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Minimum Viable Product

A *Fresh Kitchen* way to combat the diabetes disability burden in Mexico

Opportunity

Noncommunicable diseases are the leading causes of disability in Mexico, specifically, diabetes. The rate of diabetes in Mexico has been steadily climbing for the last two decades and is projected to affect 13-23% by 2050 for adults. Diabetes prevalence will only continue to rise unless a public health approach to actively reduce the burden is implemented. One effort to reduce this disability burden would be to leverage healthy fast-food alternatives to the ubiquitous ultra-processed food market that exists in Mexico.

Fresh Kitchen is an amazingly delicious and nutritious healthy fast-food chain in Florida that delivers hormone free, fresh food "as quick as you can point". They directly compete with the ultra fast-food processed market in speed, convenience, and price. Their business is growing rapidly in Florida and they are almost in every major city in the state.

To create change in the diabetic culture of Mexico will take time and a variety of programs, practices, and policies at the governmental level, however, targeting the restaurant capital market can be a way to change the culture. Fresh Kitchen has the capacity to infiltrate itself in a country where whole natural food delivered fast is needed and they already have proof of concept on how to achieve this. Fresh Kitchen wants to help but needs help determining where to locate their restaurants.

Impact Hypothesis

By identifying the density of diabetes and population in Mexico, Fresh Kitchen will have strategic locations of where to build their restaurants to counter the rising diabetes rates. The identification of densely populated fast-food restaurants might also be explored in this analysis.

Primary impact: determine 1-3 ideal locations of their restaurant

Secondary impact: if business is successful, proof of concept that people are wanting/enjoying healthier foods (this can send a signal to market demands),

Assumptions	Risk
The market demand for healthy fast-food that Fresh Kitchen serves is desirable/will be wanted by the Mexican population	If profits are not there, Fresh Kitchen will lose business and have to shut down
Healthy fast-food places will have a long-term	One to three Fresh Kitchens will most likely

impact on diabetic rates	not create cultural change unless demand for it picks up and other governmental processes are implemented
Location should only depend on population density, diabetes rates, and existing fast-food location density	Fast-food chain restaurants may already have a capital share of market and introducing a competitor may be a struggle

Solution

Using data to identify where Mexico is most dense of diabetes, death due to diabetes, and outlet "fast-food" places of establishment, we will be able to geographically see viable options where Fresh Kitchen could build their restaurants. The 31 first-level administrative territorial entities in Mexico will be the Mexican states of focus.

Firstly, demographic data of each Mexican state will be explored from 2020 National Institute of Statistics, Geography and Informatics (INEGI) Population and Housing Census data. Variables such as gender, age, poverty level, and average years of schooling for 15+ year olds of each Mexican state. This data will help us scope what is the demographic topography of the Mexican states; this can be used as strategic marketing for Fresh Kitchen and a baseline understanding of this new market.

Secondly, we will use Mexico's National Survey of Health and Nutrition (ENSANUT) 2018 data to quantify the frequency and trend of a variety of health and nutrition conditions, such as currently living with diabetes, overweight and obesity prevalence, physical activity, dietary patterns. This national survey was conducted from Jul 2018 - Jun 2019 by the Mexican government and is performed every six years. Data gleaned from this survey data will exclude pregnant women and those <18 years of age. This data will provide Fresh Kitchen with insight into what areas of the country their locations would be of most value.

Thirdly, the mortality rates due to diabetes in the year 2020 were obtained from the INEGI Mortality Statistics. In tandem with the ENSANUT data, knowing where most people die due to diabetes will be enlightening, but might not be as helpful as the ENSANUT data.

Data

1. Demographic data of the Mexican states (age, sex, poverty level, average years of schooling). Data is from 2020.
2. Health and nutrition conditions (overweight and obesity prevalence, physical activity, dietary patterns, prevalence of those living with diabetes). Data is from 2018.
3. Mortality rates due to diabetes. Data is from 2020.

Methodology

I used Google Sheets for data cleaning and preliminary data exploration. I used Tableau to create data visualizations and will use it to create a final comprehensive dashboard. Below is a visualization of the number of deaths due to diabetes per Mexican state. A calculated field was

applied to the population. All data cleaning was performed in google sheets. Data represent the total number of deaths due to diabetes across all ages.

Preliminary Visualization & Exploratory Data Analysis (EDA)

https://public.tableau.com/app/profile/nicole.mcbride/viz/MVPMexicoDiabetes/Dashboard1?publish=yes