and the creation of new content as well as software development as further fields for the use of AI.	**Nightshade: Poison AI models, protect your own works** AI systems such as image generators have been trained with freely accessible material from the Internet. Many artists believe this infringes their copyright. Now there is a tool with which they can not only protect themselves but even harm the AI models. Nightshade alters works so that they are unrecognizable to the human eye. In the training data, however, this potentially turns a cat into a dog or a cow into a wallet.

Lexology - *Artificial Intelligence & the Nigerian Film and TV Industry.*[12]

Sources Japan: [EDUCATION] The Sankei Shimbun - 学校現場、学習サービスが続々生成ＡＩ導入| 誤情報懸念も人手不足解消や教育の質向上に;[13] [PUBLIC SERVICE] The Yomiuri Shimbun - 減る人員に増える残業、「生成ＡＩ」活用で自治体の負担軽減なるか…情報漏洩や誤情報リスクも;[14] [ARTS & CULTURE] Nihon Keizai Shimbun - 氾濫する生成AIアニメ9万枚調査で見えた権利侵害;[15]

Sources Germany: [EDUCATION] Süddeutsche Zeitung - *ChatGPT und Co könnten Prüfungen an Hochschulen verändern*;[16] [PUBLIC SERVICE] Golem - *KI könnte im öffentlichen Dienst 165.000 Menschen ersetzen*;[17] [ARTS & CULTURE] Heise Online - *Nightshade: KI-Modelle vergiften, eigene Werke schützen*;[18]

[12]https://www.lexology.com/library/detail.aspx?g=58f949ed-bb4c-4404-ae7f-7cf59717a50a
[13]https://www.sankei.com/article/20240420-TSAHW4R5SVLZZF7Z7ZSKQZEKBU/
[14]https://www.yomiuri.co.jp/local/kansai/news/20230828-OYO1T50041/
[15]https://vdata.nikkei.com/newsgraphics/ai-anime/
[16]https://www.sueddeutsche.de/bildung/kuenstliche-intelligenz-chatgpt-und-co-koennten-pruefungen-an-hochschulen-veraendern-dpa.urn-newsml-dpa-com-20090101-240407-99-588238
[17]https://www.golem.de/news/mckinsey-studie-ki-koennte-im-oeffentlichen-dienst-165-000-menschen-ersetzen-2407-187049.html
[18]https://www.heise.de/news/Nightshade-KI-Modelle-vergiften-eigene-Werke-schuetzen-9604398.html

A.1.3 Stakeholder mapping - Stakeholder positions and related questions.

(1) AIM / OBJECT OF DESIRE: In the context of your application area, what aim should societies dealing with the technology strive for? (For this position, a sentence structure is provided for groups to fill in the gaps: *In the context of <application area> ..., our aim is that <e.g., benefits from previous poster are achieved> ..., while, <e.g., harms from previous poster are mitigated> ...*)
(2) BENEFICIARIES / RECEIVER: Who or what aspects of society benefit from achieving the aim?
(3) RESPONSIBLE ACTOR(S) / SUBJECT(S): Who, in your eyes, is mainly responsible for the actions and measures that ensure the aim is achieved?
(4) ACTIONS & MEASURES / HELPER(S): What are the actions and measures that can help to achieve the goal? Also, who could help to take those actions?
(5) HURDLES / OPPONENT(S): What or who could stand in the way of the actions and measures taken to achieve the goal?
(6) MOTIVATION / SENDER: What motivates the responsible actors for striving towards the identified aim?
(7) NON-RECEIVER / POTENTIALLY HARMED: Who or what aspects of society do not benefit from achieving the aim or could even be harmed by it?

A.1.4 Backcasting impulse cards.

- Regulation: Could there be a new law or regulation that is introduced to change the current status quo and plays a major role in the development of your future scenario? What is regulated and who regulates?
- Innovation: Could there be an innovation developed to change the current status quo and plays a major role in the development of your future scenario? What is the innovation, how is it characterized, who introduced it, who supports it?
- (Civil) Societal Action: Could there be any actions emerging from civil society that changes the current status quo and plays a major role in the development of your future scenario? What or who triggers this action and, what exactly happens, who is affected and how?
- Incident: Could there be an incident happening that changes the current status quo and plays a major role in the development of your future scenario? What or who triggers this incident and, what exactly happens, who is affected and how?

A.2 Details on Participant Outreach and Compensation

Outreach to interested lay stakeholders. The recruitment process, i.e., the process of informing lay stakeholders of the dialogue, followed the idea of community-based recruitment, where we contacted communities who then distributed the information on the dialogue to their community members: In all countries, we communicated the dialogue via the communication channels of the three cooperating universities (e.g., email lists, LinkedIn, e-flyers and printed posters); In Germany, we additionally contacted neighborhood centers, senior citizens' representatives of different neighborhoods, three different communities focusing on social entrepreneurship, AI and sustainability, distributed flyers and posters at technology festivals and cafes, advertised it via Instagram. In Japan, the dialogue was additionally advertised via the mailing list of the Japanese publisher Nikkei BP. In Nigeria, the dialogue was additionally advertised through the communication channels of the facilitators. Reports from participants about having learned of the dialogue from acquaintances, family members, or other e-mail lists, indicated that the recruitment strategy yielded participants learning about the dialogue via different channels. The dialogue was specifically advertised as *dialogue* with elements of a deliberation, meaning, information was provided regarding the definition of a dialogue in contrast to a debate [see 122, p.11], the relevance of participants' opinions was highlighted, and the nature of the dialogue being an international format with other dialogues in Lagos, Tokyo and Munich was pointed out.

A registration process (similar to [114] or [82]) was utilized to collect participants' pre-registrations. In all countries, a pre-registration website provided all initial information on the dialogue (e.g., information on the dialogue, date and time). After the closing of the pre-registration period (two to three weeks), the country teams performed the sampling based on the criteria gender, age and AI-knowledge levels from all individuals who indicated interest through pre-registration. These participants received an formal invitation including one document providing information on the dialogue (summarizing information provided prior to the registration page), asking for final participation confirmation and for formal consent for their participation in a research study as part of the dialogue. Declined spots were offered to other pre-registered participants with similar demographics. After confirmation, the participants received informational material introducing participants to generative AI, its use cases and risks and benefits. This document was primarily developed by two researchers of the team, feedbacked by the other team members, as well as by one project-external professor, two senior researchers, and a lead scientist. In all countries, the same material to inform participants about the dialogue was used and translated into the local languages.

Details on participant compensation. Participants received monetary compensation for participation. The amount and format of monetary compensation were decided on by the country teams after consultation with the initiating researchers to ensure fairness across countries. This approach ensured that while the amounts differed in absolute terms, they were considered adequate and comparable based on the judgments of the researchers from the country where the dialogue took place. Our conversations on adequate compensation were grounded in comparisons with comparable workshop or discussion formats, see Table 8. It must be noted that many citizen engagement projects do not report whether they have financially compensated participants [e.g., 25, 114, 153], or don't share the exact amount [2, 169]. Others explicitly state not to pay participants due to local customs [115], which highlights how compensation depends on local specifics. The interpretations of absolute amounts of financial compensations of citizen engagement examples are only valuable if taking local costs into account; additionally, incentives for longer formats should be higher than

Table 8: Research on participant compensation in citizen engagement/dialogue fora.

dialogue	duration	payment	source	note
Citizen jury on AI and explainability	5 consecutive days	£500	[35]	£100/day; Coventry and Manchester; people might have had higher overall costs due to the need to take leave
Citizen panel on virtual worlds	3 sessions of 3 days	€90/day	[47]	European Citizen
Citizen jury on the use of AI in healthcare in Australia	18 consecutive days	AU $1015	[28]	AU $56.38/day; Australia; asynchronous and synchronous sessions; people might have had higher overall costs due to the need to take leave
The Citizens' Biometrics Council	60 hours	not public	[2]	participants from the Bristol and Manchester areas; took place on Saturdays and Sundays across six weekends; The report mentions regarding compensation: "We paid participants incentives at industry best-practice rates for each workshop they attended, to remunerate them for their time and contributions to the Council." [2, p.15]
The UTS "EdTech Ethics" Deliberative Democracy Consultation	17h across 5 sessions (7 weeks)	unknown	[25]	Sydney
We the Internet - Ireland	16h (one weekend)	unknown	[114]	Ireland
Public assembly on high-risk AI	8 days	US $1200	[11]	USA; virtual deliberation
Parents' and students' perception of genAI for elementary school literacy	2h (on 1 day)	US $25	[76]	Southern California, participants from upper-middle income class; compensation per family consisting of a parent and a child
Co-design Workshops in South Africa	5.5h - 6.5h	not specified	[153]	4 sites: KZN, Soweto, Limpopo, Western Cape

for shorter formats to ensure participants are returning. Taking the reported compensations into account our compensation is in the mid-range. We argue that the country teams possessed the best knowledge to define a compensation amount that is comparable to the one of the other countries and fair. In Germany, participants received 50 Euro (=$54.3)[19] for a 6h dialogue; in Nigeria, participants received 37500 Naira (=$23.6) for a 6h dialogue; in Japan, participants received 4000 Yen (=$27.7) for a 3.5h dialogue. In all countries, lunch, drinks and snacks were provided to participants. The decision to financially compensate participants is based on the assumption that remuneration lowers barriers to participation, because participants can cover costs emerging from taking time to participate [122]. We acknowledge that financial compensation is not lowering barriers for all groups in society.

We are not aware that the compensation influenced participants in one or the other way. As described in Section 3.4.1, AI knowledge was not a criterion that we aimed to achieve representativeness. We rather aimed at a distribution that allowed for diversity in AI knowledge levels in each discussion group. Hence, by design, our final sample is not representative of AI knowledge levels. However, the differences in AI knowledge levels between German and Japanese participants conform the findings of a study by the UK government of 10163 citizens across 9 countries such that German participants have higher AI knowledge compared to Japanese participants [155].

[19]Conversion rates are based on the date of the dialogue in the respective countries.

A.3 Data Analysis Guideline

(1) First, we wanted to gain a detailed understanding of how desirable futures related to AI technology and necessary requirements were envisioned by the workshop groups. To do so, we started coding groups' documentations on the worksheets sections AIM (stakeholder mapping), SCENARIO (from backcasting), and BENEFITS and RISKS (from risk assessment) applying open coding. We then applied evaluation coding to parts of this corpus (BENEFITS and RISKS) to assign judgments about the perceived value or possible impact of anticipated measures and policy. This was carried out for each workshop group separately. After this coding process we posed specific questions to the data, leading to a rearrangement of the codes for individual groups (see also Figure 7):
- What basic assumptions and requirements do groups perceive as necessary for the AI system to be beneficial? – We split this meta category into two more detailed layers: (1) societal components and (2) technical components of the AI system
- How is the AI system used in the scenario of the group?
- What should be achieved in the context of groups' scenario?
- What if the aim is achieved (long term aim)?

The summaries of our findings from these coding procedures are described in Section 4.2.1.
Finally, we collected the *basic assumptions and requirements* (including subcategories *societal components* and *technical components of the AI system*) across workshop groups from

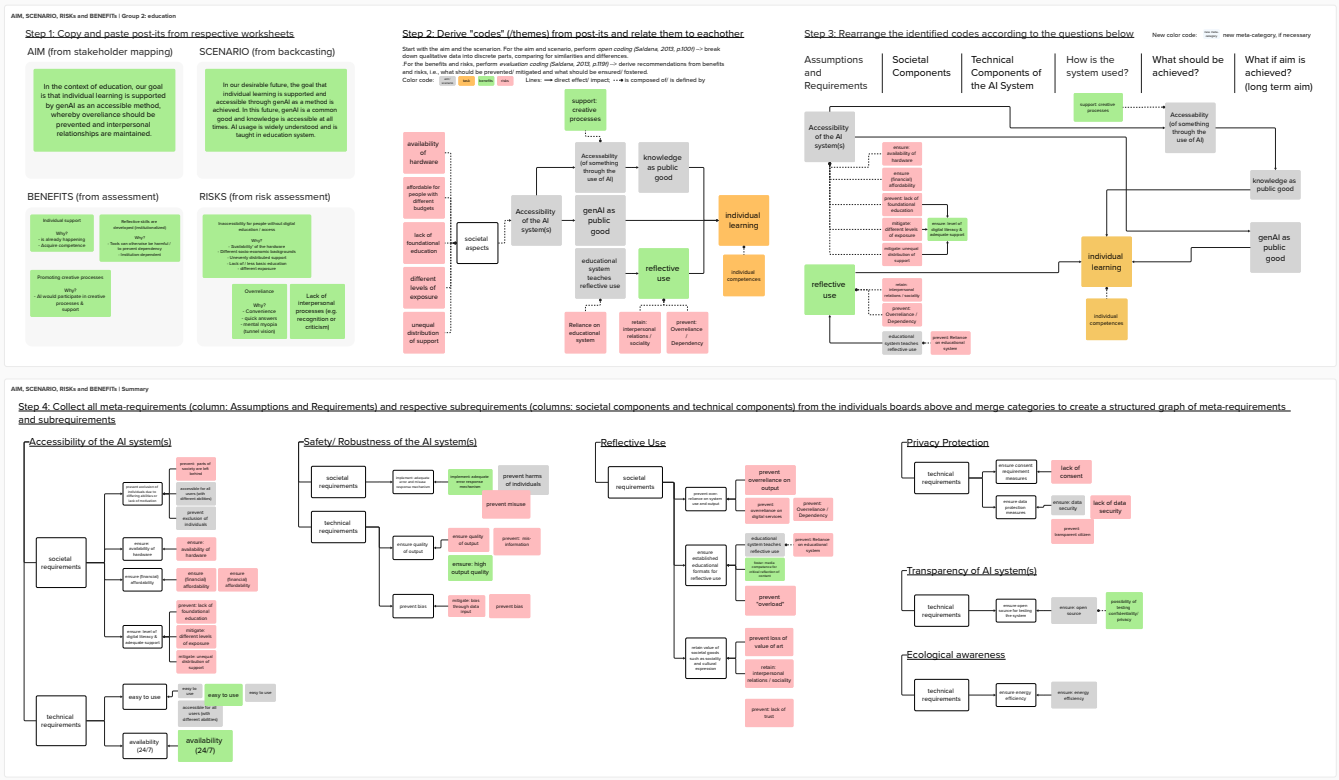

Figure 7: Example of analysis template and coding on one German participant group (top image) and summary of focused codings for the requirements (bottom image) by German research team before the joint meeting with all country team to share, compare and adjust assigned codes. All country teams were provided with these templates. The template depicted on the top serves the analysis of themes concerning aims, scenarios, benefits, and risks groups discussed (top), which is filled out for each of the groups. The template at the bottom serves re-clustering and summarizing all identified requirements across all groups. (Zoom in for details)

individual countries and applied focused coding to this corpus (see also Figure 7). Our findings from this analysis step are described in Section 4.2.2.

(2) Second, we wanted to understand the details of the systemic relations groups envisioned for their aims and emerging scenario. To do so, we applied open coding to the groups' documentations for each of the positions in the stakeholder mapping. Here, we compared similarities and differences between the participant groups from individual countries. The codes were then summarized together with observations per code, a note on which groups (i.e., context) have discussed this code, and example comments from the worksheets. The summaries of MOTIVATION and BENEFICIARIES are described in Section 4.3.1. The summaries of OPPONENTS and NON-RECEIVERS/HARMED are described in Section 4.3.3. The summaries of RESPONSIBLE ACTORS are summarized in Section 4.3.2 jointly with the MEASURES and the analysis from the backcasting (see description in next step).

(3) Third, we applied open coding to the groups' documentations from the backcasting exercise, mapping proposed measures or incidents leading to the future scenario of individual groups. Codes were supplemented with small descriptions to provide more context on the coded measure. After the coding of all groups' backcastings, focused coding was applied to the corpus of each country, creating new meta-themes. These indicated which measures or incidents leading to a desirable future scenario have been primarily subject of discussion in the groups dialogues. The structure of clusters was then compared to the table summary of the measures discussed in the stakeholder mapping analysis.

A.4 Final Codebook.

Table 9 presents the final codebook.

Table 9: Codebook

Code	Description	Examples of participant's comments (transl. to English)	Country
What requirements are necessary for genAI to create societal value in the first place?			
Accessibility	Ensuring ease of access and usability for all users.	*ensure: availability of hardware* | *easy to use* | *prevent: lack of foundational education*	NIG, JP, GER
Education and reflective use	Establishing a deep understanding of systems' capabilities to foster reflective use and prevent overreliance.	*educational system teaches reflective use* | *prevent overreliance on output* | *retain: interpersonal relations / sociality*	NIG, JP, GER
Safety and robustness	Ensuring high-quality outputs and minimizing risks.	*ensure: high output quality* | *mitigate: bias through data input* | *implement: adequate error response mechanism*	NIG, JP, GER
Privacy protection	Safeguarding personal information and obtaining consent.	*lack of consent* | *ensure: data security*	NIG, GER
Governance structures	Establishing structures for oversight and accountability.	*institutional change* | *regulated, age-appropriate genAI* | *easy control and regulation*	NIG, JP
genAI awareness	Understanding the use cases and limitations of genAI.	*Increase in Awareness on genAI and its benefits* | *Awareness for individuals on the usage of AI* | *Creation of awareness*	NIG
Ecological awareness	Recognizing the environmental impact of genAI.	*ensure energy efficiency*	NIG, GER
What is the motivation to implement genAI?			
efficiency gains	Achieving improvements in productivity & cost-effectiveness.	*time savings, cost savings* | *economic efficiency*	NIG, GER
societal well-being	Enhancing the overall quality of life for individuals and communities.	*Improvement of the quality of life of all mankind* | *more leisure time, more appreciation*	JP, GER
political interests	Pursuing advantages aligning with national/political agendas.	*competitive advantages* | *re-election* | *national interest*	JP, GER
emotional attitudes towards AI	Feelings and perceptions regarding the use of AI technologies.	*passion* | *A country where GenAI tools, although helpful, do not become a major motivation for lawlessness, misinformation, and a downgrade of education.*	NIG
existing technical limitations or a lack of human resources	Addressing gaps in human resources and technology.	*lack of human resources* | *innovation*	JP
Who or what is not benefiting?			
individual workers	Those whose jobs may be threatened by genAI.	*teachers* | *people whose jobs are being replaced*	NIG, JP, GER
excluded individuals/groups	Populations that lack access to technology or resources.	*children without devices* | *people left behind due to regional disparities* | *elderly*	NIG, JP
industry players	Specific sectors or organizations that may be adversely affected.	*tutors* | *certain educational institutions*	GER
environment	The natural world that may suffer from genAI impacts.	*environment*	NIG, GER
Who or what could hinder reaching the aim?			
political interests	Factors that may obstruct progress due to conflicting political agendas.	*populism* | *national interests* | *interest conflicts in agendas*	NIG, GER
corporate or financial interests	Influences from businesses that prioritize profit or corporate strategy.	*dominant IT companies* | *wages and taxes* | *profit interests*	JP, GER
non-interested/AI-averse individuals	People resistant to change or skeptical of genAI.	*[those] who believe AI will take their jobs* | *citizens (some without internet)* | *conservatives as those who reject change*	NIG, JP, GER
lack of funding	Insufficient financial resources to support initiatives.	*lack of funding*	NIG, GER
challenges of access	Barriers that prevent equitable access to technology.	*Lack of access to resources*	NIG
limitations of the technology	Constraints inherent in current genAI capabilities.	*AI risks* | *limitations of AI* | *how to determine criteria for scrutiny*	JP, GER
misuse	Potential for genAI to be used inappropriately or harmfully.	*Students use AI irresponsibly*	NIG
existing regulations	Current laws that may impact the development and/or deployment of genAI.	*existing law*	JP
Who or what profits?			
service users	Individuals or corporations that directly benefit from the services provided.	*pupils, students, adult education* | *busy people* | *staff*	NIG, JP, GER
all citizen/ everybody	A public (unspecified individuals) benefiting from societal advancements.	*local community* | *all* | *citizen, societies*	NIG, JP, GER
service providers	Entities that deliver genAI services.	*teachers*	GER
What measures should be taken to ensure AI systems create societal value?			
Ensure education and conscious societies	Promoting awareness and understanding of genAI among the public.	*information / education* | *Increasing literacy of GenAI* | *public discourse / participation* | *Include the voices of people in the field (educators, coordinators, data scientists)*	NIG, JP, GER
Foster technical innovation and best practices	Encouraging technological advancements in genAI and sharing effective methods.	*build technical infrastructure* | *innovation* | *model / best practice case*	NIG, JP, GER
Ensure regulation	Establishing guidelines and legal frameworks for genAI.	*strong regulation* | *legislative package* | *Creating guidelines*	NIG, JP, GER
Build infrastructure	Developing the necessary physical and digital frameworks for access.	*Making it possible for anyone to access the Internet when they want to* | *expansion of infrastructure*	NIG, JP, GER
Build area expertise for system implementation and monitoring	Cultivating specialized knowledge for effective genAI deployment.	*implementation by experts* | *Identify training needs*	NIG, GER
Provide financial resources	Allocating necessary funds to support genAI initiatives.	*provision of financial resources*	GER
Who is responsible for the implementation of the identified measures?			
Government & political actors	Entities responsible for policy-making and governance.	*Government* | *MEXT* | *public institutions*	NIG, JP, GER
Area personnel	Individuals working in contexts of genAI application.	*teachers* | *public administrators* | *university personnel*	NIG, JP, GER
Researchers and science actors, and industry	Professionals engaged in research and development.	*researchers*	NIG, JP, GER
Citizens and users	The general public who utilize genAI systems and services.	*citizens* | *users* | *parents*	NIG, JP, GER

A.5 Scales: AI Attitude and Interest in AI

AI Attitude Scale. Attitude toward AI was measured using the four-item AI Attitudes Scale constructed and validated by [64] and adapted to a five-point scale (1=not at all; 5=completely agree). The scale captures attitudes toward AI by inquiring about perceived utility for private and work life, impact on society, and intentions to use AI.

Interest in AI. We measured interest in AI with four items on a five-point scale (1=does not apply at all; 5=fully applies) by [96] adapted from [42]. We calculated a mean index across the items (Germany: M=4.26, SD=0.98; Japan: M=4.25, SD=0.82; Nigeria: M=3.96, SD=0.82).

Table 10: Survey Measures

Scale name	Items	Scale	Source
AI Attitude Scale	I believe that AI will improve my life. I believe that AI will improve my work. I think I will use AI technology in the future. I think AI technology is positive for humanity.	5-point scale: "not at all" to "completely agree"	[64]
Interest in AI	I follow processes relating to artificial intelligence with great curiosity. In general, I am very interested in artificial intelligence. I read articles about artificial intelligence with great interest. I watch or listen to articles about artificial intelligence with great interest.	5-point scale: "does not apply at all" to "fully applies"	[96]

A.6 Pre-Testing

We conducted two pre-tests with students in Germany.

The first pre-test involved 40 participants during a 1.5h session to test the methods outlined in Figure 8. The pre-study was accompanied by a survey to test the survey questions for the dialogue. After the session, two researchers analyzed the data and explored whether the methods worked as intended. The analysis showed that all participants conceived futures with genAI. Based on this observation, the only change made was to explicitly add the instruction that future scenarios did not have to include genAI (to prevent technological determinism).

The second pre-test was conducted with 8 participants to test the remainder of the dialogue's method in a 1h session. An external observer attended the session to provide additional feedback. The risk cards proved to have a positive effect (i.e., grounded in academic proof) on participants' discussions. Based on this test, we added a "why" description field to the risk assessment worksheet and a "non-receivers" field to the actantial model. Overall, the feedback from the participants and the observer received after the session was very positive.

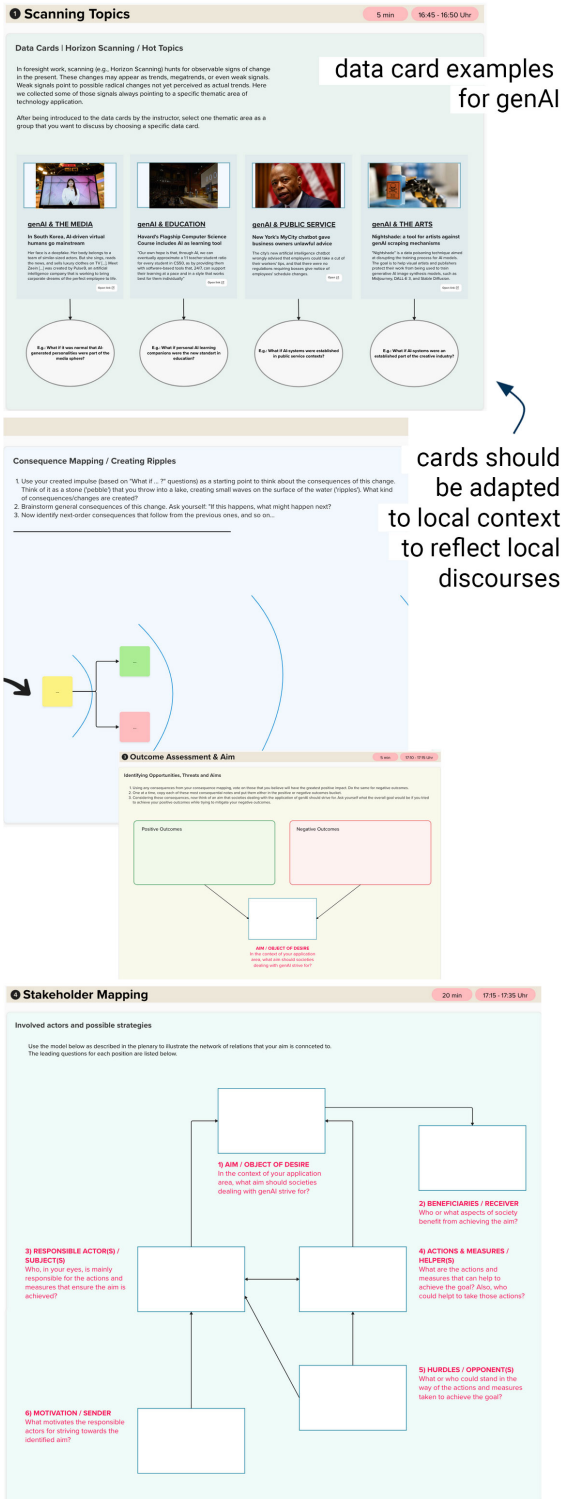

Figure 8: Dialogue methods tested in pre-study 1.

A.7 Details on Selected Results

Below, we provide details on statistical analyses. For all analyses of group differences, we tested the statistical assumptions of ANOVA. If not satisfied, we performed a non-parametric Kruskal-Wallis test with Benjamini Hochberg corrections. The assumption of independence was achieved for all tests as the data was collected in three different countries. Figure 9 provides a visual overview of group differences for selected measures. For all calculations, *NA* responses have been ignored.

A.7.1 Feelings toward AI (measured pre and post the dialogue).

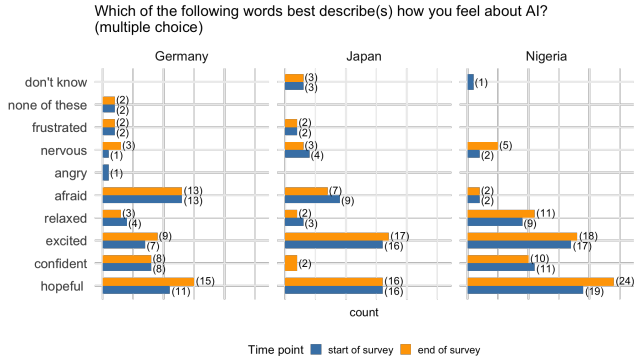

Figure 10: Participant feelings pre and post the dialogue.

A.7.2 Differences in AI Attitude Scale per country. Figure 11 presents the counts of the mean indexes of the AI Attitude scale for each country.

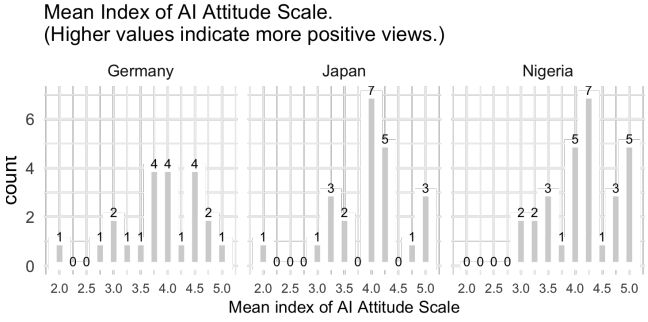

Figure 11: Mean index of AI attitude scale (4 item, 5-point Scale: 1=not at all, 5=completely agree). The four items read: I follow processes relating to artificial intelligence with great curiosity. In general, I am very interested in artificial intelligence. I read articles about artificial intelligence with great interest. I watch or listen to articles about artificial intelligence with great interest.

We performed a one-way between-subjects ANOVA to test for differences in attitudes towards AI between the countries. To do so, we first tested the assumptions. No extreme outliers were identified. Shapiro-Wilk's tests on each of the countries (Germany: W=0.95, p=0.285; Nigeria: W=0.93, p=0.059; Japan: W=0.92, p=0.062) as well as visual analysis of the QQ-Plot suggest normal distribution. A Levene's test of homogeneity of variances indicated that the variances were homogeneous for the three countries, $F(2,71)=0.19$, p=0.828. The one-way ANOVA shows there is no statistically significant difference in the attitudes toward AI between the three country groups, $F(2,71)=1.107$, p=0.336, generalized eta squared = 0.03. See Figure 9(A).

A.7.3 Differences in AI Interest per country. A Shapiro-Wilk test showed that the distribution of mean interest in AI departed significantly from normality (W=0.88, p<0.01). Hence, instead of an ANOVA, we performed a non-parametric Kruskal-Wallis Test to examine the differences in mean interest in AI between participants from the three countries. No significant differences ($\tilde{\chi}^2$=3.87, p=0.14, df=2) were found between the three countries. See Figure 9(B) and means for each item in Figure 12.

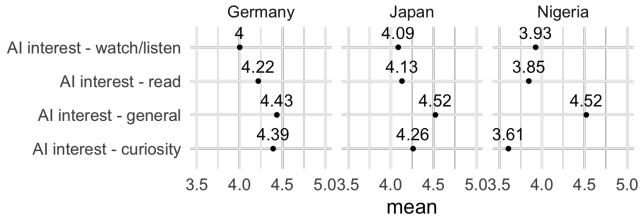

Figure 12: Participant interest in AI by country (four item, 5-point scale: 1=does not apply at all, 5=fully applies). The four items read: I follow processes relating to artificial intelligence with great curiosity. In general, I am very interested in artificial intelligence. I read articles about artificial intelligence with great interest. I watch or listen to articles about artificial intelligence with great interest. 5-point scale from 1="does not apply at all" to 5="fully applies".

A.7.4 Differences in AI Media Portrayal perception. A Shapiro-Wilk test showed that the distribution of mean perception of AI portrayal departed significantly from normality (W=0.89, p<0.01). Hence, instead of an ANOVA, we performed a non-parametric Kruskal-Wallis Test to examine the differences in AI media portrayal between participants from the three countries. Kruskal-Wallis Test suggests significant differences between the three groups ($\tilde{\chi}^2$=10.19, p<0.01, df=2). The pairwise comparison showed that the portrayal of AI in Nigerian media was perceived as statistically significantly more positive by participants from Nigeria than the AI portrayal in Japanese media by Japanese participants. (p = 0.01). See Figure 9(D).

A.7.5 Differences in participants having heard of genAI from the news. A Shapiro-Wilk test showed that the distribution of participants having heard of genAI departed significantly from normality (W=0.77, p<0.01). Hence, instead of an ANOVA, we performed a non-parametric Kruskal-Wallis Test to examine the differences in having heard of genAI between participants from the three countries. Kruskal-Wallis Test suggests significant differences between the three groups ($\tilde{\chi}^2$=9.95, p<0.01, df=2). The pairwise comparison showed that significantly fewer Nigerian participants had heard of genAI from the news than Japanese participants (p < 0.01). See Figure 9(E).

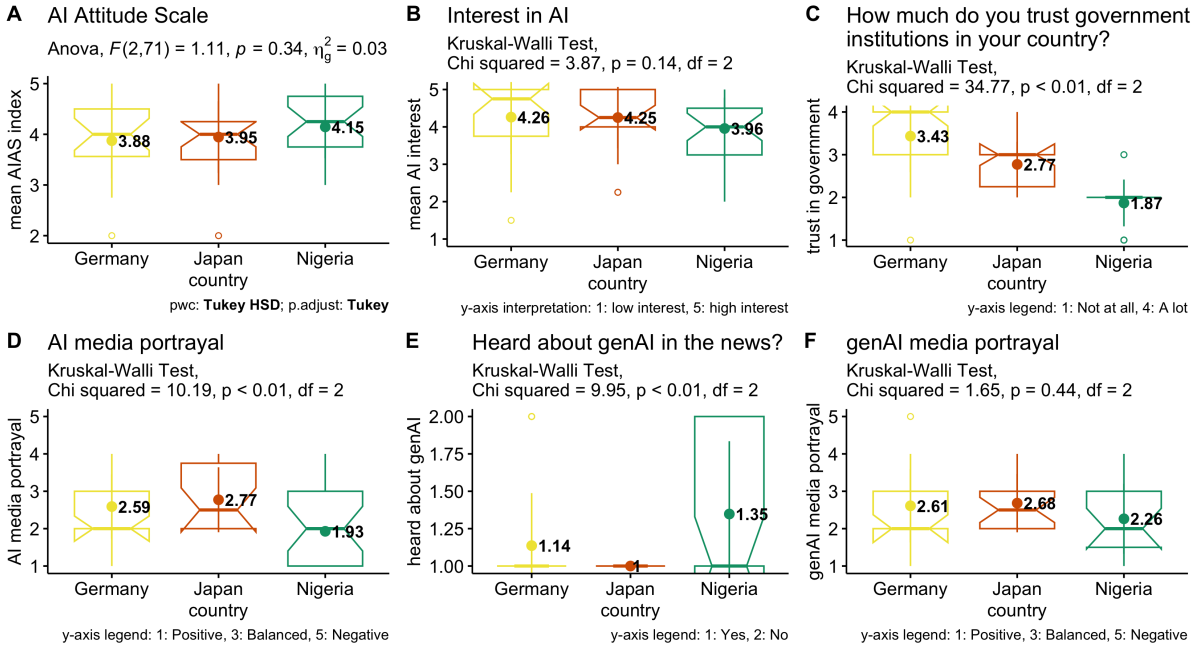

Figure 9: Plot visualizing the (non-)significant differences between the three studied countries for the measures 'attitudes toward AI', 'interest in AI', 'trust in government', 'AI media portrayal', 'heard about genAI', and 'genAI media portrayal'.

A.7.6 Differences in genAI Media Portrayal perception. A Shapiro-Wilk test showed that the distribution of mean perception of AI portrayal departed significantly from normality (W=0.94, p<0.01). Hence, instead of an ANOVA, we performed a non-parametric Kruskal-Wallis Test to examine the differences in genAI media portrayal between participants from the three countries. Kruskal-Wallis Test suggests no significant differences between the three groups ($\tilde{\chi}^2$=1.65, p=0.44, df=2). See Figure 9(F).

A.7.7 Engagement with information sources on AI.

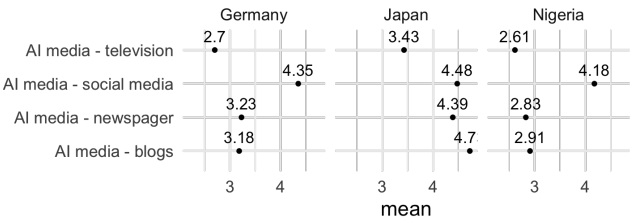

Figure 13: Average frequency of engagement with different information sources for information on AI. (Scale: 1=not at all, 2=once a month, 3=about two or three times a month, 4=about once a week, 5=several times a week, 6=daily).

A.7.8 Differences in trust toward governmental institutions. A Shapiro-Wilk test showed that the distribution of participants trusting governmental institutions departed significantly from normality (W=0.88, p<0.01). Hence, instead of an ANOVA, we performed a non-parametric Kruskal-Wallis Test to examine the differences in trust toward governmental institutions between participants from the three countries. Kruskal-Wallis Test suggests significant differences between the three groups ($\tilde{\chi}^2$=34.77, p<0.001, df=2). The pairwise comparison showed that Nigerian participants had significantly less trust in governmental institutions than Japanese or German participants (p < 0.001) and that German participants had significantly more trust in governmental institutions than Japanese participants (p < 0.001). See Figure 9(C).

A.7.9 Individuals' reflections of the context arts, culture, and creative industries. For the evaluation of genAI in *arts, culture, and creative industries*, the variance between subjects and the negative sentiments were highest compared to the other two contexts across countries. Japanese respondents: rather against 9%, neutral 17%, rather in favor 52%, in favor 22%; German respondents: rather against 15%, neutral 20%, rather in favor 25%, in favor 40%; Nigerian respondents: against 5%, rather against 11%, neutral 16%, rather in favor 37%, in favor 32%. With, in comparison to the two other contexts, lower ratings overall across countries, German respondents perceived a slightly lower societal benefit (M=3.2, SD=1.0) than respondents from Nigeria (M=3.7, SD=1.2) and Japan (M=3.7, SD=0.9). Nigerian respondents perceived the highest personal benefit (M=3.9, SD=0.9), compared to Japanese (M=3.7, SD=0.9) and German (M=3.4, SD=1.0) respondents. Japanese respondents indicated the highest rate of being affected personally (M=3.7, SD=1.1), compared to German (M=2.9, SD=1.3) and Nigerian (M=3.1, SD=1.3) respondents.

A.7.10 Difference in evaluations of application contexts: "How would you evaluate the use of generative AI in the context of <application context>?" Shapiro-Wilk tests showed that the distribution of participants' evaluations of any of the three use cases departed significantly from normality (education: W=0.75, p<0.01; public service:

W=0.87, p<0.01; arts and culture: W=0.88, p<0.01). Hence, instead of ANOVAs, we performed non-parametric Kruskal-Wallis Tests to examine the differences in how favorable participants from the three countries were with the use of genAI in the contexts of education, public services, and arts and culture. Kruskal-Wallis Test suggests no significant differences between the three countries for any of the application contexts (education: $\tilde{\chi}^2$=1.11, p=0.57, df=2; public service: $\tilde{\chi}^2$=4.15, p=0.13, df=2; arts and culture: $\tilde{\chi}^2$=0.13, p=0.94, df=2). See Figure 14(A-C).

A.7.11 Difference in evaluations of application contexts: "beneficial for society", "beneficial for me personally", "affects me personally". **Education.** Shapiro-Wilk tests showed that the distribution of participants' evaluations of any of the three statements departed significantly from normality ("beneficial for society": W=0.87, p<0.01; "beneficial for me personally": W=0.87, p<0.01; "affects me personally": W=0.92, p<0.01). Hence, instead of ANOVAs, we performed non-parametric Kruskal-Wallis Tests to examine the differences in agreement with the three statements between the three countries. Kruskal-Wallis Test suggests no significant differences between the three groups for any of the statements ("beneficial for society": $\tilde{\chi}^2$=3.39, p=0.18, df=2; "beneficial for me personally": $\tilde{\chi}^2$=3.70, p=0.16, df=2; "affects me personally": $\tilde{\chi}^2$=2.54, p=0.28, df=2). See Figure 15(A1-A3).

Public Sector. Shapiro-Wilk tests showed that the distribution of participants' evaluations of any of the three statements departed significantly from normality ("beneficial for society": W=0.87, p<0.01; "beneficial for me personally": W=0.91, p<0.01; "affects me personally": W=0.93, p<0.01). Hence, instead of ANOVAs, we performed non-parametric Kruskal-Wallis Tests to examine the differences in agreement with the three statements between the three countries. Kruskal-Wallis Test suggests no significant differences between the three groups for any of the statements ("beneficial for society": $\tilde{\chi}^2$=4.91, p=0.09, df=2; "beneficial for me personally": $\tilde{\chi}^2$=3.55, p=0.17, df=2; "affects me personally": $\tilde{\chi}^2$=5.78, p=0.05, df=2). See Figure 15(B1-B3).

Arts and Culture. Shapiro-Wilk tests showed that the distribution of participants' evaluations departed significantly from normality for the statement "beneficial for society" (W=0.94, p<0.01). Hence, instead of ANOVAs, we performed non-parametric Kruskal-Wallis Tests to examine the differences in agreement with this statement between the three countries. Kruskal-Wallis Test suggests no significant differences between the three countries ($\tilde{\chi}^2$=3.18, p=0.20, df=2). For the other two statements, we performed a one-way between-subjects ANOVA, as Shapiro-Wilk's tests suggested no departure from normality ("beneficial for me personally": W=0.96, p=0.07; "affects me personally": W=0.96, p=0.08). A Levene's test of homogeneity of variances indicated that the variances were homogeneous for the three countries ("beneficial for me personally": F(2,54)=0.69, p=0.516; "affects me personally": F(2,52)=0.93, p=0.402). The one-way ANOVA suggests no statistically significant differences in the evaluations of the two statements between the three country groups, ("beneficial for me personally": F(2,54)=1.674, p=0.197, generalized eta squared = 0.06; "affects me personally": F(2,52)=2.729, p=0.075, generalized eta squared = 0.09). See Figure 15(C1-C3).

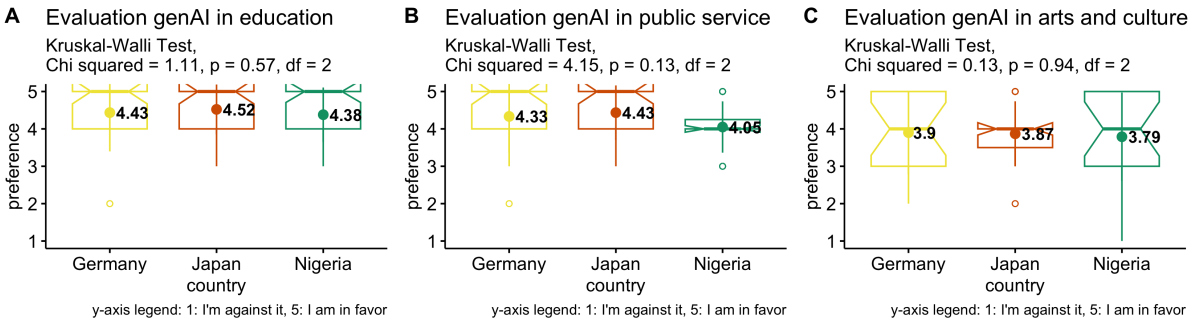

Figure 14: Plot visualizing the non-significant differences in evaluations of the usage of genAI in the three different contexts between the three studied countries (Germany, Japan, and Nigeria).

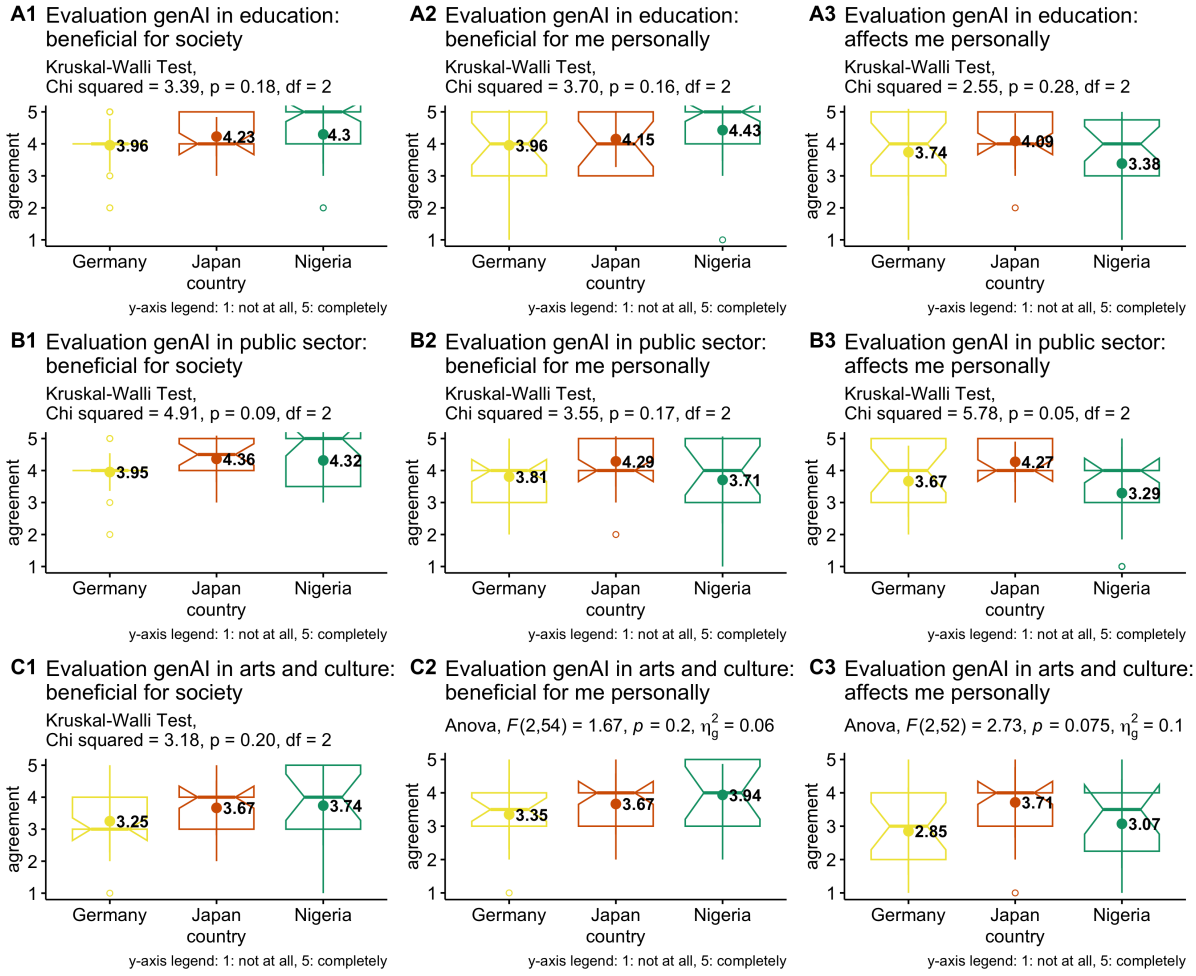

Figure 15: Plot visualizing the non-significant differences in evaluations of the three statements "beneficial for society", "beneficial for me personally", "affects me personally" between the three studied countries (Germany, Japan, and Nigeria) for all three contexts: plot A1 to A3 displays the context of education, plot B1 to B3 displays the context of public sector, plot C1 to C3 displays the context of arts and culture.