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DATASSIST

Datassist Case Study:

Making Sense of Complexity:
Using Advanced Analysis to Understand Deep Trends
in PCYI's work with children and youth
Identifying relevant data relationships and trends supported effective use of program dollars

The Project:

Peel Children and Youth Initiative (PCYI) is a
Canadian nonprofit focused on developing
rigorous evidence around helping children
and youth to thrive. The organization relies
on insights regarding children and young
adults, ages 0-24 years, to facilitate for this age
group a safe and healthy environment, capacity to realize their potential and achieve success, and
contribute to their community in meaningful ways. In order to raise the effectiveness of their
programs, PCYI needed to collect a reliable sample of data on families with young children, and
analyze the data to further understand needs and usage around formal PCYI services and
programs for parents.

The Situation:

There is a very high rate of immigration within PCYI's geography. It is commonly understood
that newcomer populations have different needs than families that were born in the location. A
simple analysis of the data collected would have confirmed these beliefs, yet would have hidden
the deeper trends. In addition to missing important insights, simple data analysis, which did not
encompass the complexity of the data, would have led to inaccurate results and
misunderstanding of what was really happening in the situation being analyzed.

The Datassist Solution:

Datassist collected a large, stratified sample of data on the values, needs and barriers being
experienced by families in the Peel Region of the Greater Toronto Area (GTA), west of Toronto,
Canada. Datassist carefully cleaned and audited the data to prepare it for analysis.

This complex dataset was then analyzed, using hierarchical linear modeling analysis (HLM) to
dig deep into the specific trends and interactions. Using this level of analysis, Datassist found a
deeper pattern within the data beyond simple newcomer/non-newcomer population clusters.
Several significant and unexpected interaction effects were discovered, so Datassist decided to dig
deeper into the usage trends using advanced analysis techniques. Several significant interaction
effects were found – the strongest and most important of these being the interaction of
immigration status and ethnicity.

As a result of this deep data analysis, PCYI has been able to implement more effective use of programming dollars within their area.
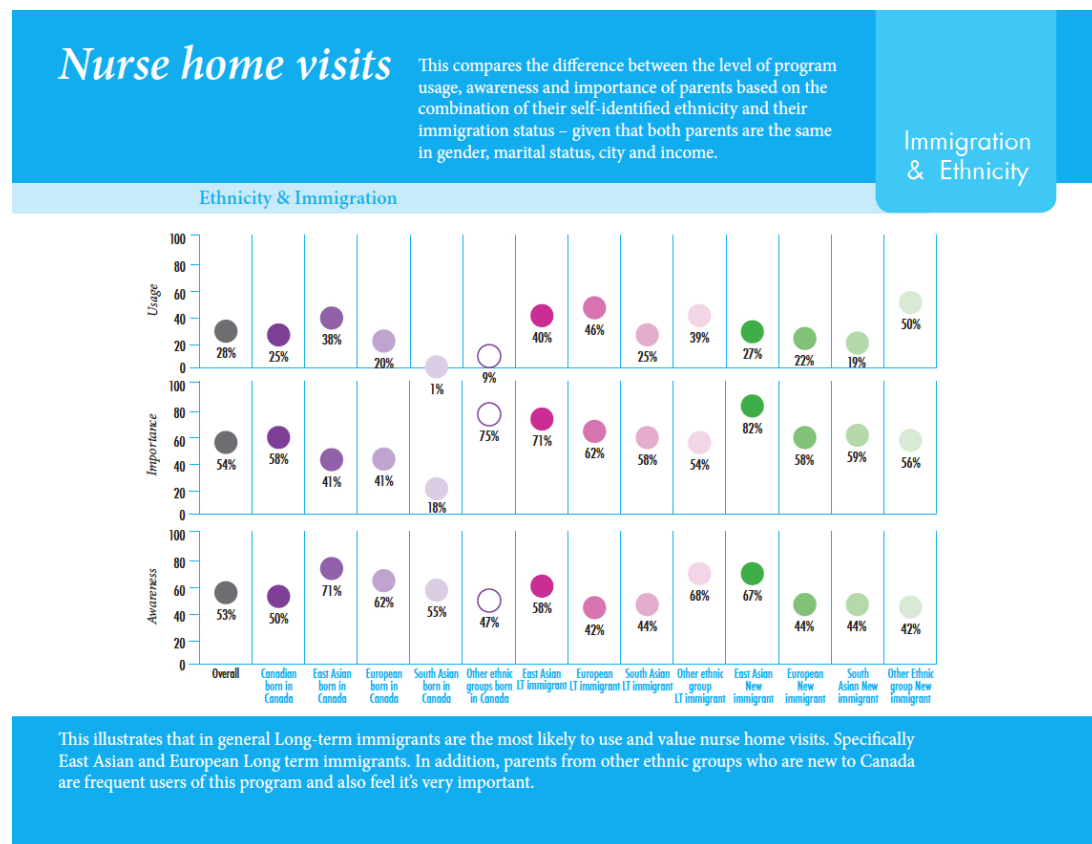
<u>The Process:</u>

The initial collection of data was designed to ask as many detailed questions relevant to the objectives of the study as possible. The design of the data collection tool occurred in collaboration with staff, service providers, donors and parents themselves. Once Datassist had the data collection tool designed and the research questions established, they needed to design a data collection sampling strategy that would be robust enough to support the complex analysis, while remaining within the available time and money resource constraints. Datassist used a stratified, random sample of parents in order to decrease bias within the sample.

Once the data had been successfully collected, Datassist worked in connection with the PCYI senior staff to clean, recode and prepare the data for analysis. The data was analyzed in several different rounds, each iteration being punctuated with extensive meetings with the staff and stakeholders to see how results were most usable to them, as well as where and how the results were providing new and unusual insights.

One unexpected result was the finding that very high levels of usage rates among parents who had just recently arrived in the country, were followed by a rapid decline in usage levels as parents spent more time within the country.

An example of the changes in usage rates along the interaction lines:

Nurse home visits This compares the difference between the level of program usage, awareness and importance of parents based on the combination of their self-identified ethnicity and their immigration status – given that both parents are the same in gender, marital status, city and income.

Immigration & Ethnicity

Ethnicity & Immigration

This illustrates that in general Long-term immigrants are the most likely to use and value nurse home visits. Specifically East Asian and European Long term immigrants. In addition, parents from other ethnic groups who are new to Canada are frequent users of this program and also feel it's very important.

Interaction effects, such as this, are some of the most interesting patterns that can be detected when modeling data. An interaction term occurs when one characteristic of the respondents have different effects in the presence or absence of another characteristic of respondents.

In working with PCYI to explore the life experiences of parents, Datassist discovered that one of the most powerful influences was an interaction term between the immigration status of the parent and the self-identified ethnic background of the parents. In other words, to clearly understand what types of supports parents in Peel were most interested in and were using the most, it was important to know both the ethnic background as well as the immigration status of the parent. Considering both of these data elements simultaneously was key. What types of supports a parent was most likely to be interested in could not be determined simply by knowing whether or not they were born in Canada, had immigrated to Canada many years ago, or were a newcomer to Canada.

With the results of this study in hand, PCYI has gone on to produce a great deal of innovative and effective research reports to support the more effective use of programming dollars within their area.