Proposed Title: Digital Gatekeepers? A Sociological Study of AI and Immigrant Integration in Norway

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1. Background and Rationale

Artificial intelligence (AI) is reshaping how governments design and deliver services. International frameworks converge on principles for trustworthy, human-centred AI (High-Level Expert Group on AI, 2019; OECD, 2019). At the same time, empirical evidence shows algorithmic systems can entrench inequities if implemented uncritically. In Europe, awareness and literacy around algorithms are uneven across socio-demographic groups, creating an algorithmic divide in who can meaningfully benefit from digital government (Eder & Sjøvaag, 2024). In Norway, despite high digitalization, digital exclusion is stratified. Statistics Norway reports that poorly integrated immigrant women are significantly less likely to use digital public services than well-integrated immigrants (Statistics Norway, 2022).

Norwegian municipalities are already piloting AI in frontline interactions. **Kommune-Kari**, a municipal chatbot, is deployed in more than 80 municipalities (as of August 2025) to answer resident queries, often as the first touchpoint with local government (ETAPAS Project: SINTEF-Prokom, n.d.). In **Bergen kommune**, chat with the bot and chat with staff occur in the same window, which allows escalation to a human when needed. This can be an inclusion safeguard for newcomers navigating unfamiliar rules and rights (Bergen kommune, n.d.). As of August 2025, the landing widget on Bergen kommune's site displayed Norwegian only. This will be verified during fieldwork. For migrants without proficiency in Norwegian, this may pose a barrier to effective use.

Alongside general-purpose chatbots, municipalities and partners are piloting AI-supported integration services, such as personalized language-learning tools, job-matching, and guided navigation. In Norway, an NTNU master's project piloted an AI integration portal, highlighting both translation potential and skepticism in sensitive uses where human oversight remains important (Arul & Austad, 2024). Such efforts reflect national integration policy goals but raise questions about whether AI genuinely supports inclusion in practice (IMDi, 2024; Government of Norway, 2018-2022).

Norway's National Strategy for Artificial Intelligence anchors public-sector AI in trust, human rights, privacy, and user-centric services and references OECD values (Norwegian Ministry of Local Government and Modernisation, 2020; OECD, 2019). Yet principles do not guarantee practice. If chatbots are monolingual or trained on majority-population queries, or if integration tools are designed without migrant input, they can inadvertently exclude those with limited Norwegian, low digital literacy, or irregular life histories (Statistics Norway, 2022).

Problem statement: While national policies emphasize trustworthy AI, the actual deployment of chatbots and integration tools may reinforce existing inequalities, stratifying immigrants into those who can navigate digital systems and those left behind. This study

asks not only how AI functions technically, but how it reconfigures social boundaries of belonging, trust, and participation in everyday encounters within Norway.

Fit with PhD Fellowship in Digital Sociology / Sociology of Artificial Intelligence: This project sits at the intersection of migration, digitalization, and social inequality. It examines how AI systems deployed by municipalities function as new "digital gatekeepers" that shape immigrants' everyday encounters. By focusing on access, belonging, and trust, the project directly engages with the faculty's strengths in digital sociology, sociology of knowledge and expertise, and the sociology of organizations. It will provide a sociological account of algorithmic governance in everyday life, linking classical themes of belonging, discretion, and boundary-making to emerging issues in digitalization and AI.

Affiliation with Research Community: The project will be affiliated with the **Center for Digital Transformation (CeDIT)** and the Department of Sociology and Social Work. This ensures the project is anchored in an active research community while contributing new perspectives on how digital technologies reshape social structures and inequalities.

2. Research Aim and Questions

2.1 Aim
To examine how municipal AI tools, specifically **Kommune-Kari** and AI-supported integration helpers, contribute to immigrant integration and social inclusion. The study will assess opportunities for empowerment and risks of exclusion and identify how these technologies reconfigure social boundaries of participation, belonging, and trust in everyday encounters. More broadly, the project aims to contribute to digital sociology by showing how AI systems redistribute discretion, mediate institutional encounters, and shape the conditions of inclusion in contemporary Norway.

2.2 Research Questions
- How does Kommune-Kari function as an entry point for immigrants to access municipal information and services?
- How do AI-supported integration services (for example, digital language learning, job-matching platforms, or service navigation assistants) support immigrants?
- What barriers, whether technical, social, or institutional, limit the effectiveness of these tools in promoting integration, and how can governance frameworks improve inclusivity?
- How do these cases illustrate wider sociological dynamics of digital discretion, expertise, and algorithmic governance?

2.3 Dissertation Format and Planned Articles
This dissertation will be article-based and will comprise three peer-reviewed papers, each addressing a different dimension of municipal AI and immigrant integration while contributing to wider debates in digital sociology and the sociology of AI.

- **Conceptual Article: From Street-Level to System-Level? Re-centering Discretion in Municipal AI through Digital Sociology**
  Building on Lipsky's (2010) classic theory of street-level bureaucracy, scholars have noted how digital systems increasingly act as **"digital street-level bureaucrats"** (Peeters & Schuilenburg, 2018), redistributing discretion across human-machine interfaces. It will bridge this literature with frameworks of Responsible Research and

Innovation (Stilgoe et al., 2013; Von Schomberg, 2013) and inclusive innovation (Foster & Heeks, 2013). The article will define the notion of 'digital discretion' and propose an accessibility framework for evaluating municipal chatbots. Illustrative cases from Norway will ground the argument, while situating it within debates in digital sociology, inequality, and the sociology of professions. Target outlets include Journal of Public Policy, Sociology Compass, Information, Communication & Society, or Journal of Ethnic and Migration Studies.

- **Empirical Article (Deep Case): Kommune-Kari in Bergen: Access, Escalation, and Inclusion for Newcomers**
This article will present a qualitative case study of the Bergen municipality's use of Kommune-Kari. Drawing on documentary analysis, semi-structured interviews with immigrant users, municipal leaders, and frontline staff, as well as a participatory workshop, it will analyze how the chatbot functions as a first point of contact for immigrants. Focus will be on language accessibility and the role of escalation to human staff in shaping newcomers' experiences of trust and inclusion. Optional use of aggregate usage data will complement the qualitative findings where available. Target outlets include Public Management Review or Government Information Quarterly.

- **Complementary Case: Targeted Integration Helper**
The third article will focus on a targeted AI-supported integration service (such as a digital language-learning tool, job-matching platform, or service navigation assistant in Vestland or the Oslo region). Adding on to the role of Kommune-Kari, the article will examine how such tools address immigrant-specific needs that general-purpose chatbots often overlook. It will analyze design features such as multilingual support, user onboarding, and measures of empowerment (e.g., confidence in service navigation, recognition of skills). By exploring this complementary angle, the article will show how targeted helpers and general-purpose chatbots can jointly shape integration pathways. The analysis will also assess whether these tools replicate existing barriers or provide new modes of inclusion. Target outlets include Information Polity, Policy & Internet, or Journal of Ethnic and Migration Studies.

3. Theoretical and Conceptual Framework

This project draws on four interrelated literatures that will provide a robust framework for analyzing how municipal AI tools shape immigrant integration in Norway.

3.1 Responsible Research and Innovation (RRI): RRI provides the normative foundation, focusing on anticipation, inclusion, reflexivity, and responsiveness (Stilgoe, Owen, & Macnaghten, 2013). Von Schomberg (2013) argues that innovation should not only pursue efficiency but also ethical acceptability, sustainability, and societal desirability. This lens helps assess whether municipalities deploying AI anticipate risks of exclusion, meaningfully include migrant perspectives, and adapt when unintended consequences arise.

3.2 Inclusive Innovation: Inclusive innovation asks who benefits from innovation, focusing on marginalized groups (Foster & Heeks, 2013). While Norway is highly digitalized, exclusion remains uneven: Statistics Norway (2022) shows that poorly integrated immigrant women are far less likely to use digital services than well-integrated immigrants. This framework highlights intersectional barriers and guides analysis of whether general-purpose tools like

Kommune-Kari extend access equitably or whether targeted integration helpers provide more meaningful support.

3.3 Sociotechnical and Digital Sociology Perspectives: AI governance frameworks emphasize fairness, transparency, accountability, and human-centeredness (OECD, 2019; High-Level Expert Group on AI, 2019). Science and Technology Studies (STS) reminds us that technologies are sociotechnical systems shaped by norms and institutions (MacKenzie & Wajcman, 1999). Winner (1980) showed that artifacts embody politics; in municipalities, chatbots and integration algorithms can reshape how discretion is exercised and how citizens encounter the state. Within sociology, this connects directly to digital sociology debates on algorithmic governance, expertise, and inequality, where digital infrastructures redistribute power and redefine everyday encounters with institutions. Drawing on Lipsky's (2010) street-level bureaucracy, and extensions into digital street-level work (Buffat, 2015; Peeters & Schuilenburg, 2018), this project situates AI not as neutral infrastructure but as a new arena for studying how discretion, boundaries, and belonging are mediated by algorithms.

3.4 Intersectionality: Finally, intersectionality ensures that immigrant populations are not treated as homogeneous. Crenshaw (1989) showed how overlapping identities such as gender, race, and class create distinct disadvantages. Ulnicane (2024) extends this to AI governance, noting how systems can amplify exclusions when they fail to account for diverse user needs. This framework will help uncover hidden exclusions and evaluate whether AI initiatives respond to varied and intersecting identities, with particular attention to how migration status interacts with gender, class, and language ability in shaping digital inclusion.

4. Methodology

4.1 Research Design
This study will adopt a qualitative case study design (Yin, 2018). Case studies are well-suited to answering "how" and "why" questions in real-world settings (Yin, 2018), especially when investigating complex socio-technical systems like municipal AI. The aim is not to generate statistical generalizations but to produce analytically rich insights into how AI-mediated encounters shape immigrant belonging, everyday practices, and integration trajectories. The research will also focus on contributing to wider debates in digital sociology on how algorithms mediate institutional encounters and redistribute discretion. The scope is calibrated to what is realistically achievable within the three-year PhD period.
The design will involve two interrelated cases:
- Kommune-Kari, as deployed in Bergen municipality, focusing on its role as a digital "front door" to public services.
- An AI-supported integration helper (e.g., digital language learning or job-matching tools), treated as a complementary case that allows me to explore targeted interventions. If no single integration tool is actively in use, I will instead examine a cluster of digital initiatives operated by NAV Vestland or local NGOs.

By placing a general-purpose tool (Kommune-Kari) alongside a targeted integration tool, the research captures both breadth (how newcomers encounter mainstream AI-enabled services) and depth (how specialized tools attempt to meet immigrant-specific needs).

4.2 Scope and Case Selection
The research will be conducted in Vestland county, with Bergen as the primary field site. Bergen is Norway's second-largest municipality, home to a diverse immigrant population

(Statistics Norway, 2024), and has been an early adopter of Kommune-Kari (Bergen kommune, n.d.; ETAPAS Project: SINTEF-Prokom, n.d.). This makes it an appropriate and feasible site for studying language accessibility, usability, and escalation mechanisms. It also provides a critical case for examining how digital infrastructures reshape state–citizen encounters in practice.

For the integration-helper case, Bergen and surrounding municipalities have piloted various AI or digital support services in collaboration with NAV and NGOs. I will work with local partners to identify the most suitable case(s) based on their relevance, feasibility and complementarity (highlighting what "tailored" AI looks like). The selection will prioritize tools with multilingual support or explicit onboarding for newcomers.

4.3 Data Collection

I will employ a triangulation strategy to collect data from multiple angles, reducing bias and strengthening validity.

4.3.1 Document Analysis

I will analyze municipal policy strategies, system specifications, and evaluations to clarify the official narratives: what the systems are intended to achieve, how they are governed, and how inclusion is framed.

4.3.2 Semi-Structured Interviews

The semi-structured interviews will capture the lived experiences of different stakeholders. Interviews will not only capture integration outcomes but also trace how expertise, discretion, and trust are negotiated in algorithm-mediated interactions. Around 15-20 interviews will be conducted, distributed as follows:

➔ **Immigrant users (8-10 across both cases):** Sampled purposively to reflect diversity in gender, age, length of stay, education, and language proficiency.
➔ **Municipal leaders and project managers (4-5):** To understand governance rationales, design choices, and procurement processes.
➔ **Frontline staff (3-5):** Caseworkers or service staff who interact with or support immigrants using these tools.

4.3.3 Participatory Workshops

I will hold two participatory workshops (one per case) where immigrant users, staff, and municipal leaders discuss system strengths and challenges together. Workshops serve a dual purpose:

● Generating data on collective sense-making and user feedback.
● Offering a space for reflexive dialogue, consistent with RRI's inclusion and responsiveness principles. It will also allow observation of how diverse actors make sense of algorithmic systems in collective settings.

Workshops will also include a brief, optional self-efficacy questionnaire to capture changes in participants' confidence navigating services.

4.3.4 Observation and Usage Statistics

Where feasible, I will complement interviews and workshops with observations of meetings or demonstrations and review available usage statistics (e.g. frequency of use, escalation to human staff). If detailed logs are unavailable, I will rely on summary figures, user diaries, and interview accounts to triangulate effectiveness.

4.4 Sampling Strategy

Immigrant participants will be recruited purposely to ensure variation in gender, age, and time in Norway. Municipal leaders and staff will be selected based on their involvement in the design, implementation, or use of the systems. Workshops will bring together a mix of these actors to ensure dialogue across perspectives.

4.5 Language Considerations

Interviews will be conducted in the language most comfortable for participants. When Norwegian or English is insufficient, professional interpretation will be arranged. My working knowledge of Norwegian will support engagement with documents and staff, while translation will ensure inclusivity and accuracy. This strategy will minimize exclusion and acknowledge that language itself is central to the research question.

4.6 Data Analysis

All qualitative data will be transcribed and coded thematically using NVivo. Coding will include relevant categories drawn from the theoretical framework, and themes emerging from the data.

- Within-case analysis will generate a detailed narrative for Kommune-Kari and the integration helper.
- Cross-case synthesis will identify broader sociological patterns of inclusion, exclusion, and digital discretion, linking case findings to debates in the sociology of AI and algorithmic governance.

Triangulation of documents, interviews, workshops, and usage data will strengthen validity. Member-checking (sharing findings with participants) will further enhance trustworthiness.

4.7 Risks and Fallback Strategies

- **Access risk:** If access to system data or municipal staff is limited, I will rely more heavily on public documents, user interviews, and NGO contacts.
- **Case fragility:** If no active integration helper is available in Bergen, I will shift to a cluster of digital initiatives or include a nearby municipality (e.g., Askøy or Oslo).
- **Recruitment challenges:** If immigrant participants are difficult to reach, I will collaborate with NGOs, churches, and immigrant networks to connect with them.

4.8 Ethical Considerations

The project will follow the guidelines of the Norwegian National Research Ethics Committees (NESH) and will be registered with Sikt. Informed consent, confidentiality, and secure data storage will be strictly upheld. Special care will be taken with vulnerable participants and interpreters will be briefed on confidentiality and neutrality.

5. Resource Needs

- Funding for professional interpretation services for interviews and workshops.
- Travel within Vestland (Bergen and surrounding municipalities).
- Transcription services and NVivo license for qualitative coding.
- Modest budget for stakeholder workshops (venue, refreshments, materials).
- Secure data storage in line with UiA and NESH requirements.

6. Implementation Plan

Year 1

- Refine research design, expand literature review.
- Secure access agreements with Bergen kommune, NAV Vestland, and NGOs.
- Apply for ethics approval (Sikt).
- Pilot 2–3 interviews to test instruments.
- Start data collection for **Case 1 (Kommune-Kari)** (documents + 5–6 interviews).
- Internal milestone: present refined design at UiA departmental seminar.

Year 2

- Continue **Case 1** fieldwork (remaining interviews + participatory workshop).
- Begin **Case 2** fieldwork (documents, 5–6 interviews, 1 workshop).
- Transcription, coding, and within-case analyses.
- Draft **Article 1 (conceptual)**.
- Internal milestone: present preliminary findings at UiA departmental seminar or CeDIT research seminar.

Year 3

- Complete cross-case analysis.
- Draft and submit **Article 2 (empirical)** and **Article 3 (complementary case/governance lessons)**.
- Write dissertation summary (kappe).
- Dissemination: policy brief, stakeholder workshop in Bergen/Oslo, and journal submissions.
- Submit PhD thesis.

7. Expected Outcomes

a. Academic Contributions
- The dissertation will consist of three peer-reviewed articles: (1) a conceptual paper on digital discretion and RRI, (2) an empirical case study of Kommune-Kari, and (3) an article on integration helpers as a complementary tool. Together these articles will advance sociological debates on digitalization, digital society, algorithmic governance, migration, and inequality, while also providing practical guidance for municipalities.

b. Practical Contributions
- Concrete recommendations for municipalities on multilingual design, escalation pathways, and migrant participation in AI development.
- Development of a concise **"Responsible AI for Integration" toolkit** for use by municipal staff.
- Capacity-building through workshops with municipal employees and immigrant communities in the Vestland region.

c. **Policy Relevance**
- Ground-level evidence to support Norway's National AI Strategy and immigrant integration policies.
- Input to the EU AI Act implementation with a municipal-level perspective.
- Enhance UiA's Department of Sociology and Social Work and the Center for Digital Transformation (CeDIT) profile in digital sociology, sociology of AI, migration studies, and digital transformations of contemporary Norway.

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