

Making Hard-to-Reach Population Visible and Approachable: How Scientific Computing, Data Science, and Open Science Help Revitalize Taiwan Indigenous Peoples

In spite of a rich body of ethnographic data, mostly recorded in text and image format, contemporary and systematically collected detailed numerical individual level datasets are not available until 2010. Persistent lack of TIPs data led TIPs to become isolated, marginalized, and underdeveloped. Such circumstances made TIPs “invisible” in the real world and thus hard-to-reach populations. The ability to access HRPs enables us to build insights into various issues they encounter and thus help us to design effective policy measures. Scientific computing methods and technologies, data science, and open science are three crucial dimensions that are utilized to overcome the aforementioned challenges. The author demonstrates how scientific computing, data science, and open science are applied to construct TIPD big data based on Taiwan Household Registration administrative micro data. The paper highlights the theoretical foundation, implementation process, challenges, and ways to overcome research barriers in processing and enriching digital archival big data. The contributions of my research on TIPs and HRP are as follows. First, a contribution of moving from “closed” to “open”. Second, a contribution of moving from “the elite” to “the ordinary” in conducting TIPs research. Third, a contribution of moving from “local” to “global” in TIPs research. Fourth, a contribution of enabling TIPs research from “macro and static” to “micro and dynamic” data.