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**Creating a comprehensive platform for food banks to address
poverty-oriented data**

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Introduction

Canada is recognized for its high quality of life and outstanding standards of living, but “statistics show that nearly 4.9 million people are living below the poverty line and 1.2 million of these are children under the age of eighteen” (1). While national and provincial poverty-reduction projects have had a considerable effect on decreasing or controlling the poverty rate across the country, they have not significantly addressed the causes of poverty. It is not clear what are the roots and causes of poverty in the marginalized communities. The idea of smart City is a multi-dimensional concept, which includes several disciplines such as social, economic, and technological sciences. By using the indicators provided by the smart cities concept, it enables opportunities for city authorities and stakeholders to overcome social issues and enhance the quality of life, to improve economic conditions, and to provide better services. This paper aims to recommend a practical solution to address the roots and reasons of poverty based on smart city ideology.

Background

Urban planning literature contains valuable and useful resources on smart cities, including definitions of the concept, the criteria, the indicators, and experiences of implementing the concept in established cities.

The characteristics referenced in past research about “smart cities” are:

- They aimed to recognize the criteria of smart cities (2)(3)(4);
- Their main goal has been to create a “smart” city, regardless the current situation of the city (5)(6);
- Building a smart city was more important than solving the current challenges of the city (7)(8)(9)(10);
- The technological aspect was the dominant dimension of the research (11)(12);
- Although the researchers were familiar with the components of the concept, the outcomes of most studies were typically one dimensional, such as economic solutions and social recommendations (13)(14); and
- Researchers attempted to study the concept from only one or two points of view, which were typically economic, social, environmental, or technological (15)(16).

Meanwhile, the idea of overcoming social challenges in a community through a smart city approach is lacking in the literature. Successful smart city projects were typically conducted in a city with a stable economic condition in a developed country. They aimed to enhance its strengths in order to attract more investors, to attach a brand to the city, or to establish a global presence. In these cases, the strengths of the pre-smart city were more impressive than its weaknesses. The concept, criteria, and indicators of smart cities provide the opportunity for cities

to overcome their challenges through a comprehensive approach. Using technology to enhance the quality of life and provide better services in urban spaces is an alternative for city managers, but it is not the only dimension of smart cities. This concept encompasses a wide range of social, economic, and environmental aspects.

The Smart City is a multi-dimensional concept, which includes six major criteria: economy, mobility, environment, people, living, and governance. "These six criteria connect with traditional regional and neoclassical theories of urban growth and development. In particular, the criteria are based – respectively – on theories of regional competitiveness, transport, and information and communications technology, economics, natural resources, human and social capital, quality of life, and participation of societies in cities" (17). The question is how to apply the criteria of smart cities to overcome or at least decrease existing weaknesses. The challenge is the lack of an approach based on these criteria to compensate for the weaknesses of a city. This study aims to develop such an approach using the criteria and indicators of smart cities to solve urban challenges and in this case generational poverty in the City of Saint John.

Based on a report by the Human Development Council (18), the poverty rate in Saint John is 19.7%, which is more than five percent higher than the average rate of the province (14.5%) and the country (14.4%). "The City of Saint John is host to the highest child poverty rate of Canada's larger urban areas" (19). This problem is compounded by Saint John's low population growth of -2.2% (20). Although several poverty-reduction projects have focused on this challenge in Saint John, it is not clear why generational poverty has remained unsolved for decades.

Discussions and Considerations

The generational poverty issue in the City of Saint John motivated me to conduct an exploratory study during my doctoral thesis, entitled *The addressing of social issues through identification and application of smart community dimensions and data management systems*. My goal was to focus on root causes of poverty by using the concept of smart communities and data management systems. There is currently no integrated data platform to recognize and analyze causes and reasons of poverty. Therefore, I conducted a two-phase survey to identify: (1) causes and reasons of poverty, and (2) the role of key stakeholders in addressing poverty. In this study, I discovered that the most critical challenges of studying poverty entail: (a) having access to data (and more importantly real-time data), including information about low-income families (e.g., education level, location, job status, health condition, and family information); (b) understanding the role of key stakeholders; and (c) an integrated connection between decision makers and people suffering from poverty. This is not a problem restricted to Saint John; there is no integrated real-time database related to low-income families in the world. The first step in creating an integrated database is identifying the most relevant source of data. My Ph.D. thesis recognized food banks as one of the most important places to have access to target groups.

Food banks are substantial sources of data to understand and identify challenges of low-income families. They are one of the best sources to have access to disadvantaged individuals, from understanding their basic needs, to having them share their personal and family problems, and eventually offer some solutions to assist them in a wide variety of ways (find a job, increase their level of education, and develop their skills).

This study considers building an online web-based interactive platform to make a real-time connection between food banks, target groups, decision makers, and donors. It includes three main phases:

- (a) Collecting target groups' data by a one-time registration form in order to track inputs and outputs of food banks, to notify donors, and share the database with decision makers (Food bank user's participation is completely voluntary and sharing their information with decision makers will be anonymous).
- (b) Analyzing target groups' various challenges, including level of education, employment status, mental or physical disabilities, and other critical barriers.
- (c) Offering a suitable food basket, based on individuals' medical history and past food baskets.

The collected real-time data will assist three major groups: suppliers (key stakeholders), providers (food bank managers/employees), and end users (low-income families and other users of food banks). This database will collect various information based on several factors relevant to the causes and roots of poverty, and at the same time provide real-time data for decision makers and researchers. Although this platform will be designed for food banks, the data gathering could be applied to other relevant places (e.g., women's shelters). Decision and policy makers, academics, donors, and volunteers could also find beneficial information from the database. Designing this online platform is the first step of a broad, comprehensive project. The ultimate goal is creating an online network for everyone to share their challenges and look for solutions. This goal can be achieved by implementing four main activities: (1) developing the functional specifications of the platform; (2) designing the data collecting framework; (3) developing the comprehensive social network for marginalized population and key stakeholders; and (4) creating an evidence-based platform to recommend functional solutions.

Conclusion

Real-time data and its analysis will facilitate the process of decision making. "The success of poverty reduction programs depends largely on the use of quality data to help determine the nature and extent of poverty and to properly design and implement strategies for alleviating poverty in a particular context"(21). Having access to real-time data of marginalized individuals has become an issue for government at the local, provincial, and national level. Often research and poverty-reduction projects rely on out-of-date data. Food banks are significant sources to have access to target groups of poverty-reduction projects. A significant part of the problem is related to data mismanagement, including a lack of an integrated system to gather data, which results in wasted and uncollected information. In other words, various sorts of data do exist at food banks, and the challenge is collecting and exporting them in a systematic, efficient, and comprehensive way. This paper proposes a comprehensive data management platform for food banks aiming to collect relevant data, to track visits, to make consistent connections with donors/volunteers, to offer healthy food basket to visitors based on their medical history, to create a rich database for researchers and policy makers, and ultimately to increase the quality of life in our communities by offering practical solutions and recommendations provided by volunteers, experts, and users.

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