CAPSTONE PROJECT

MS Business Analytics

DePaul University

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About Me

Anabely Cabada

- **M.S. in Business Analytics** – expected Graduation March 2024

- BSB Marketing from DePaul University – June 2021

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    - Operation Specialist at Ansira Inc.
    - Marketing Consultant – SBDC Rogers Park Business Alliance
    - Volunteering experience as a marketing- social media speaker in multiple non-profit Hispanic organizations in Chicago.

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Project Description

About the project:

- According to the U.S Small Business Administration nearly one in four new businesses is Hispanic-owned and nearly 5 million Hispanic-owned businesses in the United States contribute more than $800 billion to the American economy annually.

- As well, there are more than 300,000 Hispanic-owned, employer businesses located across all 50 states and the District of Columbia.

- However, although the Hispanic businesses have made an extraordinary impact on the U.S. economy, the access of data and technological resources is still limited.

- That is why this capstone main purpose is to investigate how familiar Hispanic Small business owners are with the use and benefits of data analytics and how they can better implement data analysis methods to make smarter data-driven decisions.

Goals

- Highlight the importance of implementing data analytics for the Hispanic small businesses' growth

- Analyze if and how Hispanic Small business owners in the Chicago land area are familiar with data analytics usage and its benefits for the companies' performance.

- Find ways to educate Hispanic small business owners to use analytics for their company's success.

- Propose affordable analytics tools for Hispanic small businesses
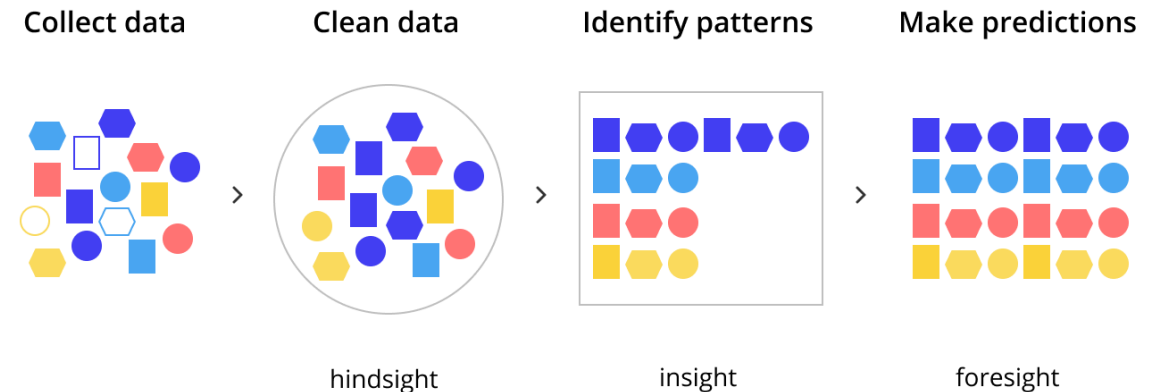
The use of Analytics in Hispanic Small Businesses in Chicago

Data Analytics Overview

- Data analytics is the process of examining, transforming, and modeling raw data to uncover meaningful patterns, insights, and trends. It involves applying statistical and mathematical techniques, as well as using advanced tools and technologies, to extract valuable information from data sets. By analyzing this information, companies can gain a deeper understanding of their operations, customers, and markets, leading to improved decision-making and competitive advantage.

Collect data   **Clean data**   **Identify patterns**   **Make predictions**

hindsight   insight   foresight

Source: Amadeus

Benefits of Analytics in Small Businesses

Why data analytics is important for small businesses?

Customer experience	Improve customer experience
Productivity	Increase efficiency and productivity
Financial	Improve financial processes
Inventory	Improve inventory management
Ops. Costs	Reduce operational costs
Business model	Improve business model
Competitive	Stand out amongst the competition
Market changes	Identify new business opportunities and respond to market changes faster
Customer segment	Identify and Focus on their Best Customer Segment

Situational Analysis

- Hispanic-Latino-owned businesses employ more than 3 million people nationwide

- A [Stanford University study](#) published in 2020 found that nationally, Latino business grew by 34 percent over the past 10 years

- Across the U.S., Latinos are represented in all the major industry sectors, having businesses in manufacturing, education, health services, finance, construction and more

- About 80,000 of businesses in the City of Chicago are Latino-owned

- Access to funding is one of the biggest challenges for Hispanic businesses

- Although Latino-owned businesses were deeply affected by the pandemic, they are resilient and have adapted to the challenges brought on by the Covid-19, but they still need support to reach their full potential

Source: Illinois Hispanic Chamber of Commerce | United States Census Bureau

PESTLE Analysis

External/broad environment context that affects the Hispanic Small Businesses in the Chicago area.

Political:

Federal and State government regulations, immigration laws and policies.

Economic:

Effects of the pandemic - Inflation (rise in operational costs, labor, products, manufacturing, etc.)

Social:

Cultural factors like consumer buying behaviors. The growing population of Hispanic or Latino origin from 12.6% in 2000 to 30% in 2050. These statistics represent that one in every three persons will be Hispanic

Technological:

Technology and the demand for connectivity plays a pivotal role in Hispanic businesses.

-Technology usage

-Limited access to digital resources

Legal:

Licensing, trademarks, termination and misclassification of employees are some of the most common legal issues small businesses encounter
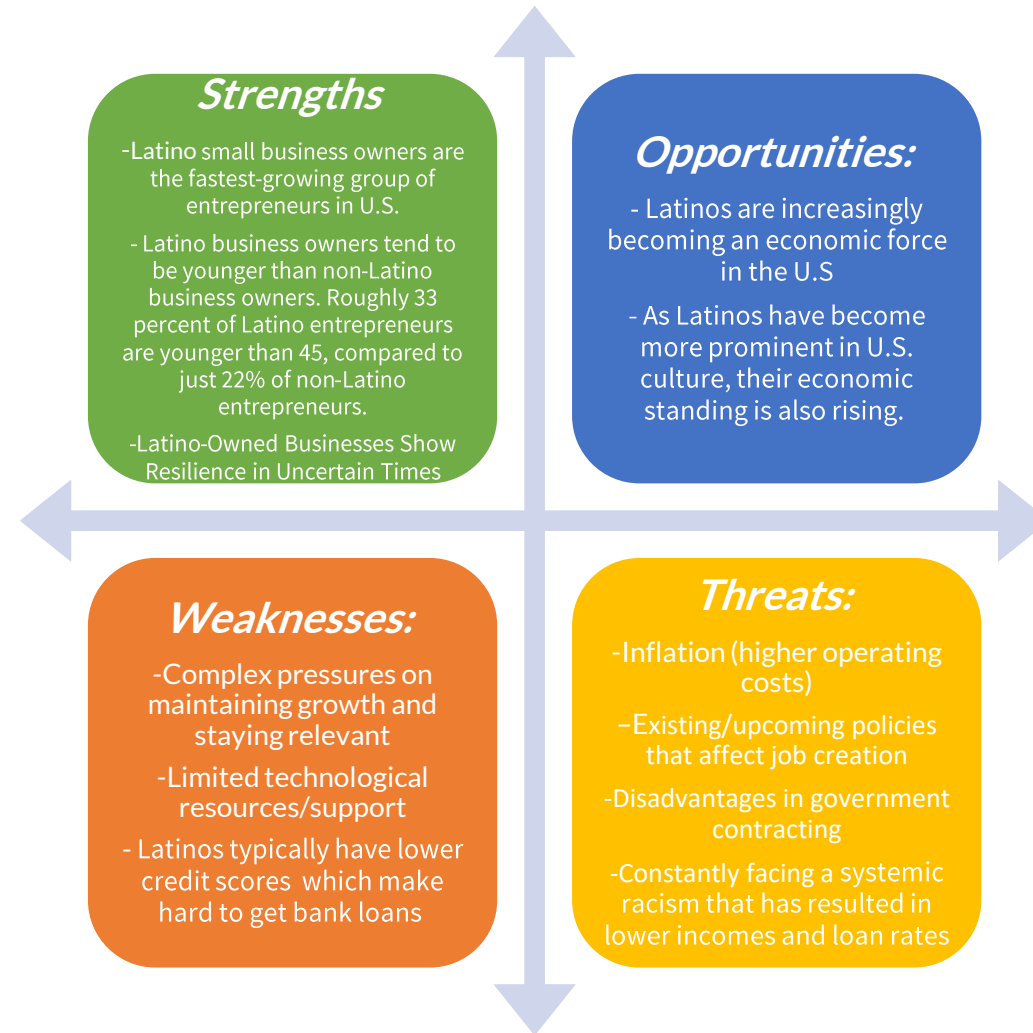
Environmental:

Hispanics tend to see more environmental issues in their local communities than non-Hispanics. -Air pollution, too much garbage, pollution of lakes, rivers and streams, safety of drinking water, etc. are some of the environmental challenges affecting the development of Hispanic businesses

SWOT Analysis

Strengths

-Latino small business owners are the fastest-growing group of entrepreneurs in U.S.

- Latino business owners tend to be younger than non-Latino business owners. Roughly 33 percent of Latino entrepreneurs are younger than 45, compared to just 22% of non-Latino entrepreneurs.

-Latino-Owned Businesses Show Resilience in Uncertain Times

Opportunities:

- Latinos are increasingly becoming an economic force in the U.S

- As Latinos have become more prominent in U.S. culture, their economic standing is also rising.

Weaknesses:

-Complex pressures on maintaining growth and staying relevant

-Limited technological resources/support

- Latinos typically have lower credit scores which make hard to get bank loans

Threats:

-Inflation (higher operating costs)

–Existing/upcoming policies that affect job creation

-Disadvantages in government contracting

-Constantly facing a systemic racism that has resulted in lower incomes and loan rates

Case study

- The following case study is based on primary data collected from 20+ Hispanic Small businesses with at least one employee in the Chicagoland area.

- The objective of the survey is to better understand how Hispanic business owners in the Chicagoland area are familiar with the data analytics' meaning, use, and benefits for their company's performance.

The use of data analytics in Hispanic Small Businesses in the Chicagoland area

- **CASE STUDY OUTLINE**

❑ Online survey

❑ Target Audience
- This survey was conducted to 20+ Hispanic small business owners in different industries across Chicago and Suburbs
- The survey was created in English and Spanish since many Hispanic business owners only speak Spanish or feel comfortable in their native language.

❑ Purpose
- How familiar Hispanic businesses are with data analytical tools?
- How Hispanic small companies analyze their business performance?
- How Hispanic small businesses owners make business decisions?

❑ Questions
❑ Analysis of results
❑ Conclusions

Survey results

- I asked 20+ small companies about their approach to data analytics and the way they analyze their business performance.

- Of the 20+ people surveyed, 28.6% are in the food and restaurant industry. 23.8 % offer professional services, and 28.6% are in real estate and retail. The rest of the respondents represented by 14.3% offer cleaning services, construction work and one of them owns a car dealership.
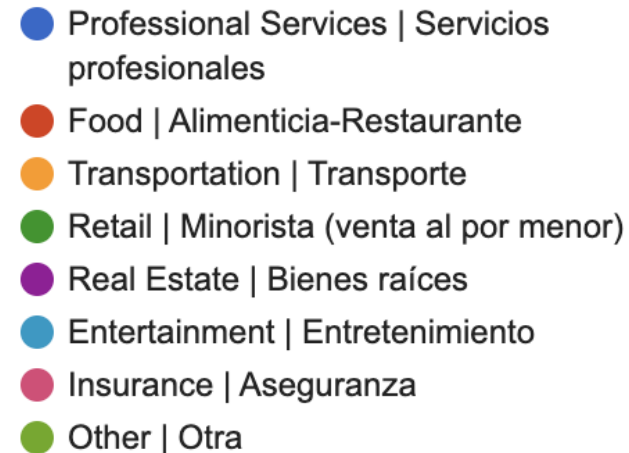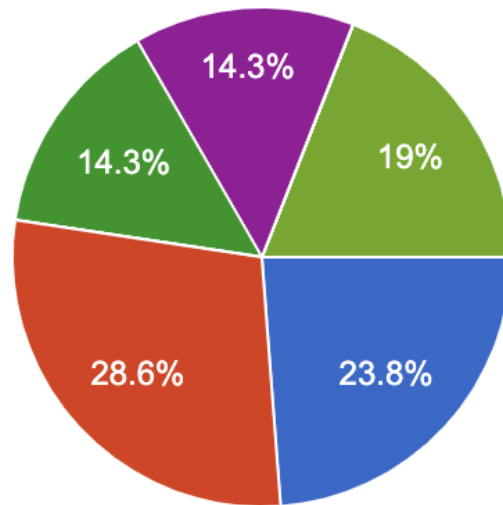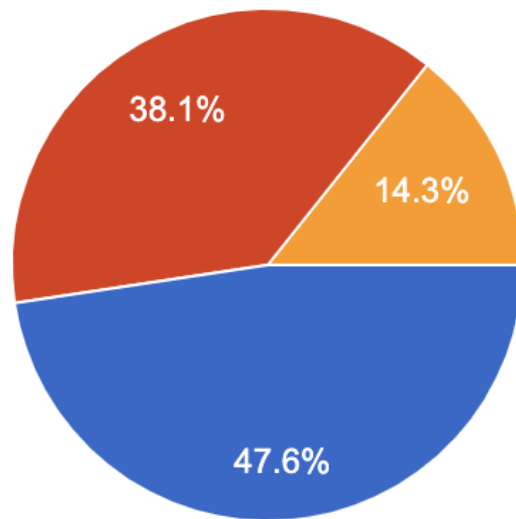
Survey results

- The survey results shows that almost half of the respondents (47.6%) have been in business for 1 to 5 years, while the 28.6% have been operating for 10 to 20 years. One of the respondents is just starting their company since they are been in business for less than one year, and another respondent indicated that they have more than 20 years with their company.

- 0 - 1 year / año
- 1 - 5 years / años
- 5 - 10 years / años
- 10 - 20 years / años
- More than 20 years / Mas de 20 años
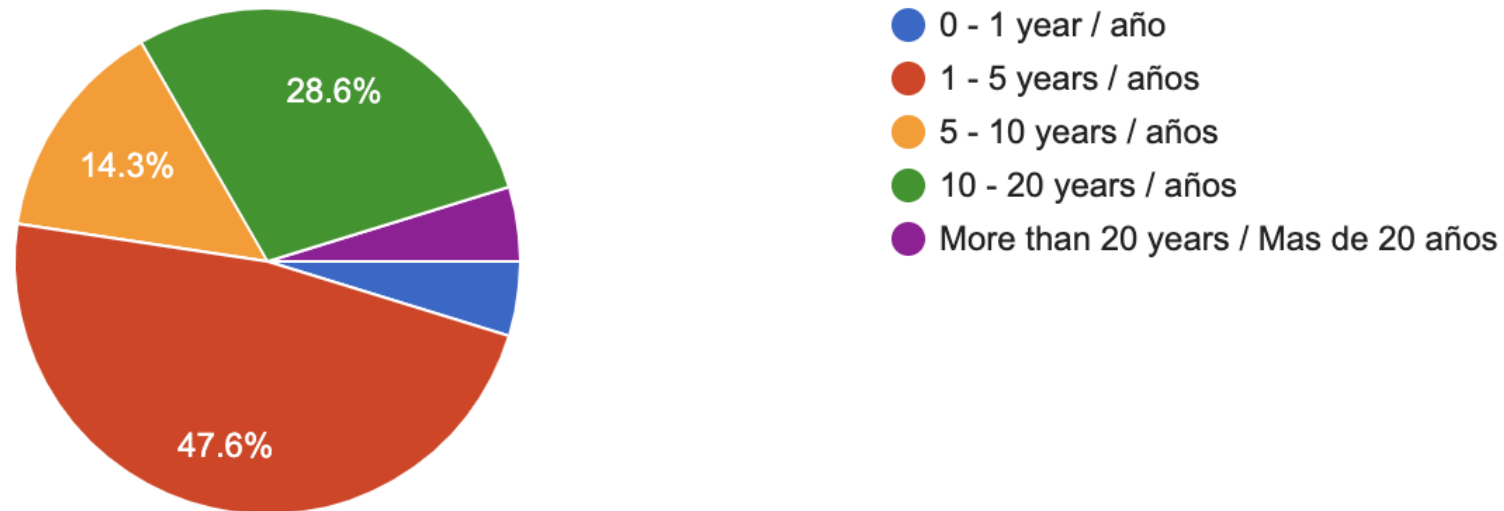
Survey results

How many employees does your business have?

- Of the 20 businesses surveyed 47.6% are self-employed since they indicated to have between 0-1 employees. 38.1% have between 1-5 employees, and the 14.3% have between 5-10 employees.

Legend:
- Between 0 -1 / Entre 0 y 1
- Between 1 and 5 / Entre 1 y 5
- Between 5 and 10 / Entre 5 y 10
- Between 10 and 30 / Entre 10 y 30
- Between 30 and 50 / Entre 30 y 50
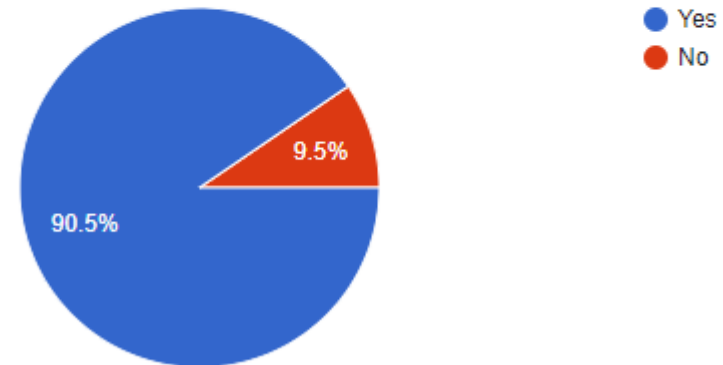- More than 50 / Mas de 50

Survey results

- Almost all of the 21 businesses surveyed confirmed that they store transaction data from their business. This means that Hispanic business owners are familiar with collecting sales records and other data, however the question here is, how they collect and use this data?

Do you store transactions data from your business?

¿Guardas datos de las transacciones de tu negocio?

21 responses

90.5%
9.5%

- Yes
- No

Survey results

Of the 90.5% of business owners that said that they collect data from their business transactions, half of them (57.9%) use Microsoft Excel, while the other half (52.6%) use other technological tools to store/manage their data.

If you responded **yes**, which of these technological tools do you use to store/manage your business data?

Si respondiste **si**, ¿Cuales de estas herramientas tecnológicas utilizas para almacenar/administrar datos de tu negocio?

19 responses
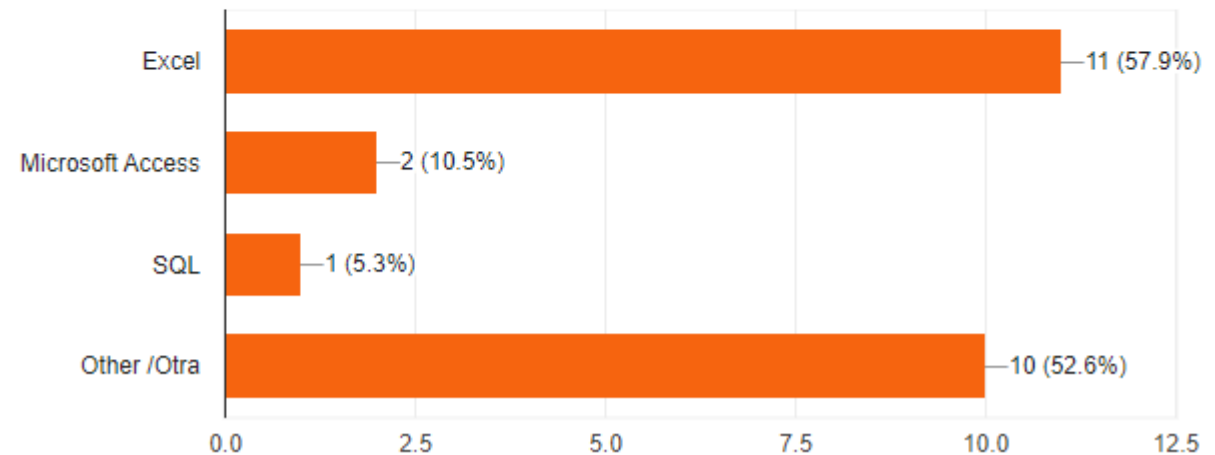
Survey results

Technological tools use to store/manage business data

Below are some of the responses Hispanic business owners provided about the technological tool they use to store/manage their data. Something that catches my attention here, is that the response provided in Spanish says that they collect their business data (sales of the day) in a notebook. This means that is probably that this business owner doesn't know how to use digital tools or software like Excel.

Do you store transaction..	If other, please mention which technological tool do you use to store/manage your business data.	
No	Null	2
Yes	Null	10
	En una libreta voy anotando mis ventas del dia.	1
	Google sheets docs	1
	Invoice2go	1
	MailChimp, QuickBooks	1
	My real estate software stores it for me	1
	POS System (Toast) for transactions and Rewards program for name & email information	1
	Proprietary CRM	1
	Shopify	1
	Square space	1

Survey results

From the previous question, business owners that responded that they don't use any technological tool to store and manage their business data, 57.1% of them said that the reason is for lack of information, while the 28.6% indicated that they cannot afford it, and only the 14.3 of them said that they don't think a database worth its cost.

If you don't use any technological tool to store/manage your business data, which of the options below would be the best reason?

Si no utilizas ninguna herramienta tecnológica para almacenar/administrar datos de tu negocio, ¿Cuál de las siguientes razones sería la más apropiada?

7 responses
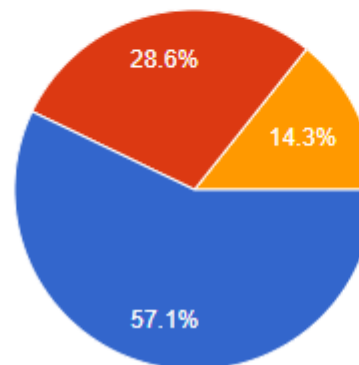
- Lack of information | Falta de información
- I cannot afford it | No puedo pagarla
- I don't think a database worth its cost | No creo que una base de datos valga su costo

28.6%
14.3%
57.1%

Survey results

- One of the main questions of this study was about the frequency that respondents analyze their business performance, the results are similar for the weekly and monthly basis with 33.3% respectively. 14.3% of the surveyed indicated that they analyze their business performance annually, and the rest of the businesses analyze their performance quarterly and semiannually.
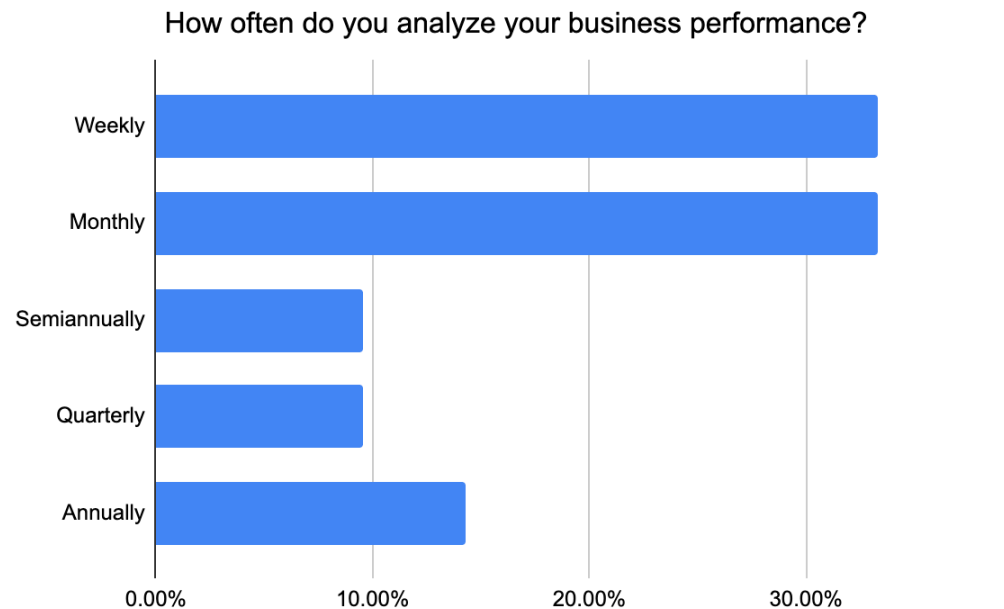
How often do you analyze your business performance?

Survey results

- After asking respondents how often do they analyze their business performance, they also were asked about the way they do this analysis. Although it was an optional question, more than half of the respondents (62%) provided their method to make this analysis.

- Here are some of their responses.

Profit and loss and next quarter projection

We use Shopify as our payment processor, website host and inventory system, and receive analytics through it

By the numbers of houses sold

Through my square register

By looking at what needs to get done and what we are doing good and what we are doing wrong

I look at analytics received from providers

Using KPIs in a dashboard that I created in Google Sheets
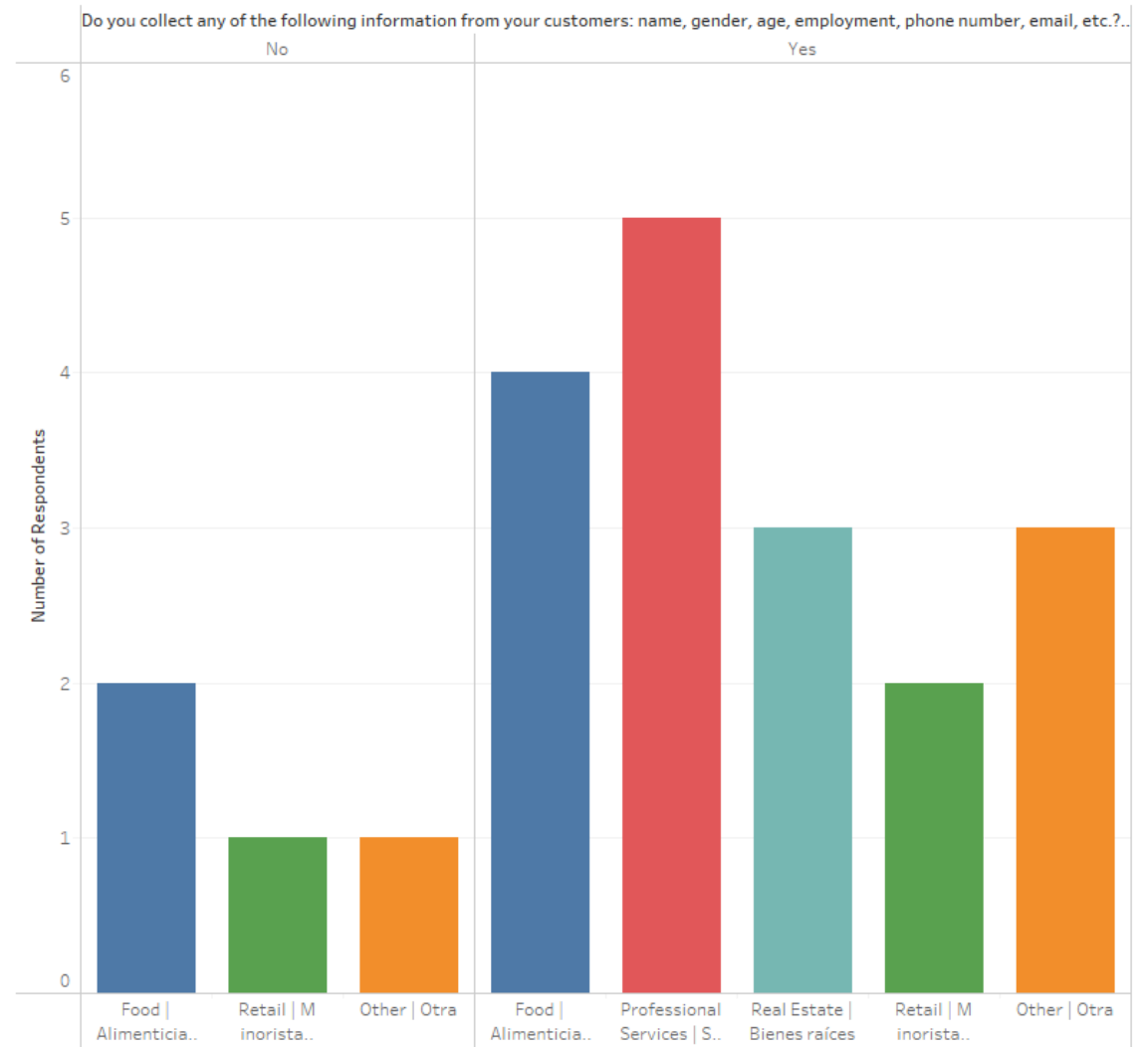
P & L report

Survey results

- According to the data the food industry is more focus on sales and performance.
- The professional services category indicates that they use analytics received by provider.
- Retail businesses are more focused on revenue, expenses and inventory.
- And we can see how most of the businesses use software like square-up or software designed specifically for their sector, for example (Real Estate software).

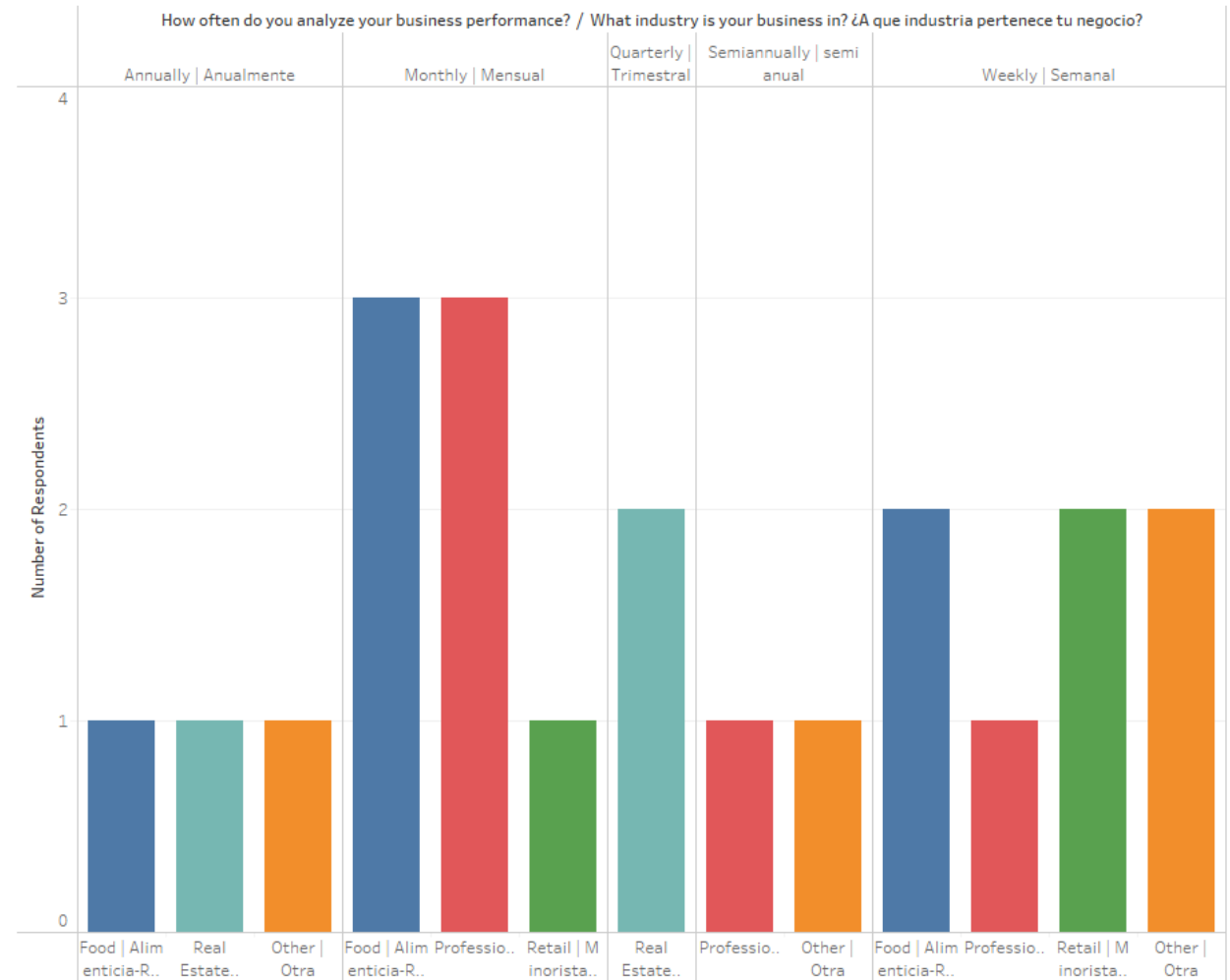| What industry is your business in? ..	Optional: How do you analyze your business performance?	
Food | Alimenticia-Restaurante	By looking at what needs to get done and what we are doing good and what we are doing wrong	1
	Con la cantidad de producto vendido	1
	Despues de cada evento	1
	En base al reporte de ventas mensual que me envían mis proveedores de la registradora	1
	no answer	1
	P & L report	1
Professional Services | Servicios profesionales	I look at analytics received from providers.	1
	no answer	3
	Using KPIs in a dashboard that I created in Google Sheets	1
Real Estate | Bienes raíces	By the numbers of houses sold	1
	Profit and loss and next quarter projection	1
	Revenue and expense	1
Retail | Minorista (venta al por menor)	Gastos, ingresos e inventario	1
	Through my square register	1
	We use Shopify as our payment processor, website host and inventory system, and receive analytics through it.	1
Other | Otra	no answer	4

Survey results

- By analyzing the survey results about collecting customers' demographics related to the business industry, the following bar chart shows that from the 20+ businesses surveyed the food and professional services are the industries that most collect personal data from their customers. However, we can also see some business owners in the food and retail industry indicating that they do not collect data from clients.

Do you collect any of the following information from your customers: name, gender, age, employment, phone number, email, etc.?..

Survey results

- The following graph shows the different industries divided by the frequency of time they analyze their business performance.
- Most of the businesses surveyed in the food, retail and professional services analyze their business performance on the monthly basis.
- However, based on these data we can also determine that although some business owners belong to the same sector they have their own timing in conducting the analysis of their business.

How often do you analyze your business performance? / What industry is your business in? ¿A que industria pertenece tu negocio?

| Annually \| Anualmente | Monthly \| Mensual | Quarterly \| Trimestral | Semiannually \| semi anual | Weekly \| Semanal |

Number of Respondents

Food \| Alim enticia-R.. Real Estate.. Other \| Otra Food \| Alim enticia-R.. Professio.. Retail \| M inorista.. Real Estate.. Professio.. Other \| Otra Food \| Alim enticia-R.. Professio.. Retail \| M inorista.. Other \| Otra

Survey results

- Even though this survey shows that not all businesses use data analytics to improve their business performance, all of the respondents (100%) say that data gathering and data analysis would make a difference for the management decision making in their business.

Do you think data gathering and data analysis would make a difference for the management decision making in your business?

¿Consideras que la recolección de datos y el análisis de tal podría beneficiar la administración y decisiones en tu negocio?

21 responses
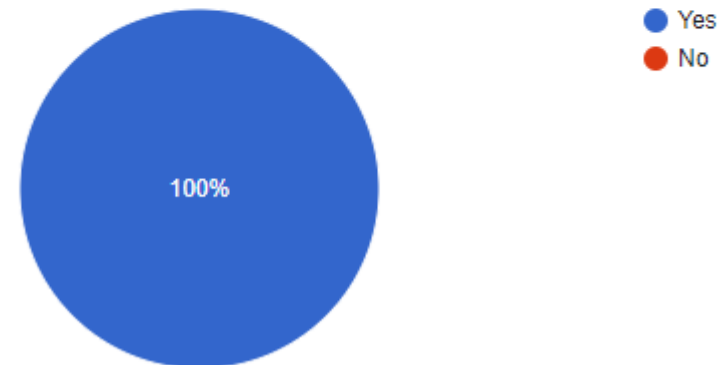
- Yes
- No

100%

Recommendations and Conclusions

Recommendations and conclusions

- From this study, I have come to the conclusion that Hispanic small businesses in the Chicago area are familiar with data but they don't use it effectively. The rich variety of data that businesses generate has valuable insights that with the use of data analytics this data can be transformed into valuable information that can help the business with efficiency and effectiveness.

- For example, many business owners surveyed say that they collect information like sales, demographic and other customer and product data transactions, however the information they collect is used only to see profit, loss or inventory. And they don't benefit from analytical advantages such as forecasting, scheduling, sentiment analysis, etc.

- ## Analytical Methods for Small Business

❑ **Forecasting**
- Forecasting can help the business to save time, make more accurate, reliable, and cost effective decisions. the process of looking at past and present data, as well as marketplace trends, to predict the company's future financial performance. They can use either quantitative or associative.
  - Quantitative: check for trends, seasonality, cycles, irregularities in data.
  - Associative: Correlation and regression methods help the business to forecast future sales.

❑ **Scheduling**
- With scheduling the business can allocate workloads to specific work center and determine the sequence which operations are to be performed.
- Businesses can utilize any of the following frequency priority rules How Hispanic small companies analyze their business performance?
  - FCFS: First Come First Serve
  - SPT: Shortest Processing Time
  - EDD: Earliest Due Date

❑ **Sentiment Analysis (opinion mining)**
- This natural language processing (NLP) help discover patterns in large data sets like emails, reviews, social media comments, chat transcripts etc. to determine whether data is positive, negative or neutral.
- For example, customer feedback/review sentiment analysis Improve customer experience by uncovering customers feelings about a product or service, and based on this insights businesses can take smart actions like offering items as consumer-friendly as possible.

- Conclusion

Data analytics provide meaningful insights that display a complete business overview. This insights eliminate the need to make decisions based only on guesswork and what others businesses do, allowing companies to take action according to changes in the market, clients necessities and demand, and so on.

Small businesses have increasingly adopted new technology as part of their daily operations, this provide great opportunities for them to start implementing basic analytics in their business with the use of commonly known softwares such as excel, access, google sheet, etc.

References

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Thank You

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