

CAPSTONE PROJECT -GROUP 11

Analysis of Long term care in Senior Housing

PROBLEM FORMULATION

INTRODUCTION.

With modernization, there are a lot of new facilities available to all the people of different generations. But as of now, we need to take our seniors into consideration. Seniors (65 years and older) are the fastest growing age group in Ontario. In 2016, 16.4% of Ontario's population was 65 years or older. By 2041, it is projected that 25% of Ontario's population will be 65 years or older, almost doubling from 3 million seniors in 2016 to 4.6 million seniors. This increase in the specified age group increases the need for senior homes. Senior homes are facilities that have the same priority as that of hospitals and rehabs. Ontario specifically, has been facing the shortage of senior homes where our senior citizens can comfortably stay and can get proper care. Due to covid-19 spread, we know our seniors got more susceptible to the virus because of the existing health conditions. This increased the number of people moving to the senior housing and in turn increased the requirement of new senior houses to be built. The waiting time to get into senior housing is over a year and unfortunately we can lose our seniors to lack of intensive care available to them. This project will help us try to understand this problem on a deeper and more professional level where we will try to see how many people are entering the Seniors age group and how many more senior homes need to be built.

MECP(About the company)

MECP specializes in manufacturing affordable medical equipment in Canada. They are expanding business to provide products for long term Care housing. Currently, MECP is trying to understand the market feasibility of their products and services in senior housing. Seniors (65 years and older) are the fastest growing age group in Ontario. In 2016, 16.4% of Ontario's population was 65 years or older. By 2041, it is projected that 25% of Ontario's population will be 65 years or older, almost doubling from 3 million seniors in 2016 to 4.6 million seniors.

PROBLEM STATEMENT

The provision of long-term care in senior housing communities is a complex and multifaceted issue that requires thorough analysis to understand the challenges and opportunities for improvement. At the time of emergencies, they don't have the minimal help our seniors need. With having more seniors homes with several services and the assistance, it will be more convenient to give them that attention. Due to the covid-19 outbreak, a lot of seniors started moving into senior homes as it was safer for them as well as the families. The waiting period after applying and getting a room in a senior home is over a year . This migration inturn increases the demand of building new senior homes. Despite the growing demand for long term services, many senior housing communities are facing challenges in providing high-quality care that meets the needs of older adults as they don't have enough rooms or apartments available at the time . This is a problem that needs to be addressed because the need for senior homes has the same priority as those given to building new hospitals and rehabs. Also , the majority of our seniors have played a crucial part in the development of the country and deserve to be taken care of when they need it the most. A Lot of them have served in the military, the healthcare and financial roles that have benefited the country.

KNOWLEDGE AND TECHNIQUES

Data cleaning tools can be used to clean and prepare the data for analysis. This may include removing outliers, imputing missing data, and transforming variables. Popular data cleaning tools include Excel and Python. BI tools like Tableau, Power BI can be used to create interactive visualizations, dashboards and reports. It is important to note that the specific tools and techniques used will depend on the nature and scope of the project, as well as the availability of resources.

REQUIREMENTS FOR THE SOLUTION

Data Accessibility: Access to relevant data is crucial for research on senior housing. This may include data on residents, staff, and the physical environment, as well as data on the services and supports provided to residents.

Research design: A well-designed research plan is necessary to ensure that the research is conducted in a rigorous and unbiased manner. The research design should include a clear statement of the research questions, hypotheses, and methods to be used.

Sample Population: A representative sample of the population of interest is needed to ensure that the research findings are generalizable to the broader population. The sampling technique should be appropriate for the research questions and the population of interest.

Data analysis: The data analysis should be conducted in a rigorous and transparent manner, and appropriate statistical techniques should be used to analyze the data. Technical skills like python for analyzing the data patterns and visualization tools will be used for this analysis.

Ethical Practice: Research on senior housing must be conducted in an ethical manner and must adhere to any relevant ethical guidelines or regulations. This includes obtaining informed consent from participants, protecting participant confidentiality, and ensuring that the rights and welfare of participants are protected.

EXISTING SOLUTIONS

This is a new or emerging concept that has not yet been fully explored. This could be a chance to do unique study and collect information that can help guide your judgements and tactics going forward. The proposed solution, which offers a substitute that enables seniors to age in place and stay in their homes for as long as possible, intends to solve a gap in the available elder care options. This type of care is not widely available yet, and there is a need for research to determine its potential viability and impact.

EVALUATION

It will involve evaluating the strengths, weaknesses, opportunities, and threats associated with offering long-term care in private residence. This analysis will consider factors such as the cost and availability of services, and the level of demand. Our research will also involve assessing the financial viability of offering long-term care in private residence, including the cost of providing services, the potential revenue from clients, and the potential for profitability. The evaluation would be measured in terms of accuracy of the research and conveying the precise results to our stakeholders which would allow them to make informed decisions on the improvement of their business processes.

GOALS

The goal of this analysis is to understand the current state of long-term care in senior housing communities, identify key challenges and opportunities, and develop recommendations for improving the provision of long-term care services to meet the needs of older adults. By evaluating, stakeholders will be able to identify areas for improvement and potential for growth, allowing them to make strategic decisions on where to focus their efforts for optimal results.

CHALLENGES AND ETHICAL CONCERNS

Data collection can be challenging in long term care as it often involves sensitive personal information and ensuring the privacy and confidentiality of participants can be challenging. Long-term care is provided in a variety of settings, such as assisted living facilities, skilled nursing facilities, and home care, and each setting can have different policies, procedures, and regulations. This can make it difficult to conduct studies that are comparable across different settings.

Considering the ethical concerns of senior patient's data about their health, identity and other data validity should be accurate and complete.

In particular, privacy rights, data validity, and algorithm fairness in the areas of Big Data healthcare and market feasibility. Also storing data according to established policies for security and confidentiality of each patient's data.

It's important to have a clear plan and a dedicated team to conduct the research, and to be flexible and adaptable to any unexpected challenges that may arise during the project.

RESOURCES - DATA SOURCE & REFERENCES

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