INTRODUCTION

Building trust in data, especially in this era of fake news and alternative truths, is typically linked with notions of ensuring transparency and visibility, enhancing the quality of data, and improving data provenance. Beyond these data-centric aspects, trust is also associated with socio-political notions of democratic participation, civic engagement, and citizen ownership (Lahsen, 2007). Thus, within the context of sustainable development monitoring, building trust in the indicators data and ensuring broad democratic participation in the monitoring process, are not two disparate concerns but are rather aspects of the same goal – towards the maturity of the indicators data ecosystem.

The principle of “leave no one behind”, which is central to the United Nations 2030 Agenda for Sustainable Development, is typically considered from the perspective of ensuring that all people, and in particular vulnerable and marginalized populations, are counted and included in the collection of indicators data. In addition, this principle also seeks to ensure that all people enjoy the benefits that accrue from sustainable development policies and programs (Transforming our World: The 2030 Agenda for Sustainable Development, 2015). However, this consideration of individuals only as data subjects and as recipients of development outcomes, unfortunately misses the opportunities for amplifying their agency and for empowering them for a more democratic participation throughout the full data value chain within the data ecosystem (Global Agenda Council on the Future of Government, 2017).

This research seeks to leverage these opportunities by exploring and expounding on the role of data (esp. social indicators) towards individual development and well-being; supporting and catalyzing community-level action towards the Sustainable Development Goals (SDGs); democratizing social indicators monitoring by highlighting and demonstrating the role of the bottom-up, micro-level, citizen-generated data to complement the official social indicators; and enhancing trust in social indicators data.

THE SMALL DATA APPROACH

Today’s data revolution is shaping and transforming society in many fundamental ways. The dominant perspective to the use of data, particularly Big Data, is associated with the concentration of power, control and utility from data in the hands of few, increased datafication of society, and the use of data for macro-level aggregate analyses of human and social behavior, environmental events, and economic phenomena (Crabtree & Mortier, 2015; Milan, 2018; Peled, 2013). This research adopts and embraces an alternative, and perhaps orthogonal, Small Data perspective and approach to data.

Small Data is about empowering people, who are in most cases the sources of data, with relevant and actionable insights from data through adopting an approach of analyzing data at the same unit at which it is sampled (Best, 2015). Thus, small data for development is an approach to data processing that focuses on the individual (or the source of data) as the locus of data collection, analysis, and utilization towards increasing their capabilities and freedom to achieve their desired functioning (Thinyane, 2017a). Further “empowering people with data” is operationalized in this research in terms of amplifying the three Human Data Interaction (HDI) imperatives of legibility, agency, and negotiability (Mortier, Haddadi, Henderson, McAuley, & Crowcroft, 2014).

The small data approach not only enables and supports individual and community level development action, but also allows for a nuanced understanding of the complex human development phenomenon. The bottom-up, micro-level, citizen-generated, locally-relevant data stands to augment and complement the
largely top-down, macro-level human development data. Only through a synergistic interaction between the small data approaches and the traditional social indicators within mature data ecosystems, can the full value and utility of data for development be achieved and delivered.

This project is undertaken as a set of four activities which are discussed in detail hereafter: participatory indicators for the Tamil Nadu Micro Small and Medium Enterprises (MSME) sector; the Capability Maturity Model (CMM) for National Statistics Offices (NSOs); community-based organizations (CBOs) data intermediation and collaboration; and individuals data enablement for SDG 3.

PARTICIPATORY INDICATORS FOR TAMIL NADU MSME SECTOR

According to the 2016 World Trade Report, MSMEs make up 93% of enterprises in non-high income, non-OECD countries and over 95% in OECD countries (World Trade Organization, 2016). MSMEs account for over two-thirds of employment in both developing and developed countries, with a contribution to GDP at 35% in developing countries and 50% in developed countries (World Trade Organization, 2016; Zappia & Sherk, 2017). Giving recognition to the potential contribution of the MSME sector on the achievement of the SDGs, it has been suggested that SDGs “can only be achieved if countries manage to build up strong SMEs” (Kamal-Chaoui, 2017; see also UNIDO, 2014; Zappia & Sherk, 2017).

This research activity aims to support the localization of SDGs for the MSME sector in the state of Tamil Nadu in India, to facilitate the active participation of the MSME firms in indicators monitoring, and to explore the modalities for engagement and participation of these MSME firms. This activity is undertaken in partnership with the Department of Industries and Commerce in Tamil Nadu and is planned for execution in two phases. Phase 1 of the project will map SDGs to Tamil Nadu MSME sector programs and activities. In addition, participatory methods will be used to identify and formulate localized MSME sector indicators. In phase 2, data and ICT enablement will be undertaken by developing, rolling out and evaluating an indicators monitoring tool for the MSME sector (see Figure 1).

CAPABILITY MATURITY MODELS FOR NSOS

The evolving role of NSOs as key coordinators and facilitators within the social indicators data ecosystem and as custodians of official national statistics, is necessitating an evolution in the mechanisms of ensuring data quality and maintaining trust in the data. This is in tandem with existing instruments, such as the UN Fundamental Principles of Official Statistics and the UN Principles Governing International Statistical Activities. CMMs for NSOs are an instrument for ascertaining the maturity of the organization’s processes and systems for producing high-quality indicators data in a manner that encapsulates best practices in the field; they are a tool for benchmarking and for comparison; and they also prescribe a pathway to increased maturity levels (Marcovecchio, Thinyane, Estevez, & Filotttrani, 2017).

This activity adopts the Design Science Research approach to develop a CMM for NSOs towards the production of high quality, trustworthy SDG indicators data. Towards this goal, the research will investigate and analyze current practice, models, and frameworks for the production of indicators data; design and formulate a prescriptive CMM; validate the proposed CMM; and promote its operationalization and utilization.

CBO INTERMEDIATED DATA COLLABORATION

The SDGs will not be achieved without leveraging partnerships with key societal stakeholders, hence the formulation of SDG 17. One such stakeholder is CBOs. These are the organizations whose mission and vision

Figure 1: Tamil Nadu MSME project logic model
primarily includes serving people in a local community and mobilizing individuals around specific, and generally locally focused issues (Werker & Ahmed, 2008). Secondary to that, and depending on the cultural context, is the ability of CBOs to offer advocacy channels to individuals who might otherwise not have societal representation, thus making a contribution to “leaving no one behind”.

This research activity is premised on the argument that CBOs have the potential to play a unique and crucial role in the process of implementing and monitoring progress towards meeting the UN SDGs and that by enhancing and amplifying the work that CBOs already do in their communities they can serve as natural trusted messengers, data intermediaries (Gigler, 2011) and conduits for the marginalized and the excluded. The research aims to explore the modalities of engagement for CBOs and to unpack their data intermediation and collaboration role within the indicators data ecosystem.

This research activity is undertaken in partnership with Caritas Macau – one of the largest CBOs in Macau which operates multiple centers that provide social services to the local community. The research has explored the opportunities and challenges for data collaboration and participation by the CBO (Thinyane, Goldkind, & Lam, 2018). Subsequently, to leverage the identified opportunities, data and ICT enablement for one of Caritas’ centers is being undertaken – this is through the participatory development of a tool that facilitates crowd-sourcing of homelessness cases in the city; supports the use of data for outreach operations; and supports the use of data internally and for reporting.

DATA ENABLEMENT FOR SDG 3
The increasing ubiquity of data in society is not only seen in its increased use in organizations but also in increased data use by individuals in areas such as life-logging (Gurrin, Smeaton, & Doherty, 2014; Rooksby et al., 2014), associated with the proliferation of activity trackers and mobile devices. There have been increasing efforts and research around the use of data for informing individual wellbeing goals and imperatives. The growing fields of personal informatics, quantified-self, and lived informatics represent this interest and focus on data that is collected by individuals for the ultimate utility that accrues towards the individuals (Li, Dey, & Forlizzi, 2010).

This research investigates the engagement of individuals in the use of data towards the achievement of the sustainable development imperatives as articulated in the 2030 Agenda for Sustainable Development, with an initial focus on SDG 3 “health and wellbeing”. This investigation is framed along the following lines of inquiry, formulated around Li et al’s Stage-Based Model of Personal Informatics (Li et al., 2010): investigating current data collection and monitoring practice; exploring motivations and incentives for data use; and investigating data utility, sharing and social sense-making.

A survey instrument was utilized for data collection, from 1,864 recruited online participants. The findings from the survey, initially discussed in (Thinyane, 2017b), have informed the development of the MySD ¹ (i.e. My | Small Data | Sustainable Development) – a mobile platform for social indicators monitoring, consumption, and production. Further work on the development of the MySD platform and exploring additional uses cases is ongoing in this activity.

CONCLUSION
The ensuing data revolution is shaping and transforming society in many fundamental ways. It not only holds the potential to support and inform action towards the realization of the UN SDGs, it also holds great potential to marginalize, exclude and misinform. This research project is shaped to investigate and catalyze the active engagement and participation of individuals and community-level actors in social indicators monitoring, towards ensuring that nobody is left behind; and also, to build and enhance trust in social indicators data.

TEAM
Mamello Thinyane, Principal Research Fellow
Ignacio Marcovecchio, Senior Research Assistant
Michael L. Best, Director
Karthik Bhat, Research Assistant
Lauri Goldkind, Visiting Researcher (Fordham University)
Vikram Cannanure, Visiting Research Assistant (CMU)

¹ Demo version at http://bit.ly/2t4uicB
REFERENCES


Zappia, M. T., & Sheck, L. (2017). SMEs and SDGs: Supporting small and medium enterprises to achieve the sustainable development goals. Geneva, Switzerland.