QUEERTRAVEL: Visualizing Social Safety Enriched with Community Experiences to Support Travel Decisions

Başak Oral, Alexandru Telea, Evanthia Dimara

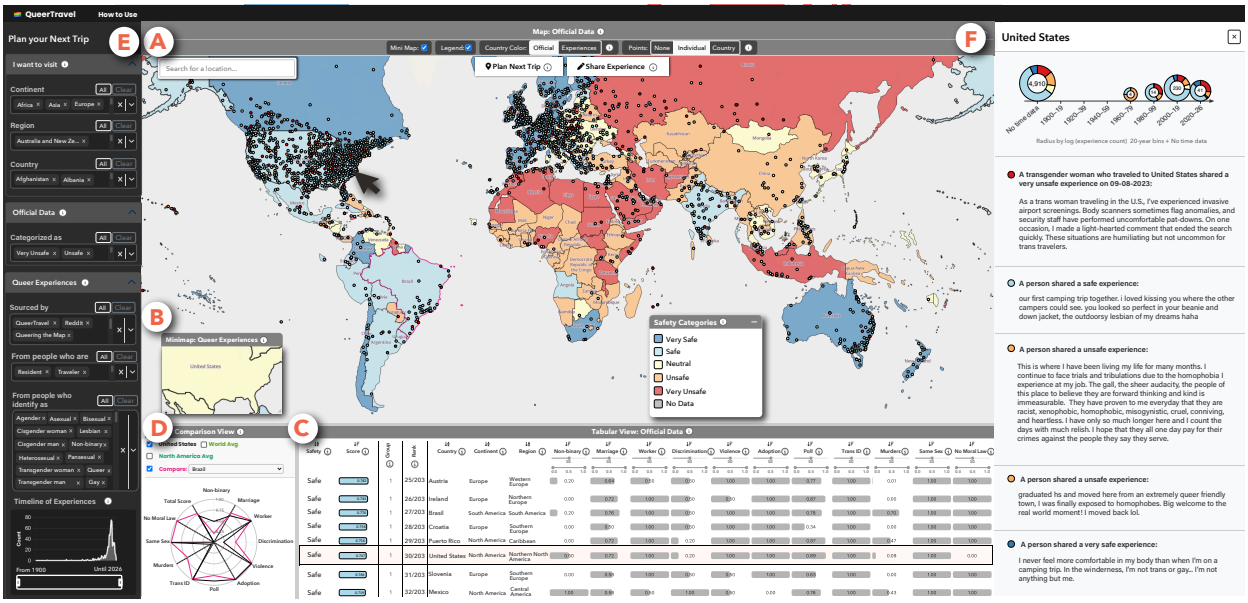

Fig. 1: QUEERTRAVEL overview. **(A)** The map view shows official country-level social safety as a choropleth, overlaid with queer experiences as individual color-coded points or aggregated donut glyphs (Fig. 4); a search bar supports destination lookup, and the *Share Experience* button enables adding experiences. **(B)** The minimap choropleth supports comparison between experience-based safety and the official-data map. **(C)** The tabular view supports country and indicator inspection, sorting, filtering, weighting, and similarity-based ranking/grouping (Fig. 3); map and table selections are linked across views. **(D)** The radar chart of the comparison view contrasts the hovered country (USA) with a selected country (Brazil), and the continental and world averages across official metrics and total score. **(E)** The filter panel supports filtering by destination, safety categories, data source, identity, residency status, and time. **(F)** The experience detail panel shows narratives and their temporal distribution, with linked selection between map points and narratives.

Abstract— Social safety plays a critical role in queer travel, as discrimination at destinations can lead to restrained expression, exclusion, or physical harm. Yet information relevant to safer travel decisions remains fragmented across formal sources, personal networks, and unstructured online accounts. To address this gap, we conducted a design study with queer participants to investigate how social safety is perceived in travel decision making, what information is missing from existing resources, and how community experiences can complement formal data. Based on these insights, we developed QUEERTRAVEL, an interactive visualization tool that combines curated social safety indicators with community-contributed experiences for 203 countries. The system supports overview, comparison, and inspection through coordinated map-based, tabular, and comparative views, enabling users to examine destinations across criteria such as same-sex marriage laws, transgender legal status, morality laws, and violence-related indicators alongside structured, location-specific accounts of lived experiences. In a subsequent study, participants used QUEERTRAVEL to reason about destinations under social safety considerations and reflect on the value, limits, and sensitivities of combining institutional and experiential evidence in one decision-support environment. Our work contributes insights into designing multi-criteria decision making (MCDM) visualization tools for queer travel safety, showing how experiential knowledge can complement formalized data and shifting attention from risk and vulnerability toward participation and empowerment of marginalized populations. Supplementary materials are available at https://osf.io/2mvb4/overview?view_only=3db8245eccf44c929d3e2de17d63a3c4X.

Index Terms—Decision Making, Queer, Input Visualization, Data Feminism, Design Study, Interaction, Multi-Criteria Decision Making.

1 INTRODUCTION

Travel offers exploration, leisure, and cultural connection. For minority groups, however, it can also involve risk, uncertainty, and vigilance [33, 47, 77]. Queer travelers, whose gender identity, sexuality, or expression fall outside dominant social norms [36], may face hostility at borders, discomfort in public spaces, and discrimination by authorities or service providers [10, 33, 77]. Even in destinations considered inclusive, they may still adapt their behavior to avoid attention or conflict, navigating a tension between feeling safe and feeling welcome [33, 57]. Social safety is therefore central to queer travel.

Yet social safety is hard to assess when planning a trip. Relevant information is fragmented across legal databases, community forums, and advocacy reports, with no consolidated way to explore it [10, 57]. Although visualization research has examined *decision support* in many

• *B. Oral, A. Telea, and E. Dimara are with Utrecht University, Netherlands Email: e.oral@uu.nl, a.c.telea@uu.nl, evanthia.dimara@gmail.com*

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domains [54], it has rarely centered marginalized groups and has not examined travel decisions under social safety concerns.

To address this gap, we conducted a design study with queer participants to examine how social safety is perceived and prioritized in travel decisions, what information is missing from existing resources, and how visualization can support such decisions. This process led to QUEERTRAVEL, a web-based visualization tool that combines a curated, multi-source social safety dataset spanning 203 countries with community reports. The dataset integrates official indicators related to legal recognition, restrictive laws, and violence-related conditions, together with location-specific experiential accounts. The system supports overview, comparison, and inspection through coordinated map-based, tabular, and comparative views, and enables users to contribute structured experience reports. In this way, QUEERTRAVEL supports travel decisions by bringing institutional and experiential evidence into a common decision space, in line with recent calls for more contextual and dynamic Multi-Criteria Decision Making (MCDM) tools [21, 54]. Our contribution is twofold:

- We study how queer travelers conceptualize social safety, identifying needs, concerns, and values often missing from mainstream data systems. We translate these insights into design requirements informed by literature and participant input, and reflect on their implications for visualization-based decision support in sensitive contexts involving marginalized populations.
- We develop QUEERTRAVEL through an iterative, participant-informed design process. The resulting open-source tool combines MCDM-style exploration with a curated, layered data foundation and a structured mechanism for community reports.

At a higher level, our work aims to offer a grounded understanding of how to design visualization tools that center the values, constraints, and agency of marginalized individuals navigating safety-critical decisions.

2 RELATED WORK

To our knowledge, no prior visualization research has focused on queer travel, social safety, and travel decisions. We therefore draw on adjacent areas: Sec. 2.1 discusses queer perspectives in HCI and visualization, including work on gender representation and critical data perspectives, while Sec. 2.2 reviews visualization systems for geographic and preference-based Multi-Criteria Decision Making (MCDM). In line with design study methodology [61], this work informed the selection and adaptation of techniques suited to our users' needs.

2.1 Queer in Visualization and HCI

Taylor et al. [65] show that queer individuals were largely ignored in HCI research before 2014. The term *queer* in HCI and visualization research now appears in two strands of work. One strand focuses on developing frameworks for more inclusive user interfaces and visualizations, challenging conventional design practices that often overlook or misrepresent marginalized identities [3,9,25,37,39,42,43]. Researchers in this area draw on queer methodologies [42] such as *disorientation* (challenging normative expectations, e.g., disrupting binary gender options in forms), *friction* (surfacing tension in use, e.g., prompting users to reflect on identity choices rather than selecting defaults), and *counterfunctionality* (subverting dominant usage assumptions, e.g., using sliders that resist precision to question objectivity) to design systems that resist heteronormative norms [3, 25].

A broader critique of data and visualization practices emphasizes how representational choices can reproduce exclusion. Data feminism examines how power shapes data collection, analysis, and representation, advocating justice-oriented design practices [20]. Within visualization and HCI, these concerns also appear in research on how gender is represented in data systems and interfaces. At the level of technological infrastructures, Spiel [63] shows how databases and interface conventions often encode gender as fixed and binary, limiting how identities can be expressed. Similarly, visualization research highlights how design choices such as binary encodings of gender, color conventions, and categorization strategies can reinforce gender assumptions [16]. In response, Simeoni et al. [62] propose gender spectrum visualizations that avoid rigid classification through an anticategorical approach to gender representation.

The second strand of work on queer technologies focuses on developing applications that directly support queer individuals and communities, for example by enabling identity expression, fostering visibility, or preserving histories. Studies highlight how geolocated storytelling and digital archives document lived queer experiences and resist historical erasure [15, 40]. Platforms like *Queering the Map*, for instance, allow users to contribute personal stories tied to specific places, creating a collective digital cartographic archive of queer memory and presence [40]. Taylor et al. [65] note that, even as interest in queer topics has grown, research still often frames queer users primarily through lenses of trauma, victimhood, or marginalization rather than examining their everyday needs, desires, and interactions with technologies. Recent work calls for moving beyond documenting oppression and vulnerability toward designing with and for queer empowerment, emphasizing technologies that support queer agency, care, and everyday life [43, 65].

Building on these perspectives, we present a visualization system for queer travel decisions that draws on queer-inclusive design and combines official safety indicators with lived experiences, treating queer individuals not only as incident reporters but as decision makers, travelers, and consumers evaluating destinations and local settings.

2.2 Geographic & Preference-based MCDM Visualization

Visualization plays a central role in supporting MCDM scenarios that involve geographic data [54]. Many such systems combine spatial data such as locations, regions, or spatial phenomena (for example, bus routes, flood zones, or infection zones) with thematic variables that encode domain-specific attributes such as population density, flood risk, or infection rates. Choropleth and heat maps are among the most common spatial encodings for such attributes [2, 4, 74]. In addition, vector plots and network diagrams can depict route lines and movement, direction, or connectivity between locations, revealing spatial patterns or flows [4, 6, 73]. A key strength of spatial MCDM visualization is interaction, which enables users to explore alternatives and patterns via filtering (sliders or checkboxes), direct manipulation (e.g., drag-and-drop route adjustment), and brushing and linking across coordinated views [2, 4, 72, 73]. Advanced interfaces, such as sketch-based input, have also emerged in domains like flood management, allowing experts to specify parameters by drawing directly onto maps, enabling quick creation and analysis of hypothetical scenarios [59, 70]. Yet, such systems are mainly designed to optimize control and analytical depth in service of accuracy and efficiency. They rarely focus on contextual, personalized, and value-sensitive exploration that queer individuals may prioritize when assessing social safety in travel decision making.

One way to support individual priorities in MCDM is by preference-based visualizations [18], which allow users to influence the relative importance of decision criteria. Many such systems use a table view as primary layout: ValueCharts [17], LineUp [28], Podium [69], and WeightLifter [55] represent alternatives as rows and criteria as columns, often enhanced with visual encodings such as colored bars, glyphs whose visual properties encode data attributes, or interactive sliders that reflect the magnitude of values or allow for weight adjustment. Maps can also be combined with tabular views to support coordinated exploration of geographic alternatives and user-defined routines [74].

Most MCDM tools support the weighting of predefined criteria and typically rely on fixed datasets assumed to be complete and trustworthy [17, 28, 55, 69, 74]. Prior work highlights the need to support users in questioning, contextualizing, and augmenting existing data [48], for example by incorporating personal knowledge, or "data hunches," [44] and enabling users to collect or modify data through interaction [13]. A similar need emerged in our interviews: queer travelers described social safety through lived experiences often absent from official indicators, motivating mechanisms for contributing and exploring community-reported experiences alongside official safety indicators, and extending the dataset with lived accounts when evaluating destinations.

3 Design Study Overview

3.1 Methodological Approach

To understand how visualization can support safety-informed queer travel decisions, we conducted a two-phase design study [49, 61]. In **Phase 1** (Sec. 4), we characterized the domain through literature on queer travel problems and interviews with queer participants (Sec. 3.2), supported by an early prototype (Fig. 2) to examine how participants interpreted social safety, what was missing, and what support they needed. We synthesized these findings into design requirements (Sec. 5) that, together with related work (Sec. 2) on queer design, queer-supporting applications, and geographic and preference-based MCDM tools, guided the design of QueerTravel (Sec. 6). **Phase 2** (Sec. 7) examined how QueerTravel supported travel decisions and experience sharing. We used this study to refine both the tool and the broader design insights.

This project originated in the first author's lived experience as a trans woman with a long-term goal of running at least one marathon on each continent. While exploring possible destinations, especially places where she lacked a trusted personal network, she repeatedly encountered the same problem: trustworthy, decision-relevant information about queer, and especially trans, social safety was hard to find; official indicators often did not help her anticipate on-the-ground realities. The gap was not only informational but also relational, since without prior experience from people in her own community, it was difficult to triangulate risks or interpret ambiguous signals.

From this starting point, our approach was informed by interpretivist methodology, which treats the researcher as an active instrument of inquiry whose position, access, prompts, interpretations, and reporting shape the knowledge produced through the study [24, 41, 45, 49]. We make these roles explicit: the first author originated the problem, conducted the interviews, led the analysis and interpretation, and designed the visualization system; the co-authors contributed to framing, interpretation, and design iteration and reflection. Interpretivist methodology further holds that, in studies of complex and contextual problems, what is relevant should not be fully determined in advance by the researcher, but clarified through participants' own accounts and judgments in context [41, 45, 49]. Phase 1 let participants explain how they understood and assessed social safety, interpreted official indicators, and identified what they found ambiguous, contradictory, trustworthy, untrustworthy, or missing in existing sources. Our approach was also informed by feminist methodology, which treats knowledge as *situated* in Haraway's [31] sense of being partial, embodied, and position-dependent, rather than in the spatial sense of situated visualization [12]. Feminist methodology also asks how power shapes what becomes visible, whose experiences are represented, and which perspectives remain marginalized or absent [31, 32]. The first author's trans travel experience was a meaningful entry point into the problem and kept us attentive to what official indicators leave out, whose experiences are underrepresented, and how lived community knowledge should carry through interviews and design requirements to the final system [3, 7, 20].

Both phases were audio-recorded and transcribed; Phase 2 sessions were additionally screen-recorded to support interpretation of participants' interactions with the near-final tool (Fig. 5). Transcripts were analyzed using reflexive thematic analysis [11]: the first author iteratively developed and refined codes capturing recurring patterns in participants' reasoning, requests, and concerns, and discussed the resulting codes with the last author. Phase 2 analysis started from the Phase 1 codebook and retained largely the same structure, adding one code for usability issues and prototype-improvement requests. Coded quotes were then clustered into the findings reported in Secs. 4.2 and 7.2. The finalized codebook, themes, and participant-specific supporting quotes are provided in the supplementary materials (see `interviewQuotes.xlsx`).

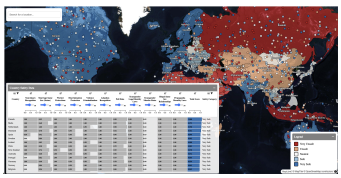

Fig. 2: Phase 1 QueerTravel version

3.2 Participants

All participants [1] provided informed consent, were self-identified across the LGBTQ+ spectrum and had prior travel experience (Table 1). Recruitment was conducted through a mix of institutional queer community channels, LGBTQ+ community groups, personal networks, and snowball sampling. Consistent with recruitment challenges often reported for minority and privacy-sensitive populations [22, 29, 34], participation in our study relied substantially on trust-based and community-mediated outreach, as broader open calls were not effective.

Table 1: QueerTravel 18 participants: 8 in Phase 1 and 10 in Phase 2.

Phase 1		Phase 2	
ID	**Identify as**	**ID**	**Identify as**
P1	non-binary trans-masc, asexual	P9	non-binary, pansexual
P2	cisgender lesbian woman	P10	transgender bisexual woman
P3	non-binary trans-masc	P11	cisgender bisexual woman
P4	non-binary queer, bisexual, non-monogamous	P12	cisgender pansexual man
		P13	cisgender gay man
P5	cisgender lesbian woman	P14	cisgender gay man
P6	queer woman (she/her)	P15	cisgender pansexual woman
P7	cisgender gay man	P16	cisgender pansexual woman
P8	cisgender gay man	P17	cisgender gay man
		P18	cisgender bisexual woman
Ages	22–42		24–39
From	*Ph. 1:* Dutch (4), Greek, Portuguese, Russian, Icelandic. *Ph. 2:* Turkish (2), German, British, Brazilian, Greek, French, Dutch, Argentine, Canadian		
Edu	*Ph. 1:* MSc (6), PhD (2). *Ph. 2:* MSc (6), PhD (3), TVET		

4 Phase 1 Interview: Domain Characterization

Queer individuals face distinct challenges when traveling due to discrimination, exclusion, and social safety concerns. A 2022 Booking.com survey [10] found that over 50% of queer travelers prioritize social safety when selecting accommodations and often modify their behavior to reduce the risk of discrimination or hostility. Prior research documents that visibly queer individuals, whether due to gender expression, identity, or sexual orientation, may encounter denial of service, verbal harassment, bullying, physical assault, and other forms of harm when traveling [33, 77]. Such incidents remain underreported, often perceived as routine or met with distrusted or hostile local authorities [35, 52]. Alongside overt harm, subtler forms of exclusion also exist, such as being denied the ability to book a shared room as a same-sex couple [33]. These dynamics often shape whether queer travelers avoid, postpone, or pursue particular trips, often under conditions of fragmented, incomplete, or difficult-to-interpret information [47, 64].

At the same time, prior research has focused unevenly on queer travel experiences, giving less attention to trans, non-binary and other underrepresented queer perspectives, as well as to travelers from more diverse backgrounds [8, 60, 67, 68]. The role of social networks, including family, partners, and queer communities, in shaping travel decisions also remains underexplored [51, 58]. More broadly, most prior studies are observational and descriptive, offering limited *actionable guidance* for designing interactive systems that could support queer travelers in practice (see Sec. 2.1). We therefore approach queer travel safety not only as a legal or institutional issue, but as a lived, contextual, and highly individualized decision problem. Phase 1 was designed to characterize this problem more concretely for visualization design by combining literature-grounded framing with prototype-supported interviews to understand how queer participants interpreted safety when planning travel, what was missing, and what support a visualization system should provide. These findings informed the design requirements in Sec. 5 and the subsequent development of QueerTravel.

[1] The Ethics and Privacy Quick Scan of the Utrecht University Research Institute of Information and Computing Sciences classified this research as low-risk, and therefore a full ethics review was not required.

4.1 Method and Procedure

We conducted prototype-supported semi-structured interviews to examine how queer participants interpreted official indicators (Sec. 6.1.1), made safety-informed travel decisions, and reflected on possible forms of system support. We built an early prototype (Fig. 2) guided by the design motivations in Secs. 2 and 3.1. Concretely, it consolidated fragmented legal and institutional safety indicators in one interface through: (i) a choropleth map, since the indicators were country-level and the task concerned recognizable destinations; (ii) a linked table, informed by preference-based MCDM, where countries appeared as alternatives and indicators as inspectable criteria; (iii) sorting and filtering to narrow destinations by personally relevant criteria; and (iv) a direct search bar, informed by the first author's marathon-destination use case. A movable legend and table let participants reposition supporting information while reasoning with the map.

After consent, demographics, and an introduction, participants (Sec. 3.2) used the prototype to choose a socially safe destination while thinking aloud about their reasoning, interpretation of official indicators, and use of available interactions.

After this task, participants saw a synthetic experience layer overlaid on the map (dots in Fig. 2): 1,000 randomly generated colored dots from very unsafe to very safe. These dots did not represent real reports, but hypothetical queer travel experiences used to prompt discussion of community-contributed data; selecting one opened a minimal template with safety category, contributor identity, and an empty narrative field. This layer translated three motivations from Secs. 2 and 3.1: geolocated queer storytelling motivated place-tied map points; input visualization motivated a contribution template; and queer/feminist perspectives on situated knowledge motivated identity and narrative fields, so experiences remained positioned accounts, not abstract data points. Because the study was prototype-supported, we interpreted responses as reasoning with proposed visualization support, not as an inventory of existing travel-planning tools. We introduced the layer only after participants had used the official-data view and articulated what was missing, so lived-experience input was not a premise of the task. Participants then assessed whether such experiential data would be useful, how they interpreted it, and what information was still missing.

We next used the critical incident technique [26] to elicit, if comfortable, a past social-safety travel experience. We did not first show the input workflow, so participants could describe experiences in their own terms. We then asked whether/how they would share such experiences, what information should be collected, stored, and displayed, and what input formats they preferred, including mobile or later entry.

4.2 Findings

F1 Safety is a situated judgment, not a fixed country property: Participants did not interpret safety as only country-level, but as shaped by who was traveling, with whom (P1, P3, P5), for how long (P3, P4, P6), and under what conditions, consistent with work treating gender- and sexuality-related data as situated [20, 30, 31]. Relevance also varied with embodiment and visibility, including overlap with women's street-safety concerns (P4) and whether one could or would conceal queer identity in public (P1, P2, P3, P5) [7]. Participants recalculated safety through their own priorities: changing indicator weights (P2, P7), treating some indicators as less relevant for short-term travel (P3, P4, P6), and prioritizing indicators differently by trip and identity. For example, P3 downplayed marriage and adoption for a short U.S. conference trip, focusing instead on discrimination, morality laws, and border procedures as a trans traveler, while P4 argued that murder rates should matter more by default because they signal serious physical danger. Companionship also shaped interpretation: P5 evaluated Portugal and Poland through traveling with a non-binary partner, while P1 noted that queer friends could increase visibility and family could make them "*blend in*". P2 might still travel to Indonesia because she and her partner could hide or lie about being queer if necessary, while P6 noted that some legal indicators mattered less to her because she could pass more easily. Participants did not reject quantitative comparison, but resisted one fixed score for queer travel safety, aligning with prior work showing that personal, high-stakes decisions involve evolving priorities and contextual knowledge that exceed fixed-data assumptions [44, 53]. For design, this means preserving several safety dimensions and allowing them to be reinterpreted through identity, visibility, companionship, duration, and trip context.

F2 Lived experience is necessary safety evidence: Before introducing the experience layer, all participants except P8 already described relying on lived experiences, personal contacts, and informal accounts when judging destinations. Official data were appreciated as a first-pass overview, but could not answer the practical and embodied questions that mattered in travel decisions [7, 20]: whether one could "*hold hands*" (P4), express queerness publicly (P2), "*carry hormones*" safely (P4), navigate airport or border checks (P3, P4), or feel comfortable in everyday public space (P7). The experience layer therefore responded to an already articulated need. Participants valued its granularity, including city-level differences, tourist versus local perspectives, and concrete descriptions of what happened and why it felt safe or unsafe (P2, P3, P4, P6, P7). P3 imagined comparing Cape Town and Johannesburg, while P4 said the layer shifted interpretation from a blanket "*do not travel*" to more conditional judgments, such as traveling only to major cities. Participants also emphasized that experiences became more meaningful with contextual metadata, such as when the event occurred, whether it came from a tourist or local, and the surrounding situation (P2, P3, P5). For design, this means integrating experiences with official data as a first-class source of safety evidence, not an optional supplement. In line with prior work on situated knowledge [20, 31], such evidence should remain filterable and contextualizable by traveler and trip context, including who reported it, where and when it occurred, and whether it reflects a traveler or resident perspective.

F3 Trust is calibrated through transparency and comparison: Participants used comparison not only to identify safer destinations, but also to make sense of the data, test whether the system aligned with what they already knew, and decide when results required closer scrutiny. Some checked countries they had visited or knew about, as when P2 questioned South Africa's positive score given the contrast between Limpopo and Cape Town, or when P5 interpreted Portugal and Poland against earlier trips. Others compared countries to establish relative position within a region, for example when P1 moved across Serbia, South Africa, and Angola, or when P7 compared several European destinations. Comparison thus supported trust calibration and sense-making, extending prior work that frames comparison as central to understanding unfamiliar alternatives [27, 53]. Yet participants repeatedly questioned the adequacy of official metrics alone. Similar concerns appear in work on gender data gaps [1], racial discrimination and institutional trust [56], and migrants' interactions with formal systems [46], where official structures may be incomplete, opaque, or insufficiently trusted. Participants wanted clearer explanations of what scores meant, how they were calculated, which sources they came from, and whether zero values indicated low scores or missing data (P1, P2, P4). P1 asked for sample size and uncertainty around poll data, while P4 asked how the score was constructed and why they should trust it when it conflicted with prior expectations. This echoes feminist visualization arguments that visualizations should make assumptions, provenance, and absences visible instead of presenting summary values as self-explanatory [19]. Trust was further complicated because country-level summaries often felt too coarse, with participants pointing to strong within-country differences, for example between Cape Town and Limpopo in South Africa (P2), between Cape Town, Johannesburg, and other regions (P3), or across urban and regional contexts (P1, P6, P7). For design, this means curating official safety information into a compact, interpretable overview while keeping its assumptions and absences visible. Consistent with McCurdy et al.'s notion of *implicit error* [48], indicator meaning, provenance, score construction, and missing data should remain traceable to support scrutiny and self-verification. Comparison across countries, regions, and dimensions should therefore support trust calibration and sense-making, not only destination ranking.

F4 Experience input must balance expressiveness and structure: Participants could readily imagine sharing their own experiences, and their suggestions converged on a simple contribution model with a

safety rating, short narrative, contextual information, location, and time (P3, P5, P7). The main tension concerned how structured the narrative should be. Some preferred open text for nuance (P2, P6), while others wanted prompts around law enforcement, airport or border experiences, harassment, queer spaces, or interactions with locals (P4, P5). P3 proposed rating, identity, location, and short-description fields to support filtering; P5 proposed background information, optional prompted categories, and an overall safety rating on phone and desktop; and P7 suggested a general score plus trip context, area, time period, narrative text, and support for multiple sub-experiences within one trip. Across these variations, participants wanted contribution to remain easy enough to encourage participation, yet structured enough to make entries interpretable and reusable. They also raised concerns about privacy (P1, P4, P6, P8), verification and moderation (P8), and reporting bias, since negative incidents may be reported more often than positive ones (P1). For design, this means that contribution mechanisms should remain low-burden and expressive, while still providing enough structure to make entries searchable, comparable, and interpretable for later filtering and comparison. Consistent with Bressa et al.'s discussion of input visualizations [13], this structure should preserve the contextual and emotional character of personal accounts. At the same time, community input should be treated as valuable but not automatically trustworthy, since privacy, moderation, verification, and reporting bias shape what such data can responsibly support.

5 Design Requirements for Queer Travel Tools

Building on the Phase 1 domain characterization and the synthesis process outlined in Sec. 3.1, we derived the following design requirements for systems that support safety-informed queer travel decisions.

Official-information layer

R1. Curate official safety information into a compact and interpretable overview (grounded in F3). The system should consolidate dispersed official indicators, legal conditions, and related institutional information from multiple sources into a compact overview that is readable without prior legal or policy knowledge.

R2. Keep official safety information transparent and traceable (grounded in F3). The system should make indicator meaning, data provenance, and score construction explicit, so users can verify sources and interpret data while preserving trust and access to detail.

The central tradeoff in this layer is between readability and inspectability: official information must support intuitive decisions without obscuring its meaning or provenance.

Community-experience layer

R3. Integrate lived queer travel experiences alongside official data (grounded in F2). The system should surface personal, contextual accounts from queer travelers and allow official data to be contrasted with lived experience and local realities.

R4. Support contribution of lived queer travel experiences (grounded in F4). The system should let users contribute their own lived experiences in ways that remain low-effort and expressive, yet structured enough to make them searchable and comparable without flattening their emotional, practical, or context-specific aspects.

This layer balances openness and reuse: lived experiences must remain personal and contextual, yet structured enough to stay interpretable.

Decision-support layer

R5. Support personalization to the traveler and trip context (grounded in F1 and F2). The system should allow both official and community-contributed information to be tailored to the decision context, including identity, destination, time, safety priorities, and contributor status as traveler or resident.

R6. Support comparison and trade-off reasoning (grounded in F1 and F3). The system should support comparison across countries, regions, safety dimensions, summaries, and lived experiences, allowing users to examine social safety from multiple perspectives and levels of detail rather than through a single overall score or ranking.

Table 2: QUEERTRAVEL institutional social safety indicators. Type tags: [Cont] continuous, [Ord/N] ordinal with N levels, [Cont*] continuous partly continuous and otherwise ordinal. Abbreviations: SO = sexual orientation, GI = gender identity, HRT = hormone replacement therapy.

Indicator	Description	Type / values	Source
Non-Binary Recognition	Legal recognition of non-binary identities in official systems and law.	[Ord/4] 1.0 = recognized nationwide; 0.5 = varies by region; 0.2 = intersex only; 0.0 = none or unknown	Equaldex
Marriage Equality	Recognition of same-sex relationships; earlier recognition scores higher.	[Cont*] (0.5,1.0] = marriage, earlier = higher; (0.2,0.5] = partnerships, earlier = higher; 0.2 = foreign-only or unclear; 0.0 = none	Fergusson, HRW
Worker Protections	Workplace protections, especially employment discrimination.	[Ord/4] 1.0 = SO and GI; 0.5 = SO only; 0.2 = limited; 0.0 = none	Fergusson
Anti-Discrimination Protections	Legal protection against discrimination beyond the workplace.	[Ord/4] 1.0 = full constitutional; 0.5 = broad; 0.2 = limited; 0.0 = none	Fergusson
Violence Criminalization	Whether hate-based violence against queer people is criminalized.	[Ord/4] 1.0 = hate-crime penalties; 0.5 = incitement only; 0.2 = partial; 0.0 = none	Fergusson
Adoption Recognition	Adoption rights for same-sex couples.	[Ord/3] 1.0 = joint and second-parent; 0.5 = second-parent only; 0.0 = none	Fergusson
Poll-based Local Acceptance	Gallup public acceptance: whether the local area is good for gay and lesbian people.	[Cont] 1.0 = 100% happy; 0.0 = 0% happy or no data	Gallup
Trans Legal Identity Laws	Legal access to change gender marker or legal gender status.	[Ord/4] 1.0 = no surgery/HRT required; 0.75 = surgery required; 0.5 = no explicit law; 0.0 = prohibited	Fergusson
Trans Murder Rate	Reported trans murder rate, population-normalized and rescaled to [0,1].	[Cont] 0.0 = none or lowest observed; intermediate = linearly scaled; 1.0 = highest observed	Trans-respect
Same-Sex Relationship Legality	Whether same-sex relationships are legal.	[Ord/2] 1.0 = fully legal; 0.0 = illegal and punishable	Fergusson
Propaganda / Morality Laws	Whether the country restricts public queer expression, advocacy, or visibility.	[Ord/2] 1.0 = no restrictions; 0.0 = criminalized or limited	Fergusson

These requirements turn the previous two layers into a decision-support system: the official-information layer must make safety indicators interpretable and traceable (**R1**–**R2**), while the community-experience layer must make lived accounts both expressive and reusable (**R3**–**R4**), enabling users to filter, compare, and weigh destinations without collapsing safety into a single fixed notion.

6 The QueerTravel Application

We designed QUEERTRAVEL, a browser-based visualization tool for safety-informed queer travel decisions that combines official safety information and lived experiences in a single coordinated environment.

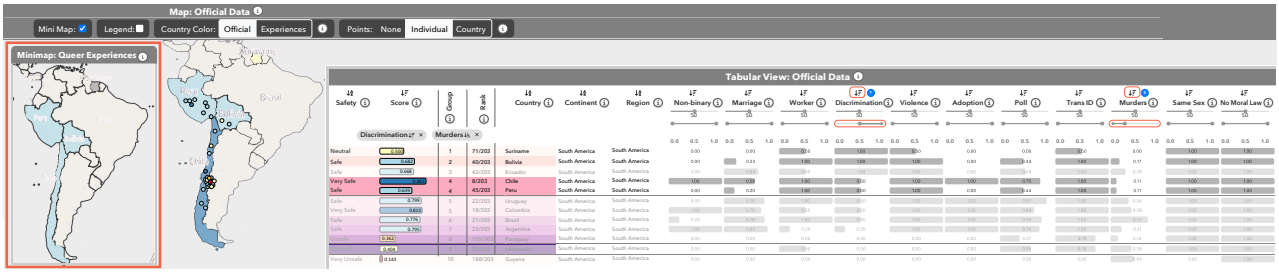

Fig. 3: QUEERTRAVEL interface centered on the tabular view, which supports inspection, filtering, grouping, and comparison of countries and indicators. Countries have been filtered and sorted by the selected *"Discrimination"* and *"Murders"* criteria (see dataset in Table 2); non-matching countries are grayed out, while colored cells show similarity groups. The minimap, annotated with the orange rectangle, has been enlarged and placed next to the main map to support comparison between country-level average queer experience scores and institutional social safety scores, while the main map retains the underlying clickable data points for inspection of the associated traveler stories.

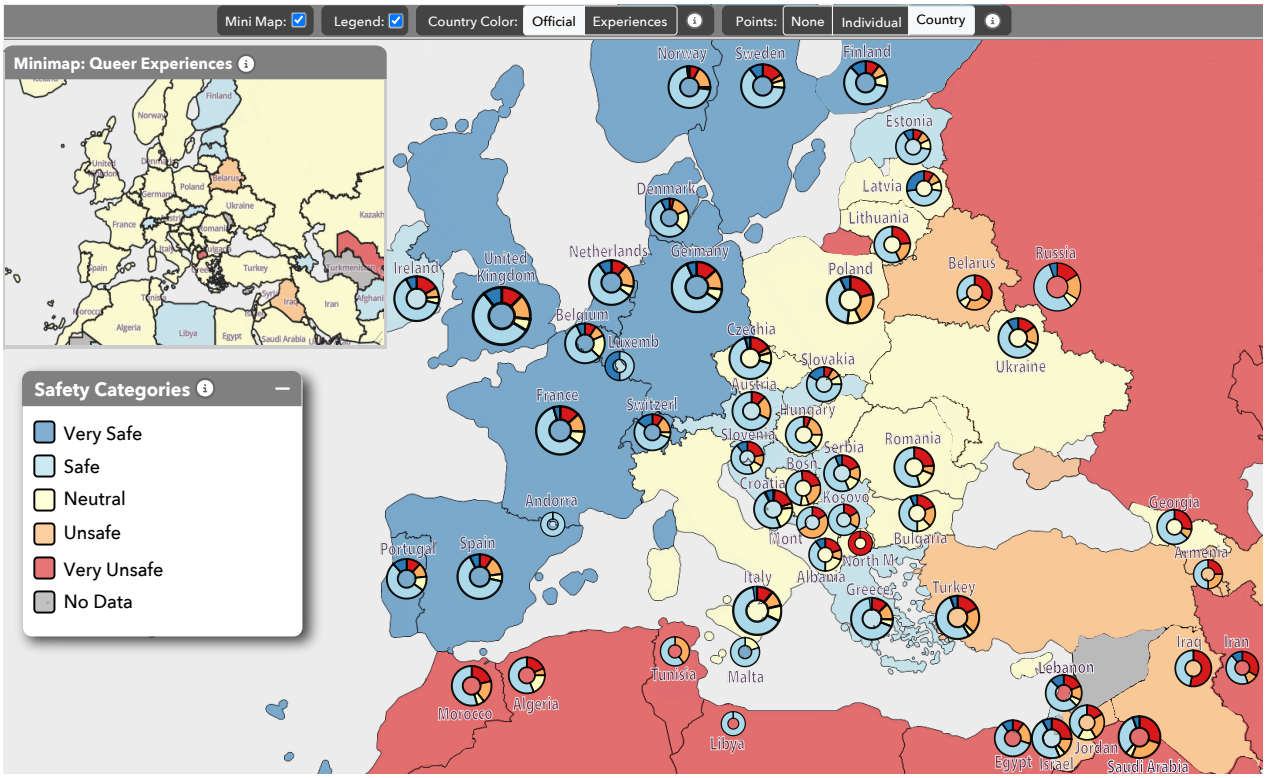

Fig. 4: QUEERTRAVEL aggregated view. Donut glyphs summarize queer social safety experiences by country. The open center reveals the underlying choropleth color, so glyph and map can be read together as a composite encoding of lived experiences in each country's institutional context.

Users can inspect destinations, tailor information to their decision context, compare alternatives, and add new experiences. The version presented here is the consolidated system after both study phases.

6.1 Official-information layer

6.1.1 Curated dataset of social safety indicators

We synthesized a country-level dataset covering 203 countries and eleven social-safety indicators, from which we derived an overall safety score (**R1**, Table 2). The dataset builds primarily on the *LGBTQ+ Travel Safety Index* by Asher and Lyric Fergusson [5], and was extended with *Equaldex* [23] for non-binary recognition, Human Rights Watch's marriage equality map [71], Transrespect's Trans Murder Monitoring project [66], Gallup's global survey on queer happiness [38], and complementary Wikipedia sources on queer and transgender legal status [75, 76]. We preserved Fergusson's original scoring logic while normalizing all eleven indicators to the [0,1] range. By default, the overall safety score is computed as the equally weighted mean of the normalized indicators, and countries are assigned to five safety categories (Very Unsafe, Unsafe, Neutral, Safe, Very Safe) by binning that score into equal-width ranges. For scoring, indicator directions were aligned so that all metrics contribute consistently to the aggregate, while displayed values retain their original semantics: higher values denote more favorable conditions for positively oriented indicators (*e.g.* legal recognition), but worse conditions for negatively oriented indicators (*e.g.* trans murder rate). The indicators are not fully independent; some capture overlapping aspects of queer safety (*e.g.*, marriage equality and same-sex relationship legality).[2] They also differ in type and granularity: some are continuous (*e.g.*, poll data and murder rates), while others are ordinal with a limited number of discrete values. Table 2 summarizes these differences using tags such as [Cont] for continuous variables and [Ord/N] for ordinal variables with N possible values; variables marked [Cont*] are continuous only within part of their range

[2]To quantify this overlap, we computed pairwise Pearson correlations across the eleven objective indicators. Across the 55 non-diagonal indicator pairs, the mean absolute correlation was 0.395 and the RMS correlation was 0.438, indicating moderate interdependence rather than complete redundancy. The full correlation matrix and supporting analysis are provided in the OSF supplementary materials under the `sensitivityAnalysis` folder.

and otherwise use ordinal scoring. The equal-weighted safety formulation serves as the default baseline (**R1**); users can later inspect its composition (**R2**) and adjust weights to reflect different priorities (**R5**; Sec. 6.3.1).

6.1.2 Representing institutional social safety indicators

QUEERTRAVEL builds on standard geographic and preference-based MCDM visualization techniques (Sec. 2.2). To translate multiple institutional social safety indicators into a compact country-level overview, we encode countries on a choropleth map (Fig. 1A) into five safety categories using a color-blind-safe diverging scheme (RdYlBu, [14]) (**R1**). We use a choropleth over alternatives, *e.g.* cartograms, since the travel context prioritizes geographic orientation, recognizable geography, coarse navigation across scales, and map space for overlaid experience data. We mitigate the choropleth's known areal-size bias (larger countries can appear more prominent) by linking the map with a table for detailed inspection, a search bar for direct lookup of destinations, and with the lived-experience layer (Sec. 6.2). A tabular view (Fig. 1C and Fig. 3) provides detailed access to the same institutional data (**R2**): rows are countries; columns show the eleven indicators, geographic fields, and four derived fields: total score, safety category, group, and rank. The table supports criterion-level inspection, weighting, sorting, and filtering. Information icons provide on-demand detail about metric meaning, source, and interpretation, further supporting traceability; coordinated map-table interaction reveals the selected country's row.

6.2 Community-experience layer

6.2.1 Input and representation of lived queer experiences

Users contribute a safety experience by selecting *"Share Experience"* (Fig. 1A), dragging a pin to the relevant location, and submitting a perceived-safety rating with optional narrative text and structured inputs, including tags, categorical identity information, age, resident or traveler status, and date (**R4**). This keeps contribution low-effort and expressive while capturing information needed for later filtering and comparison. Once submitted, the experience appears as a colored point on the map. Points use the same five-class color scheme as the choropleth, preserving comparability between lived and institutional signals, while stronger foreground-background contrast against the country fill makes divergent experiences deliberately more salient (**R3**). Users can alternatively aggregate points into country-level donut glyphs (Fig. 4), whose size reflects the number of experiences and whose slices show their composition across the same safety categories (**R3**). Selecting a point or country opens the experience detail panel (Fig. 1F), which lists the corresponding narratives; selecting a narrative highlights its location on the map. To support assessment of recency, the same donut-glyph encoding is reused across time bins in that panel to summarize the temporal distribution of experiences (**R3**). For rapid overview, experiences are also aggregated into an experience-based country-level score in a minimap (Figs. 1B and 3), and users can choose whether official data or lived experiences appear in the main map or minimap (**R3**).

Following Bressa et al., this layer serves as an *input visualization*: a visual representation used not only to encode an existing dataset, but also to collect new data and/or modify existing data, with prior input shaping how later contributions are entered and interpreted. In QUEERTRAVEL, users add experiences directly into a map that remains on screen and evolves over time as a collective artifact [13]. We retain individual points because queer travel experiences are contextual, personal, and often narratively specific. This creates a design tension. In typical dot maps built from fixed datasets, symbol placement, decluttering, or other layout optimizations can often be applied once the dataset and display scale are known. In QUEERTRAVEL, new experiences may be added at arbitrary times and locations, so overlap and density cannot be resolved through static preprocessing. Bressa et al. identify dynamic accumulation, readability, and scalability as challenges for input visualizations, and discuss aggregation, binning, and dynamic visual mappings as common responses [13]. They also note that aggregation may be unsuitable when contributions need to remain visible [13]. This tradeoff is central in QUEERTRAVEL. A simple bubble aggregation would reduce clutter, but would collapse heterogeneous experiences into a single magnitude, which is already provided by the minimap. We thus tolerate some density to keep contributions visible, especially since contributions from marginalized populations may remain sparse and should not disappear too quickly into summaries. Zooming to the city or neighborhood level, as expected in travel planning, reduces density; consistent color encoding keeps experiences legible in relation to institutional scores; and the detail panel (Fig. 1F) preserves access to the underlying narratives. We also use optional country-level donut glyphs (Fig. 4), which preserve experience composition across safety categories. These choices balance input visibility, readable accumulation, and access to individual contributions as the layer grows.

6.2.2 Curated community-experience dataset

QUEERTRAVEL was not deployed during the design study, and participant contributions were too sparse to exercise the lived-experience layer. We therefore constructed a curated community-experience dataset to evaluate QUEERTRAVEL under more realistic conditions and approximate the kinds of contributions the input layer is designed to support.

The dataset was assembled from two narrative sources containing place-linked queer experiences. First, we added 36 Reddit posts selected from travel- and region-related subreddits (*e.g.*, *AskAnAustralian*, *solotravel*, *asklatinamerica*) through manual screening for narratives describing concrete queer experiences tied to specific places. These posts were paraphrased and manually formatted into our data structure using information available in the narratives, including time or date, sexual orientation and gender identity when stated, and resident or traveler status when discernible. The exact geolocation of each experience was approximated using the coordinates of the referenced city obtained from the OpenStreetMap API, with a small amount of random jitter added to avoid overlap. Second, we expanded the dataset using a corpus of 123,209 entries from *Queering the Map* [40]. We preprocessed this corpus to identify entries relevant to travel and safety using travel-related keywords (*e.g.*, travel, trip, city, moved, visit, abroad, journey, holiday) and safety-related keywords (*e.g.*, safe, unsafe, danger, attack, harassed, scared, fear, threat, violence), and excluded non-English entries using *langid*. This yielded 11,019 candidate records. We then extracted temporal information where available using regular-expression matching for years between 1900 and 2025. Finally, records from both sources were classified into one of five safety categories (Very Unsafe, Unsafe, Neutral, Safe, Very Safe) using a zero-shot classifier (*DeBERTa-large-MNLI* [50]) because no human-coded ground-truth safety labels were available. Unavailable fields were left missing instead of inferred beyond the available evidence. This process yielded a curated dataset that closely resembled the structure of our input modality while preserving source-specific variation and incompleteness.

6.3 Decision-support layer

6.3.1 Personalization

In QUEERTRAVEL, personalization supports safety-informed travel decisions by allowing users to reinterpret institutional safety and narrow the alternatives considered. Users can adjust the weight of each institutional criterion in the overall score through the top sliders in the tabular view (Fig. 1C). They can then eliminate non-preferred destinations by constraining score ranges for specific institutional indicators through the bottom sliders in the same view, or by filtering by overall safety category in the side panel (Fig. 1E). Users can also specify location preferences through the search bar, at any granularity from a specific address to a country or continent, or through the geographic filters (Fig. 1E). Queer experiences can likewise be filtered by contributor identity, traveler or resident status, and time references (Fig. 1E).

6.3.2 Comparison

In Gleicher et al.'s terms, comparison in QUEERTRAVEL relies mainly on superposition and juxtaposition, augmented by coordination [27]. The most explicit comparison view is the radar chart (Fig. 1D), which compares institutional indicators through superposition: the hovered country is overlaid in a shared coordinate system with the world average, continental average, and a selected comparison country. Com-

parison is also supported in the map views. The choropleth enables spatial juxtaposition of countries and regions, allowing users to compare neighboring destinations and broader institutional safety patterns, while points and donut glyphs overlaid on the map (Figs. 1A and 4) superpose official and lived evidence in the same geographic frame. The minimap (Fig. 1B) adds coordinated juxtaposition of the complementary evidence layer: users can choose whether the main map or minimap shows official or lived data, resize and reposition the minimap (Fig. 3), and compare the two perspectives across geographic granularities, from neighborhood to continent. At a more analytical level, the tabular view (Fig. 1C and Fig. 3) supports juxtaposition across countries and indicators through rows, columns, and derived ranking fields. Sorting, filtering, grouping of similar countries, and weighting allow users to compare alternatives across criteria, inspect trade-offs, and progressively narrow candidate destinations. Comparison in QUEERTRAVEL is therefore distributed across coordinated views: hovering or selecting a country propagates across the map, table, radar chart, and experience panel, allowing users to connect comparisons across views, while individual views can be hidden for more focused analysis. This emphasis on multifaceted comparison aligns with recent findings that, in personal high-stakes decisions, comparison serves as an epistemic process through which decision makers construct understanding, test consequences, and stabilize preferences [53].

6.4 Usage scenario

We present a scenario on how QUEERTRAVEL supports safety-informed travel decisions using the datasets described in Secs. 6.1.1 and 6.2.2.

Başak, a trans woman living in the Netherlands, uses QUEERTRAVEL to identify marathon destinations where she would feel safe and comfortable. She begins with the U.S., a country marked as safe and offering many marathon options. The official indicators appear broadly favorable, but she wants to understand how trans women's lived experiences relate to that institutional picture. She filters experiences (Fig. 1E) to trans women and notices several red, very unsafe reports standing out against the blue country background. She selects one red dot, which opens the experience detail panel (Fig. 1F), and reads a report from a trans woman who traveled to the U.S. on 9 August 2023: "*I've experienced invasive airport screenings. Body scanners sometimes flag anomalies, and security staff have performed uncomfortable pat-downs. On one occasion, I made a light-hearted comment that ended the search quickly. These situations are humiliating but not uncommon for trans travelers.*" She also notices in the U.S. donut timeline that unsafe experiences have become more frequent in recent years, suggesting that institutional indicators, which are often updated more slowly, may not fully capture the current social climate.

She then turns to Brazil, another large country marked as safe and broadly comparable to the U.S. on many official dimensions, as shown in the radar chart (Fig. 1D). However, she notices an alarming trans murder rate. Because this criterion matters strongly for her decision, she uses the table view (Fig. 3) to adjust the acceptable range for the *Murders* indicator and tighten the *Discrimination* range. This progressively narrows the South American candidates to Suriname, Bolivia, Chile, and Peru; Suriname is later excluded because it is marked as Neutral and has no documented experiences. She then adjusts the minimap's size and position to compare the lived-experience layer more directly with the official metrics. These countries appear broadly comparable, but Bolivia has limited lived-experience data. Among the remaining options, Chile combines strong institutional values with a larger volume of available experiences and, after closer inspection, appears especially promising.

Başak then shifts to destinations closer to the Netherlands (Fig. 4), where shorter trips seem more plausible. Because of the large number of experiences, she switches to the donut-glyph view for a broad regional overview before zooming in. As she compares countries, she realizes that experiences cannot be interpreted in isolation. Although the donut slices use the same safety categories across countries, their meaning depends partly on the broader country context reflected in the map background color and official metrics. She therefore reads the donut glyphs and background color as a composite visual encoding, using the institutional profile to contextualize reported experiences. She then zooms into marathon locations and returns to the individual-dot view, where closer inspection shows that countries with less favorable overall profiles can still contain welcoming neighborhoods, while conventionally safe countries can include sharply contradictory experiences. She also notices that resident versus traveler status shapes both the kinds of experiences reported and how they are understood. Using the composite donut-glyph view for quick orientation and the narrative detail view for closer inspection, she decides that Spain and Malta are good marathon destinations for her next trips, combining favorable social safety prospects with the appeal of warmer southern destinations.

7 PHASE 2: QUEERTRAVEL EVALUATION

This phase examined how queer travelers used QUEERTRAVEL with official data (Sec. 6.1.1) and curated community-contributed experiences (Sec. 6.2.2), how they perceived contributing their own experiences, and how the tool supported their decisions.

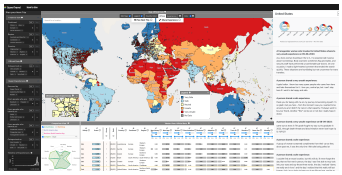

Fig. 5: Phase 2 QUEERTRAVEL version

7.1 Method and Procedure

After consent, demographics, and an introduction, participants (Sec. 3.2) were shown QUEERTRAVEL and its underlying datasets, and were encouraged to think aloud throughout the session. The Phase 2 version of the tool (Fig. 5) was close to the final system (Sec. 6), differing only in minor interface and usability refinements. The country-level donut-glyph aggregation (Fig. 4) was not included; instead, donut glyphs appeared only in the timeline within the experience panel, as the study focused on tracing and interpreting individual experiences.

Participants then watched a short video of QUEERTRAVEL's main features and completed brief training on core interactions: switching between official and experience map views (Fig. 1A), identifying and filtering official indicators in the table (Fig. 1C), comparing countries and regions, sorting and interpreting grouped rows, adjusting indicator weights, filtering by region and time (Fig. 1E), contrasting official and experience-based safety, and inspecting the amount and distribution of reported experiences over time and safety category (Fig. 1F).

Participants were then asked to plan their next trip with QUEERTRAVEL and choose a socially safe destination. During this task, we observed how they interpreted information, which comparisons they found useful, and how the system supported or constrained their decision making. They were then asked to recall a previous safety-related travel experience and, if comfortable, share it through QUEERTRAVEL while avoiding identifiable sensitive information. This elicited reflections on the contribution process, including what participants considered appropriate to share, their willingness to contribute, and how well the input workflow matched their expectations. Finally, participants discussed which features should be kept, improved, or removed, and commented on the design, data, and overall tool.

7.2 Findings

F5 Decision making via elimination, comparison, and contextual fit: Participants engaged substantively with QUEERTRAVEL 's decision-support layer, combining comparison and personalization across official indicators and real experiences. We observed four recurring strategies. In *targeted evaluation*, participants began with a destination already in mind, such as India (P9), Mexico (P11), Italy (P14), Indonesia (P16), or Belgium (P18), and used country search and inspection to judge whether it remained acceptable. In *option-space reduction*, QUEERTRAVEL acted as a pruning environment: P12 excluded continents, kept countries above a broad safety threshold, and refined them through experience filters and decisive criteria into a shortlist of 10–20 options, while P10, P15, and P17 used lighter first-pass screening to rule

out clearly unsuitable places. In *experience-first reasoning*, participants treated lived accounts as the main entry point: P13 prioritized experiences over "*paperwork*" when they resembled concrete tourist situations; P14 used them to understand where and how public incidents occurred; P16 found them more travel-relevant than official summaries, especially when reported by similar people; and P18 first looked for stories involving women, partners, travelers, and place-specific cues. In *official-first thresholding*, participants used official indicators for fast travel-relevant constraints, especially for unfamiliar destinations: P10 screened through discrimination, violence, murder, and public-expression restrictions; P12 emphasized physical safety and hate-crime penalties; P17 used discrimination, violence, marriage, and murder; and P11 first read official information before distinguishing travel-relevant from residence-relevant dimensions. P18 made this conditional logic explicit, beginning with experiences for familiar Belgium but relying more on official indicators for less familiar places such as Kyrgyzstan.

F6 Divergence between identity matching and situational comparability: Similar to Phase 1, participants cared about who an experience came from, but rarely wanted a simple one-to-one identity match, such as trans participants reading only trans people's experiences. Instead, they looked for experiences comparable to their likely travel situation, embodiment, visibility, and companionship. For P14, what mattered was not simply another gay man's story, but an account mapping onto public gender nonconformity, such as moving through public space in drag and facing hostility because of presentation. For P11, the key issue was whether a destination would recognize and treat a married couple appropriately when traveling with a wife. P18 similarly looked for stories involving women, partners, travelers, and concrete place cues. Across these cases, identity remained relevant, but usually as one part of a broader judgment about whether an experience reflected a similar way of being, moving, and being seen in public.

F7 Divergence between expressive input and decision utility: Another tension appeared between the experiences participants wanted to retrieve for decision making and those they naturally contributed. When reading experiences, participants looked for practical travel cues, such as airport treatment, public visibility, partner-related situations, neighborhood differences, or everyday movement through public space. P9 wanted a rough sense of "*how it is there*" and found accounts about family or coming out less useful than cues about public life in the city. P13 and P14 similarly distinguished emotionally meaningful stories from tourism-relevant ones, treating intimate *Queering the Map*-style entries as too personal for travel planning. Yet when contributing, participants often shared broader, more atmospheric, or more expressive accounts than the evidence they had sought while deciding. P11 described activist community and intersectional belonging in Portugal, P13 wrote about traveling with a partner in Thailand without needing to hide, and P9 expressed a general societal feeling over an area rather than a single incident. This extends Bressa et al.'s account of input visualizations by showing that, in decision-support settings, expressive input can encourage contribution without necessarily producing the structured, situationally comparable cues readers need for filtering, matching, and retrieval [13]. Together with **F6**, this points to preserving lived voice while computationally enriching experiences with inferred tags, situational labels, or other derived metadata.

F8 Trust calibration beyond transparency: Findings from Phase 1 (**F1–F4**) were strongly reinforced in Phase 2, but **F3** on trust became especially revealing. In principle, QUEERTRAVEL offered what participants had asked for in Phase 1, including explicit data provenance, richer source explanation, real data, more filtering, and traceability between overview summaries and underlying evidence. Yet rather than mitigating trust concerns, this richer inspection space often magnified the need for trust calibration by making tensions more visible between aggregated summaries and the evidence participants themselves considered more meaningful. P9, for example, questioned India's neutral experience summary after inspecting the timeline donut chart in the experience detail panel and noticing both an early unsafe report and many undated experiences. P16 similarly objected that Indonesia's displayed average did not match the filtered recent experiences and argued that more recent accounts should count more heavily. P11 treated Mexico's experience layer as weak evidence because most entries lacked time information, and also questioned whether violence-related indicators captured violence specifically against queer people rather than broader social violence or reporting bias from over-reporting negative events. Thus, deeper inspection produce more active scrutiny than trust.

This scrutiny was not simply distrust. More detailed interaction also helped participants make their own judgment rather than passively accept a summary label or score. This pattern resonates with McCurdy et al.'s notion of *implicit error* [48]: discrepancies not fully encoded in the data and thus resolved through contextual interpretation. Across both phases, participants repeatedly questioned whether zeros reflected poor conditions or missing data, and drew on prior expectations, outside knowledge, and comparisons with nearby places, familiar destinations, or more local evidence to judge whether outputs felt believable. These trust negotiations were more intense for participants in less protected positions, for whom, for example, traveling as a visibly gender-nonconforming person versus someone able to pass more normatively could materially change what counted as credible and decision-relevant safety information, while participants with more protected starting points could move more quickly beyond safety toward other destination considerations. This supports d'Ignazio and Klein's argument that data interpretation is shaped by unequal standpoints rather than a neutral view from nowhere [20]; at the same time, our findings are limited by a participant pool that, while diverse, leaned relatively Western and did not capture the full spectrum of marginalization, especially among those facing more severe precarity across race, class, nationality, disability, or legal status.

Taken together, these findings suggest that in tools for marginalized populations, trust is not achieved simply by adding provenance, explanation, or drill-down. Such features remain necessary, but they do not eliminate interpretive labor. In high-stakes settings, especially for users differing in visibility, vulnerability, and social protection, richer inspection may reveal more ambiguity rather than less. The value of these systems may therefore lie less in making trust effortless than in helping users interrogate evidence, compare summaries with underlying data, anticipate uncertainty, and form more self-aware judgments in contexts where full certainty is rarely possible. At the same time, QUEERTRAVEL has not been deployed in the wild, where trust would also be shaped by technical and governance concerns especially salient for marginalized populations, including privacy, anonymity, misuse, moderation, and community safety. This is especially relevant for future mobile or in-situ use [12], where trust would depend not only on representation, but on if users feel safe using the system in place. We also cannot yet assess how well experience input and its visual representations would scale under sustained real-world use, where larger volumes, uneven participation, noisy or strategic reporting, and evolving community practices could reshape both what is contributed and how it can be meaningfully represented. Future work should examine how these observations, while likely relevant beyond this case, hold or shift across other marginalized groups, including migrants and refugees, racialized minorities, disabled people, sex workers, and others facing distinct forms of vulnerability.

8 CONCLUSION

This work contributes to visualization tools that support marginalized populations as decision makers, not only as subjects of risk, vulnerability, or reporting. In a two-phase design study with queer participants, we examined how social safety is perceived in travel decisions, identified what mainstream resources leave out, and developed QUEERTRAVEL, which brings together curated official indicators and community experiences in a shared decision space. Our findings show that safety is not a fixed property of a destination, but a situated judgment shaped by identity, visibility, and trip context; that lived accounts meaningfully complement institutional data; and that trust depends not on eliminating ambiguity, but on helping users inspect, compare, and interpret evidence. We hope this work encourages visualization for marginalized populations to move beyond summarizing risk and support agency, situated judgment, and participation in safety-critical decisions.

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