University of North Texas

Inclusive Services to Enhance Immigrants' Resilience to Natural Disasters

1. Introduction. The University of North Texas is seeking $410,911 for a 3-year **Applied Research** grant project that aims to enhance public library services for immigrants in times of crisis, strengthen the resilience of under-resourced immigrant groups, and contribute to the overall well-being of communities. This project aligns with the **National Leadership Grants for Libraries** program Goal 4 and Objectives 4.1 & 4.2. It will support the development and implementation of emergency and disaster management plans to strengthen the ability of libraries to provide services to affected communities. Three research questions will be investigated: RQ1: What are the information needs of immigrants in under-resourced communities in disasters? RQ2: What is the status of public library practice in inclusive service for immigrants in disasters? RQ3: What inclusive services can be implemented by public libraries to address the gaps in immigrants' needs in disasters?

2. Project Justification. Natural disasters such as hurricanes and wildfires can strain resources, disrupt normal routines, and exacerbate inequalities. Immigrants in under-resourced communities are especially vulnerable to disasters. Due to language barriers, legal status, social marginalization, and cultural differences, immigrants face challenges in the access to related information, government assistance, and social support for disaster preparedness, response, and recovery. In the United States, approximately 14% of the population includes immigrants from various global locales; In 358 counties, 10% to 54% of the residents are either naturalized or non-US citizen immigrants, many of whom are non-English speakers or English learners, according to the American Community Survey (ACS) data in 2022. Public libraries play a vital role in supporting community resilience to crises by providing public spaces, digital resources, information services, and many other needed assistances ([IMLS, 2020](#)). Providing inclusive services for immigrants is important to support their resilience building and a vital component of inclusivity and equity. However, there is a current lack of understanding on how public libraries serve the most in-need immigrants in disasters due to several factors: (i) Although there are studies on the vulnerability of immigrants in disasters, not much has focused on the needs of immigrants from under-resourced communities. (ii) Public libraries have served immigrants in their practices but there is a lack of comprehensive systematic research that goes beyond case studies on inclusive planning and development of services for immigrants, especially in disaster settings. (iii) Due to factors that limit funding and staffing for public libraries' environmental scanning efforts, many public libraries are not always fully aware of the needs and challenges faced by immigrants in under-resourced communities—opening the way for gaps in the effectiveness and benefits of services and outreach programs aimed at immigrants in under-resourced communities.

The PI has identified the most under-resourced and in-need immigrant communities in the United States using counties' population, resource, and natural risk profiles. Through a systematic investigation of immigrant communities' information needs and public library services, this project will develop the knowledge and toolkit to enhance the ability of libraries to support under-resourced immigrants in emergency and disaster management. By mitigating the risks and impact of disasters on vulnerable immigrant groups, the project will reduce the potential inequality for immigrant communities, which is vital to fostering social cohesion and sustainable development.

3. Project Work Plan. This project will use mixed methods to investigate the information needs of immigrants in under-resourced communities and public library services for immigrants in disasters. In a preliminary study, the project team utilized publicly available data, including the demographics of populations from the [ACS](#), [natural hazard risks](#) from the Federal Emergency Management Agency (FEMA), and [broadband use data](#) from the National Telecommunications and Information Administration, and identified the top 15 counties in the country that are in critical need of disaster services for immigrants. These counties have a high immigrant ratio in the population, a high risk of natural hazards, and a low rate of broadband use. Under-resourced communities are identified based on the poverty rate of census blocks. Based on the public library information obtained from the IMLS, there are 48 public libraries in identified areas, varying in sizes and types. The proposed mixed-methods research will be conducted in the identified areas, with the recruitment of public library staff and immigrant community members as research participants. More locations and their public libraries will be selected for study if needed. Appropriate IRB approvals will be secured for all surveys and interview studies.

Research Objective 1: Identify the information needs of immigrants in disasters. A mix of quantitative and qualitative methods will be used to obtain input from immigrants in the targeted locations with varying circumstances, including the ones using the Internet and the ones without broadband use. This work will include two components: (i) Analysis of user communication data on social media during disasters to identify

issues faced by immigrants. Previous studies find the ownership of smartphones among immigrants is greater than 90% and that low-income populations heavily rely on smartphones for social activities. This opens opportunities to use user-generated data online to surface the needs and challenges of people in disasters. Under the National Disaster Recovery Framework promoted by FEMA, the team will utilize artificial intelligence models to comprehend issues from physical, economic, psychological, and social perspectives in social media posts during disasters. The study will then adopt user profiling algorithms to estimate the demographics of users and identify potential immigrants from under-resourced communities. This study will generate insights of a comprehensive list of the potential issues pertaining to immigrants, however, has limitations due to the potential errors in user profiling and the biased representation of social media data. A qualitative study will be followed to complement this study. (ii) Survey and interview with immigrants. We estimate to survey ~200 immigrants and conduct interviews with ~20 immigrants from the targeted locations. In the survey, immigrants will be asked about their information needs, challenges, and perceptions of library support based on items on a Likert scale. The items will be formulated based on insights discovered from user-generated data in (i) and a comprehensive scoping review of existing studies on immigrants in disasters. Surveys will be translated into native languages for the participants. Survey participants will be solicited via social network groups, non-profits and advocacy groups, and library connections. Survey participants will be invited to take semi-structured interviews, which will further elicit their needs and understanding of public library services. Translators will be hired to assist the communication in languages other than English.

   Research Objective 2: Investigate current practices in libraries. Survey and interview studies with librarians will be conducted to understand how the needs of immigrants have been considered in the design and implementation of disaster-related services. We estimate to survey 2 to 4 librarians from each of the identified public libraries, in total ~200 participants. The survey will include Likert-scale questions investigating disaster services and the consideration of characteristics of immigrants, and open questions on current practices. About 20 librarians with a mix of administrators and front-line librarians will be invited for interviews. The interview study will reveal the motivations, forms, and focus of existing crisis-related services and programs, as well as the outcomes and challenges in current practices. The semi-structured interviews will take place virtually. Librarian participants will be recruited through email solicitations and the teams' professional connections.

   Research Objective 3: Identify gaps and develop immigrant-inclusive practices. Information from librarians and immigrants will be analyzed to identify the practices and needs of immigrants in under-resourced communities, as well as possible library service gaps in meeting those needs in times of crisis. Focus group studies with librarians will then be conducted to address the gaps and develop plans and practices according to the population and facility profiles. Librarian participants will first be provided with a brief report on immigrants' needs and current practices based on research findings. The team will then lead semi-structured questions on how to consider immigrants' characteristics and serve their needs, what services can be implemented, and the required resources and time based on the project management triangle theory. At least 5 virtual focus groups will be conducted, with 3 to 5 librarians in each group. Librarian participants will be solicited from the identified libraries, which will allow them to share challenges and the best practices with others in similar situations.

4. Project Results. The project will have both research products and practical applications: (i) Reports will be created on immigrants' information needs in disasters and the work that has been done by public libraries to serve immigrants' resilience to disasters. (ii) An online toolkit for public libraries will be developed providing guidance on immigrant-inclusive services based on the profile of immigrants and the available resources of public libraries. (iii) Project social media accounts will be created to disseminate research findings to the public. (iv) The research findings will be disseminated via publications, presentations, and organized workshops at conferences such as ALA, PLA, ASIS&T, and ISCRAM (a top conference on crisis response and management). (v) Datasets, algorithms, and research protocols will be shared under ethical rules, which will enable researchers and librarians to conduct similar studies. (vi) A project website will be developed to release up-to-date research outcomes and instructions on how to provide immigrant-inclusive services for disaster preparedness, response, and recovery.

5. Budget Summary. The proposed project costs will be $410,911 with no cost sharing. This includes $38,303 for PI and Co-PI's summer salary, $115,396 for two graduate students' salary, $20,230 for fringe benefits, $56,428 for students' tuition. The budget includes $36,580 for PI/Co-PI and student travel support to conferences and field work for 3 years; $1200 for translator service; $8000 for participant payments; and $15,000 for advisory board stipends. The indirect cost is $115,774 based on UNT's federally negotiated off-campus rate of 48.5% MTDC.