From Tradition to Technology:
<u>Modernising MARBLE SAGAR's Operations</u>

Final Submission for the BDM capstone Project

<u>Submitted by</u>

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Executive Summary

The report offers an in-depth analysis of Marble Sagar, a prominent marble trading company headquartered in Kelwa, Rajsamand, Rajasthan. Renowned for its dual role as a manufacturer and distributor of premium marble slabs, Marble Sagar operates across both the Business-to-Business (B2B) and Business-to-Consumer (B2C) sectors, specialising primarily in flooring marble. Its product portfolio encompasses a diverse range of marble varieties, including Morwad, Agariya White, Agariya Plain, Alwata, and Kelwa-garh, prized for their unique colours and patterns.

Through meticulous analysis, the report uncovers vital insights into Marble Sagar's sales dynamics, customer demographics, SWOT analysis, geographical aspects, and emerging market trends. Noteworthy observations include the influence of seasonal fluctuations and market dynamics on sales trends, the predominance of B2B transactions in driving revenue, the significance of customer retention strategies, and the imperative for warehouse expansion in key regions. Additionally, the report dealt with Marble Sagar's overarching business goal to increase sales and achieve overall revenue growth.

Based on the analysis, the report presents a set of actionable recommendations tailored to address Marble Sagar's challenges and capitalise on its strengths. These recommendations encompass strategies for product optimisation, customer retention initiatives, strategic partnerships with key clients, expansion plans for warehouse facilities, inventory management enhancements, regional customisation of product offerings, and the integration of technology for operational efficiency. The report emphasises the need for Marble Sagar to foster a culture of innovation and agility to remain competitive and responsive in a rapidly evolving business landscape.

Furthermore, the report underscores the significance of fostering strong relationships with suppliers, leveraging data analytics for informed decision-making, and investing in employee training and development to enhance operational efficiency and customer service. Ultimately, the report serves as a strategic blueprint for Marble Sagar, providing invaluable insights and pragmatic recommendations to navigate industry challenges, seize growth opportunities, and achieve sustainable success in a competitive market environment.

Analysis Process

In this comprehensive analysis, we embark on a detailed examination of Marble Sagar's business operations, with a specific focus on their marble tile sales. Our aim is to provide Marble Sagar with a thorough understanding of its performance and areas for improvement through meticulous data collection, rigorous cleaning, and in-depth analysis. Let's delve into each step in detail to grasp the methodology employed.

Step 1: Data Collection

The initial phase of our analysis focused on gathering data from Marble Sagar's sales records, primarily consisting of paper bills. To facilitate further analysis, I manually transcribed the information from these paper bills into Excel spreadsheets. This meticulous process ensured that critical transaction details, including dates, customer classifications (B2B/B2C), delivery locations, and financial specifics, were accurately captured and organised.

However, it's important to acknowledge a limitation in the data collected: the paper bills lacked detailed information regarding the types and dimensions of marble sold. Additionally, they did not provide insights into the quantities of marble sold, particularly in terms of the number of slabs or specific dimensions. Furthermore, the purchase bills lacked specific details necessary for determining prices, which introduced complexity to the pricing analysis process.

During the data collection process, I meticulously reviewed and validated the information to ensure its accuracy and completeness. Any missing values or discrepancies, such as identifying whether the entity was a business organisation or an individual customer, were carefully addressed and confirmed with the owner of Marble Sagar.

The picture on the right showcases proposed bills intended for billing purposes. These bills are essential for documenting transactions accurately and facilitating seamless billing processes. However, to complete these bills, additional data collection is required, including the quantity of marble supplied, the mode of transport or delivery, and other pertinent details.

Step 2: Data Preparation

Following the data collection phase, the next step involved preparing the collected data for analysis. This included organising the data within the Excel spreadsheets, cleaning any inconsistencies or errors, and structuring it in a format conducive to analysis.

I meticulously reviewed each entry in the dataset to identify and rectify any discrepancies or missing information. This involved cross-referencing the data with the original paper bills to ensure accuracy. Additionally, I standardised the format of the data to enhance consistency and ease of analysis.

Despite the challenges posed by the limitations of the paper bills, such as the lack of detailed product information, I ensured that the available data was properly formatted and ready for analysis. This involved categorising the data into relevant variables, such as transaction dates, customer types, and delivery locations, to facilitate subsequent analysis.

Overall, the data preparation phase was crucial in ensuring that the collected data was clean, consistent, and ready for in-depth analysis. By meticulously organising and standardising the dataset, we set the stage for deriving meaningful insights into Marble Sagar's business operations and performance.

Sales Register [1-04-2020 to 31-08-2023]

ID	Date	Month	Year	FY	Owner	B/C	Place	State	Debit	Credit	Tax(%)
1	29	5	2020	1	Hindustan Marble Udhyog	B	Jaipur	Rajasthan	380357.00	322337.00	18
2	22	6	2020	1	Anurag Marble & Minerals	B	Makrana	Rajasthan	165200.00	140000.00	18
3	7	10	2020	1	The Raj Group	B	Kelwa	Rajasthan	118000.00	100000.00	18
4	12	10	2020	1	Manglam Marble	B	Amet	Rajasthan	48970.00	41,500.00	18
5	25	10	2020	1	Ganpati Marble	B	Biriyad	Rajasthan	147434.00	124944.00	18
6	29	10	2020	1	Anurag Marble & Minerals	B	Makrana	Rajasthan	94400.00	80000.00	18
7	31	10	2020	1	Ganpati Marble	B	Biriyad	Rajasthan	176208.00	149328.00	18
8	29	11	2020	1	Bhagya Shree Marble	B	Rajsamand	Rajasthan	108913.00	92299.00	18
9	2	12	2020	1	Pannalal Ji Teli	C	Udaipur	Rajasthan	29500.00	25000.00	18
10	23	12	2020	1	Anil Kumar Modi	C	Jhunjhunu	Rajasthan	49560.00	42000.00	18
11	23	12	2020	1	Rajesh Laddha	C	Bhilwara	Rajasthan	47188.00	39990.00	18
12	25	12	2020	1	Anjali Marble	B	Udaipur	Rajasthan	127028.00	107650.00	18
13	15	1	2021	1	Nav Nirman Udhyog	B	Kolkata	West Bengal	169474.00	143622.00	18
14	2	2	2021	1	Classic Marble & Granite	B	Patna	Bihar	113870.00	96500.00	18
15	9	2	2021	1	Ram Chandra Prabhakar	C	A.P.	A.P.	95343.00	80799.00	18
16	11	3	2021	1	Sainarain Gupta & Poonam Gupta	C	Noida	Delhi	198413.00	168147.00	18
17	2	4	2021	2	Ruby Stone	B	Ahmedabad	Gujarat	123310.00	104500.00	18
18	28	4	2021	2	Shri Lakshmi Shriniwas Marble & Tiles	B	A.P.	A.P.	190387.00	161345.00	18
19	16	5	2021	2	Sagar Tiles	B	A.P.	A.P.	148533.00	125875.00	18
20	20	6	2021	2	Shri Rajasthan Marble Udhyog	B	Pasoond	Rajasthan	148533.00	125875.00	18
21	29	6	2021	2	Varsha Marble & Granite	B	Amet	Rajasthan	57347.00	48599.00	18
22	2	7	2021	2	Meetra Marble Center	B	Kolkata	West Bengal	13651.00	11569.00	18
23	6	8	2021	2	Shyam Marble	B	Surat	Gujarat	64775.00	54894.00	18
24	17	8	2021	2	Jay Bholaram Marble	B	Kolkata	West Bengal	149076.00	126336.00	18
25	30	8	2021	2	Jankar singh	C	Jammu	J&K	144541.00	122493.00	18
26	16	9	2021	2	Venkateshwara Gypsum & Pop Mart	B	Dachepalli	A.P.	156098.00	132286.00	18
27	29	9	2021	2	Nav Nirman Udhyog	B	Kolkata	West Bengal	102837.00	87150.00	18
28	7	10	2021	2	Vivek Tiles & Sanitory	B	A.P.	A.P.	132573.00	112350.00	18
29	20	10	2021	2	A.D. Enterprises	B	Kolkata	West Bengal	238045.00	201733.00	18

Step 3: Exploratory Data Analysis (EDA)

With the dataset cleaned and validated, we conducted exploratory data analysis (EDA) to gain insights into Marble Sagar's sales performance and identify patterns or trends within the data. Leveraging statistical techniques and data visualisation tools, we embarked on a comprehensive exploration of Marble Sagar's sales data. Our analysis encompassed diverse facets, including sales trends, understanding distribution by category, and uncovering correlations.

For instance, column charts served as invaluable tool for visualising the distribution of sales revenue across various months. This facilitated the identification of seasonal patterns and fluctuations within Marble Sagar's business operations. By employing Python for analysis, we could delve deeper into the data, extracting nuanced insights that inform strategic decision-making.

1. <u>Descriptive Statistics:</u>

Utilised the `.describe()` method to obtain summary statistics for numerical variables, including count, mean, standard deviation, minimum, maximum, and quartiles.

```
data.describe()
✓ 0.3s
```

	ID	Date	Month	Year	FY	Debit	Credit	Tax(%)
count	54.000000	54.000000	54.000000	54.000000	54.000000	54.000000	54.000000	54.0
mean	27.500000	15.703704	6.870370	2021.240741	2.000000	135711.444444	114742.888889	18.0
std	15.732133	9.454219	3.618852	0.888823	0.777029	79048.277562	66535.398337	0.0
min	1.000000	2.000000	1.000000	2020.000000	1.000000	3540.000000	3000.000000	18.0
25%	14.250000	7.000000	4.000000	2021.000000	1.000000	93379.750000	79135.500000	18.0
50%	27.500000	15.500000	7.000000	2021.000000	2.000000	139424.500000	118156.500000	18.0
75%	40.750000	23.000000	10.000000	2022.000000	3.000000	178415.250000	151199.250000	18.0
max	54.000000	31.000000	12.000000	2023.000000	3.000000	380357.000000	322337.000000	18.0

2. Data Overview:

Used the `.info()` method to display a concise summary of the DataFrame, showing column names, data types, and non-null counts for each column.

The picture in the right shows output to `.info()` method.

```
data.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 54 entries, 0 to 53
Data columns (total 12 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   ID      54 non-null     int64
 1   Date    54 non-null     int64
 2   Month   54 non-null     int64
 3   Year    54 non-null     int64
 4   FY      54 non-null     int64
 5   Owner   54 non-null     object
 6   B/C     54 non-null     object
 7   Place   46 non-null     object
 8   State   54 non-null     object
 9   Debit   54 non-null     float64
 10  Credit  54 non-null     object
 11  Tax(%)  54 non-null     int64
dtypes: float64(1), int64(6), object(5)
memory usage: 5.2+ KB
```

4. Geographical Heatmap:

Used Geopandas and Matplotlib to create a geographical heatmap. This involves merging the dataset with geographical shapefiles and then plotting the data on a map to visualise spatial patterns and trends across different regions or states.

By following these steps in the EDA process, we gain insights into the dataset's structure, distribution, relationships between variables, and geographical patterns, laying the groundwork for further analysis and decision-making.

```python
import geopandas
```

```python
india = geopandas.read_file('/india_ds.shp')
```

+ Code   + Markdown

```python
print(data['State'].unique())
```
```
['RAJASTHAN' 'WEST BENGAL' 'BIHAR' 'A.P.' 'DELHI' 'GUJARAT'
 'JAMMU AND KASHMIR' 'ANDHRA PRADESH' 'PUNJAB' 'KERALA' 'PONDICHERRY'
 'TAMIL NADU' 'UTTAR PRADESH']
```

```python
# Merge or join GeoPandas DataFrame with your data
merged_gdf = india.merge(data, how='inner', left_on='STATE', right_on='State')
```

```python
import matplotlib.pyplot as plt

# Plot the map
fig, ax = plt.subplots(figsize=(10, 10))
merged_gdf.plot(column='STATE', cmap='viridis', linewidth=0.8, ax=ax, edgecolor='0.8', legend=True)
plt.show()
```

The picture in the right shows output to geopandas code for geographical representation of Marble Sagar's approach to various states.
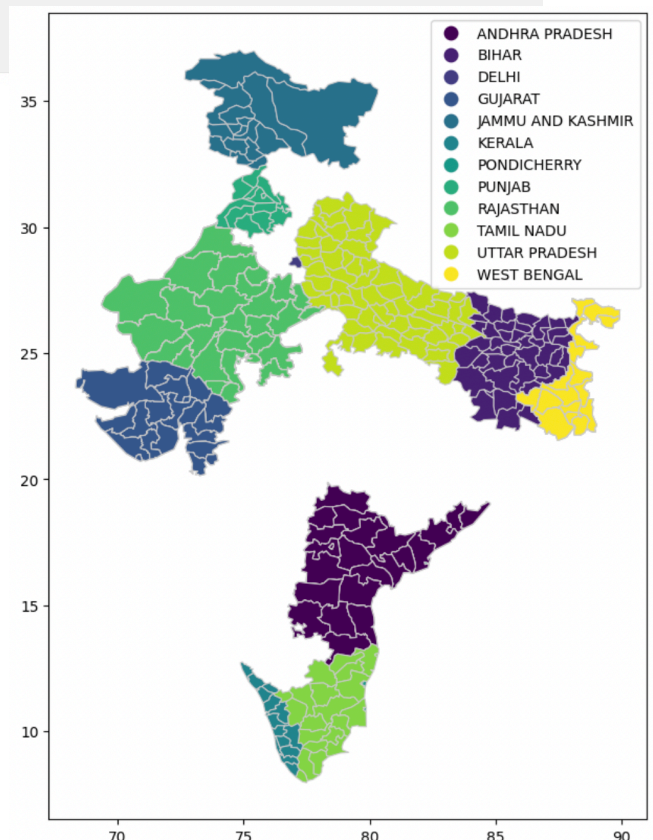
3. Correlation Analysis and Heatmap:
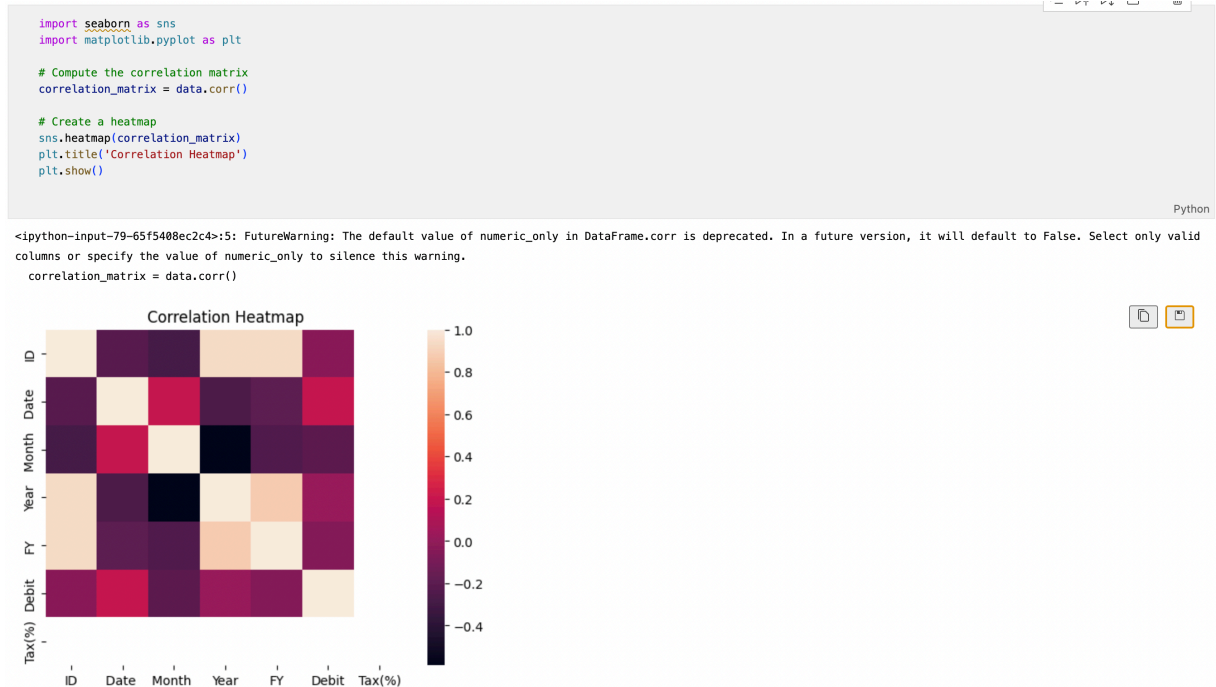
Computed the correlation matrix using `.corr()` and visualise it as a heatmap using libraries like Seaborn or Matplotlib. This helps identify relationships between variables and potential multicollinearity issues.

```python
import seaborn as sns
import matplotlib.pyplot as plt

# Compute the correlation matrix
correlation_matrix = data.corr()

# Create a heatmap
sns.heatmap(correlation_matrix)
plt.title('Correlation Heatmap')
plt.show()
```
Python

<ipython-input-79-65f5408ec2c4>:5: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
  correlation_matrix = data.corr()

Step 4: Addressing Business Challenges:

In addition to standard analysis, we focused on addressing two critical business challenges faced by Marble Sagar: declining sales and reliance on traditional methods.

Declining Sales:

We delved into the factors contributing to declining sales by analysing sales patterns over time, identifying any seasonal fluctuations, and assessing the impact of external factors such as economic climates and competitive dynamics. Utilising time-series analysis and trend projection methods, we forecasted future sales trajectories and recommended strategies to mitigate the downward trend.

During our analysis, we observed that sales tended to decrease during the summer months, possibly due to unfavourable weather conditions. This finding underscores the significance of seasonal variations in sales performance and suggests the need for targeted strategies to address fluctuations in demand during specific times of the year.

<u>Reliance on Traditional Methods:</u>

Recognising the importance of modernising Marble Sagar's business operations, we conducted a gap analysis between current practices and industry best practices. This enabled us to identify areas where adopting new technologies or methodologies could streamline operations, improve efficiency, and enhance customer satisfaction. Recommendations include implementing a digital inventory management system, adopting online sales channels, or investing in customer relationship management (CRM) software.

We propose integrating an online ordering platform where customers can browse Marble Sagar's product catalog, place orders, and make payments digitally. This not only enhances convenience for customers but also reduces reliance on paper-based transactions, leading to greater efficiency and accuracy in order processing.

Step 5: Advanced Analytics and Modelling:

Building upon the insights gained from EDA and addressing business challenges, we employed advanced analytics techniques and modelling to further analyse Marble Sagar's sales data and extract meaningful insights. This includes predictive modelling to forecast future sales trends, clustering analysis to segment customers based on purchasing behaviour, and more.

Predictive modelling techniques such as time series forecasting can help Marble Sagar anticipate future demand for marble tiles based on historical sales data and external factors like construction industry trends and economic indicators. By accurately predicting future sales volumes, Marble Sagar can optimise inventory management and production planning, ensuring adequate stock levels to meet customer demand without excess inventory.

Step 6: Performance Evaluation and Recommendations:

Finally, we will evaluate Marble Sagar's performance based on the insights gleaned from the analysis and provide actionable recommendations for improvement. This may include optimising pricing strategies, refining marketing campaigns, improving inventory management practices, and enhancing customer service initiatives.

For instance, based on our analysis, we may recommend implementing dynamic pricing strategies that adjust prices based on factors such as demand levels, competitor pricing, and customer segmentation. By adopting dynamic pricing, Marble Sagar can maximise revenue and profitability while remaining competitive in the market.

Through a comprehensive analysis process encompassing data collection, cleaning, exploratory analysis, addressing business challenges, advanced analytics, and performance evaluation, we aim to empower Marble Sagar with the insights and recommendations needed to thrive in the competitive marble tile market.

Result & Findings

1. Time-Series Analysis:

The decision to generate the graph showcasing the sales price against transaction IDs stems from the necessity to dissect Marble Sagar's sales trends and identify any notable patterns or anomalies. By visually representing the sales price over various transactions, we aim to uncover insights into the company's revenue dynamics and potential areas for improvement.

The outcomes of this analysis shed light on critical aspects of Marble Sagar's business operations. The observable periods of significant decline in the sales price are particularly noteworthy. Through discussions with the company owner, it has been brought to attention that these downturns coincide with transactions resulting in losses. These losses are attributed to instances where the marble fails to meet quality standards or exhibits visible cracks, rendering it unsuitable for sale.
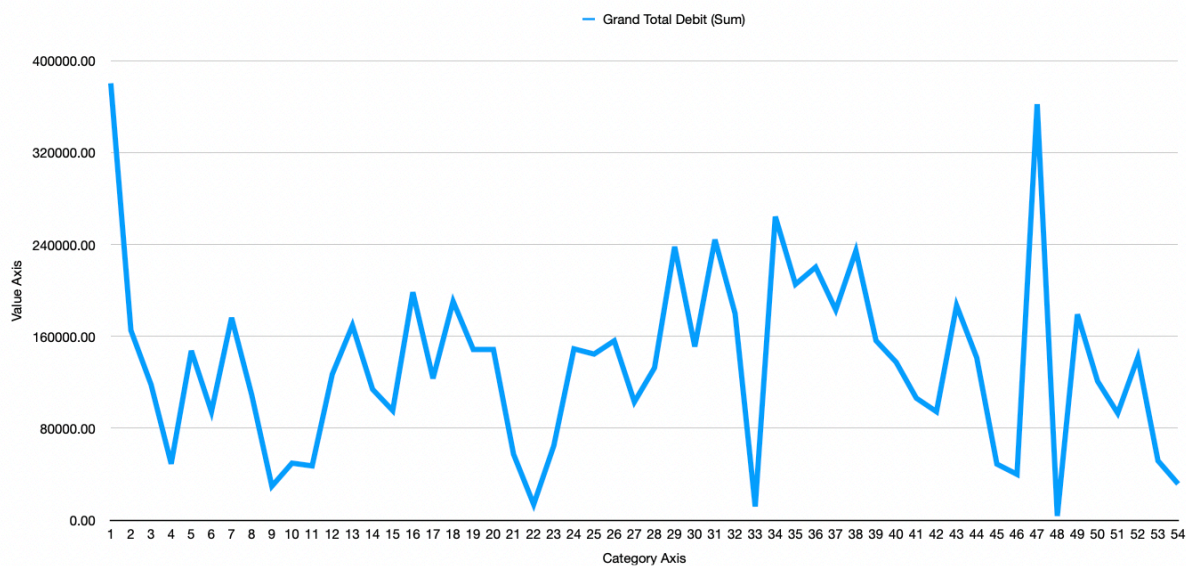
This revelation underscores the importance of quality control measures within Marble Sagar's production and procurement processes. It highlights the need for stringent quality checks to ensure that only high-quality marble products are offered

to customers, thereby minimising the occurrence of loss-making transactions and preserving the company's reputation for delivering superior products.

In summary, the decision to plot the sales price against transaction IDs provides valuable insights into Marble Sagar's sales patterns and illuminates the significance of quality control in mitigating losses and sustaining profitability.

2. B2B vs B2C:

The decision to plot the distribution of B2B and B2C transactions stems from the need to understand Marble Sagar's customer base and tailor its sales strategies accordingly. By visualising the proportion of B2B and B2C transactions, we gain insights into the company's primary customer segments and their relative importance to overall sales revenue.

The results of the analysis provide valuable information about Marble Sagar's market dynamics. The overwhelming dominance of B2B transactions suggests that the company's client base predominantly comprises businesses rather than individual consumers. This indicates that Marble Sagar may have established strong relationships with contractors, construction companies, or other businesses involved in the construction industry. As a result, the company may benefit from focusing its marketing and sales efforts on nurturing and expanding its B2B clientele.

Sales Register [1-04-2020 to 31-08-2023] Pivot

B/C	C	B	Grand Total
FY	Debit (Sum)		
1	420004.00	1649854.00	2069858.00
2	547795.00	2816149.00	3363944.00
3	333428.00	1561188.00	1894616.00
Grand Total	1301227.00	6027191.00	7328418.00
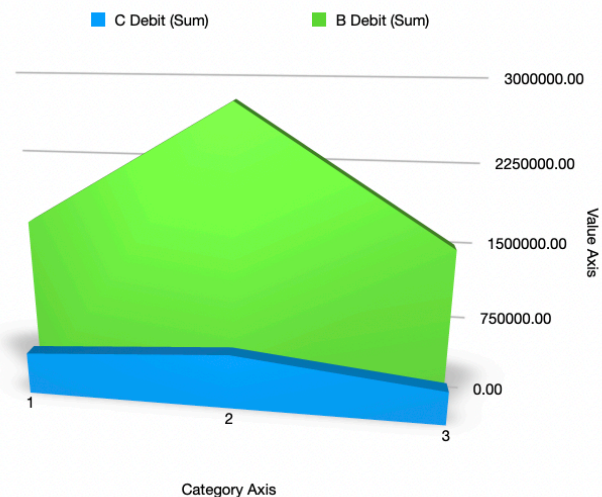
The graph depicts the distribution of B2B and B2C transactions over financial years, with the y-axis representing the sum of debit transactions. B2C transactions are represented in blue, while B2B transactions are depicted in green, allowing for a clear visual comparison between the two customer segments over different financial periods.
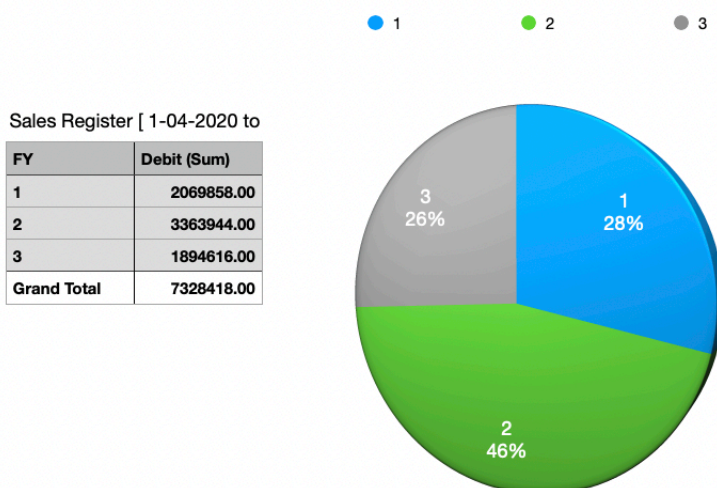
Furthermore, the disparity between B2B and B2C transactions underscores the potential growth opportunities in B2B sales for Marble Sagar. By capitalising on its existing relationships and reputation within the business community, Marble Sagar can strategically target B2B clients to drive sales growth and enhance profitability.

In summary, the decision to plot the distribution of B2B and B2C transactions offers valuable insights into Marble Sagar's customer composition and highlights the significance of B2B sales for the company's future growth and success.

3. <u>Yearly Sales:</u>

The decision to plot the sales data across different financial years stemmed from the need to analyse Marble Sagar's sales performance over time and identify any discernible trends or fluctuations. By visualising the sales distribution across fiscal years, we aimed to gain insights into the company's revenue patterns and assess its business trajectory.

The results of this analysis revealed significant disparities in sales contributions from each financial year. Notably, FY2 (2021-22) emerged as the most prominent, accounting for 46% of the total sales over the three-year period. In contrast, FY1 (2020-21) constituted 28% of the sales, while FY3 (2022-23) comprised 26%. This disparity in sales distribution raises intriguing questions about the underlying factors driving these variations.

Sales Register [1-04-2020 to

FY	Debit (Sum)
1	2069858.00
2	3363944.00
3	1894616.00
Grand Total	**7328418.00**

Upon closer examination, it becomes apparent that the prevailing COVID-19 pandemic likely exerted a substantial influence on Marble Sagar's business dynamics during this period. The surge in sales during FY2 (2021-22) could be attributed to various factors, including pent-up demand, shifts in consumer

preferences, or strategic business initiatives undertaken by Marble Sagar to adapt to the evolving market conditions amidst the pandemic.

Conversely, the lower sales contributions from FY1 (2020-21) and FY3 (2022-23) might reflect the initial disruptions caused by the pandemic and the subsequent challenges faced by the company in navigating the uncertainties of the market landscape. These findings underscore the profound impact of external factors, such as the COVID-19 pandemic, on businesses and highlight the importance of adaptability and resilience in ensuring sustained growth and success.

4. <u>Month-wise Revenue</u>:

The decision to create a month-wise revenue chart stemmed from the objective of understanding Marble Sagar's sales performance over different months and discerning any patterns or trends in revenue generation. By visualising the revenue collected each month, segmented by customer type (B2B and B2C), we aimed to uncover insights into the company's sales dynamics and identify any noteworthy observations.

B/C	B	C	Grand Total
Month	Debit (Sum)		
1	626935.00	93043.00	719978.00
2	319190.00	95343.00	414533.00
3	265974.00	601667.00	867641.00
4	607391.00		607391.00
5	528890.00	200566.00	729456.00
6	557913.00		557913.00
7	203797.00		203797.00
8	213851.00	184360.00	398211.00
9	621072.00		621072.00
10	1259271.00		1259271.00
11	504197.00		504197.00
12	318710.00	126248.00	444958.00
Grand Total	6027191.00	1301227.00	7328418.00
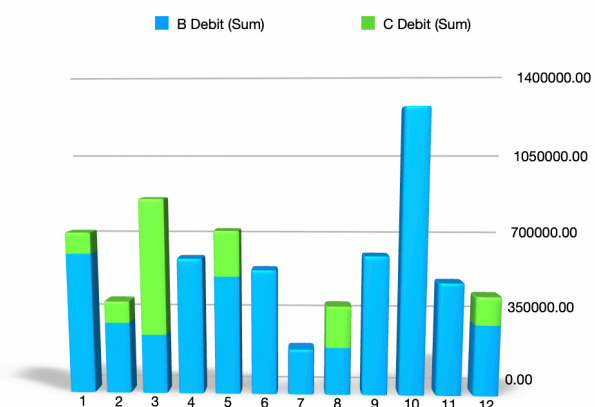
In the chart, the x-axis represents the months of the year, while the y-axis indicates the amount of revenue collected. The chart is further divided into segments representing B2B and B2C transactions, providing a comprehensive overview of sales performance over time and across different customer categories.

Upon analysing the chart, several interesting findings emerged. Firstly, we observed that the month with the highest individual customer visits and deals was the third month, March. This indicates heightened customer activity and engagement during this period, potentially influenced by various factors such as seasonal trends or market dynamics.

Moreover, the most significant sales revenue was generated in the tenth month, with all transactions categorised as B2B. This observation suggests a concentrated period of high-value business-to-business transactions during this time frame.

Upon sharing these insights with the owner, it was revealed that the spike in sales during the tenth month could be attributed to the festive atmosphere surrounding Dhanteras, a significant Hindu festival celebrated just before Diwali. Traditionally, Dhanteras is considered an auspicious occasion for making purchases, particularly of precious metals and commodities, symbolising prosperity and good fortune for the upcoming year.

This revelation underscores the importance of understanding and leveraging cultural and seasonal factors in driving sales and business growth. By aligning marketing strategies and sales efforts with key cultural events and festivities, Marble Sagar can capitalise on heightened consumer spending patterns and optimise revenue generation opportunities. Additionally, it highlights the significance of customer engagement and relationship-building initiatives during peak sales periods to maximise business outcomes and foster long-term success.

5. <u>Count of Transactions by State:</u>

The decision to plot the count of transactions by state stems from the need to understand Marble Sagar's regional sales distribution and identify key geographic areas of business activity. By visualising the number of transactions in each state, we gain insights into the company's market penetration and the relative importance of different regions to its overall sales performance.

The graph illustrates the count of transactions by state, with the x-axis representing states and the y-axis indicating the number of transactions. Each state is colour coded to distinguish between B2B and B2C transactions, providing a clear visual representation of sales distribution across different regions over the three-year period.

State	B/C B	C	Grand Total
	Owner (Count All)		
A.P.	5	1	6
Bihar	1		1
Delhi		1	1
Gujarat	2	2	4
Hydrebad	1		1
J&K		1	1
Kerala	1		1
Pondicherry	1		1
Punjab	1		1
Rajasthan	20	6	26
Tamil Nadu		1	1
Telangana	3		3
U.P	1		1
West Bengal	6		6
Grand Total	42	12	54
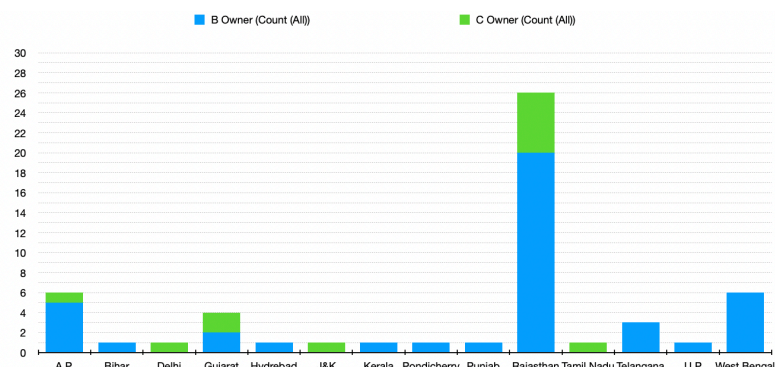
The results of the analysis reveal important patterns in Marble Sagar's sales landscape. Notably, Rajasthan emerges as the primary hub of business activity, with the highest number of transactions recorded over the three-year period. This finding suggests that Rajasthan serves as Marble Sagar's core market, indicating strong customer demand and business opportunities within the state.

Conversely, several states, including Bihar, Delhi, Hyderabad, Jammu and Kashmir, Pondicherry, Punjab, Tamil Nadu, and Uttar Pradesh, exhibit minimal transaction activity, with only sporadic deals occurring over the three-year timeframe. This observation highlights potential areas for expansion and growth, as these states may represent untapped markets or regions where Marble Sagar's presence is currently limited.

Moreover, after Rajasthan, other notable states such as Andhra Pradesh, West Bengal, Telangana, and Gujarat emerge as significant contributors to Marble Sagar's sales, indicating secondary hubs of business activity outside the company's primary market.

In summary, the decision to plot the count of transactions by state offers valuable insights into Marble Sagar's regional sales distribution and underscores the importance of understanding geographic dynamics in shaping business strategies. By identifying regions of strength and areas for potential growth, Marble Sagar can tailor its sales and marketing efforts to capitalise on existing opportunities and expand its market presence effectively.

6. **State-wise Revenue**:

The decision to plot the distribution of sales amount by state (segmented into B2B and B2C transactions) arose from the necessity to understand Marble Sagar's regional sales performance and identify key contributors to its revenue across different regions. By visualising the sales amount attributed to each state, we aim to discern patterns in revenue generation and pinpoint regions of significant business activity.

Sales Register [1-04-2020 to 31-08-2023] Pivot-1

	B/C	B	C	Grand Total
State		Debit (Sum)		
A.P.		832911.00	95343.00	928254.00
Bihar		113870.00		113870.00
Delhi			198413.00	198413.00
Gujarat		188085.00	403254.00	591339.00
Hydrebad		151040.00		151040.00
J&K			144541.00	144541.00
Kerala		156224.00		156224.00
Pondicherry		362137.00		362137.00
Punjab		234484.00		234484.00
Rajasthan		2486512.00	366633.00	2853145.00
Tamil Nadu			93043.00	93043.00
Telangana		507363.00		507363.00
U.P		141600.00		141600.00
West Bengal		852965.00		852965.00
Grand Total		6027191.00	1301227.00	7328418.00
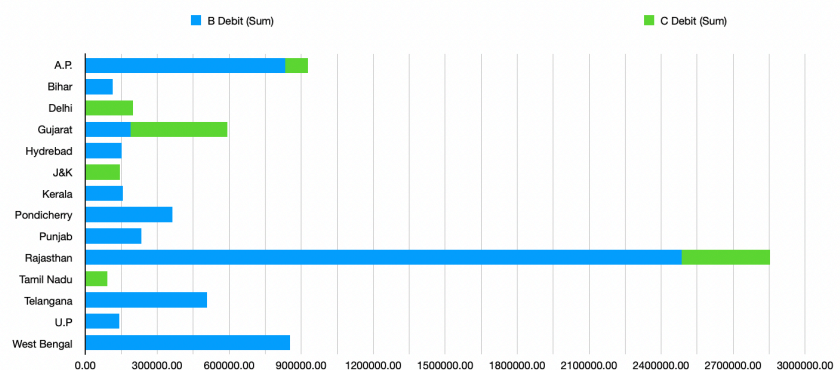
The graph illustrates the distribution of sales amount by state, with the x-axis representing the sales amount and the y-axis indicating the names of states. Each state is colour coded to differentiate between B2B and B2C transactions, providing a clear visual representation of sales distribution across different regions. This visualisation enables Marble Sagar to identify key regions driving revenue growth and tailor its strategic initiatives to capitalise on emerging opportunities in these markets.

The insights derived from the analysis provide valuable information about Marble Sagar's geographic sales dynamics. Notably, Rajasthan emerges as the primary source of sales revenue, with the highest amount of sales recorded within the state itself. This observation underscores the importance of Marble Sagar's local market presence and suggests strong customer demand for its products in Rajasthan.

Additionally, several other states, including Andhra Pradesh, Gujarat, Pondicherry, Telangana, and West Bengal, exhibit substantial contributions to Marble Sagar's overall sales revenue. These regions serve as significant hubs of business activity outside Marble Sagar's core market, indicating successful expansion efforts and the company's ability to capture market share in diverse geographic areas.

7. <u>Geographical Analysis</u>:

The decision to create a map highlighting Marble Sagar's market approach across different regions stemmed from the necessity to visualise the company's geographic presence and identify potential areas for business expansion. By mapping out the regions where Marble Sagar operates or has a network, we aimed to gain insights into the company's market coverage and strategic reach.

The map offers a comprehensive visual representation of Marble Sagar's market approach, showcasing the regions where the company has established a presence or conducted business activities. It serves as a valuable tool for understanding the geographic distribution of Marble Sagar's operations and provides insights into the areas where the company may have opportunities for further expansion.
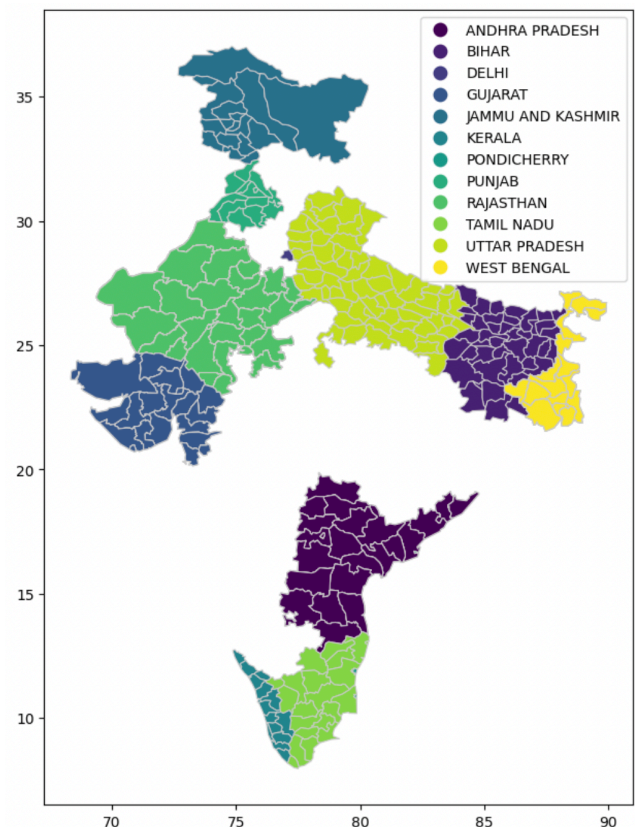
Highlighted regions on the map signify areas where Marble Sagar has existing contacts, networks, or business connections. These regions represent the company's current market stronghold and areas where it has already established a foothold. By identifying these regions, Marble Sagar can leverage its existing networks and relationships to drive growth and strengthen its market position further.

Moreover, the map also highlights regions that are not currently covered by Marble Sagar's operations. These areas represent potential opportunities for expansion and growth. By analysing these untouched regions, Marble Sagar can identify new markets to target and develop strategies to penetrate these markets effectively.

Overall, the map serves as a strategic tool for Marble Sagar, providing insights into its current market coverage, potential areas for expansion, and opportunities for further growth. By leveraging this information, Marble Sagar can make informed decisions about its business expansion strategies and focus its efforts on areas with the highest growth potential.

8. <u>SWOT Analysis</u>:

Strengths
1. High-Quality Products
2. Established Brand Reputation
3. Extensive Distribution Network
4. Experienced Management Team

Weaknesses
1. Reliance on Traditional Sales Channels
2. Limited Product Range
3. Geographic Concentration
4. Price Sensitivity

Threats
1. Intense Competition
2. Economic Instability
3. Technological Disruption
4. Regulatory Challenges

Opportunities
1. Digital Transformation
2. Diversification of Product Portfolio
3. Market Expansion
4. Sustainability Initiatives

Interpretation

Marble Sagar's sales data reveals several key insights that can inform strategic decision-making and drive business growth. Here are the major points derived from the analysis:

1. Revenue Distribution:
   - Total revenue stands at INR 73,28,418.00 for 3-year span, with B2B transactions accounting for INR 60,27,191.00 and B2C transactions for INR 13,01,227.00.
   - The significant disparity between B2B and B2C revenues highlights the importance of focusing on B2B sales channels to maximise revenue generation.

2. Sales Trends Over Time:
   - Analysis of sales trends over time reveals fluctuations and patterns that can be attributed to seasonal factors, market dynamics, and customer behaviour.
   - The spike in sales observed during the tenth month coincides with the festive period surrounding Dhanteras. This uptick in sales can be attributed to increased consumer spending and purchasing activity during this auspicious Hindu festival.
   - By recognising such trends, Marble Sagar can proactively adjust inventory levels and tailor marketing strategies to capitalise on peak sales periods, ensuring optimal revenue generation and business performance.

3. Regional Sales Performance:
   - Regional sales performance analysis indicates variations in sales across different geographic regions.
   - We identified high-performing regions and understanding the factors driving sales in each area, Marble Sagar can tailor its marketing strategies and allocate resources effectively.
   - State-wise revenue analysis identified Rajasthan as the primary revenue contributor, followed by Andhra Pradesh, Gujarat, Pondicherry, Telangana, and West Bengal, indicating successful market penetration in these regions.

4. Customer Insights:
   - Customer demographic data and purchasing behaviour analysis offer insights into different regions' customer preference on buying certain marble patterns.
   - Leveraging these insights allows Marble Sagar to personalise marketing campaigns, enhance customer experience, and improve customer retention rates.
   - The count of transactions by state revealed Rajasthan as the primary market, with significant transaction volumes. Other states exhibited sporadic transaction activity, indicating potential areas for expansion and growth.

Recommendations

Based on the interpretation of the data, here are some strong recommendations for Marble Sagar:

1. Quality Control Enhancement: Implement stringent quality control measures to ensure that all marble products meet high-quality standards, reducing the occurrence of defective products and customer complaints.

2. Diversification of Product Portfolio: Explore opportunities to diversify the product portfolio by offering a wider range of marble varieties, finishes, and sizes to cater to diverse customer preferences and expand market reach.

3. Customer Engagement Initiatives: Launch customer engagement initiatives such as loyalty programs, feedback mechanisms, and personalised communication channels to foster stronger relationships with customers and enhance brand loyalty.

4. Market Expansion Strategy: Develop a comprehensive market expansion strategy to penetrate new geographic regions and target untapped market segments, leveraging insights from market research and competitor analysis.

5. Digital Transformation: Invest in digital technologies and online platforms to streamline operations, improve customer experience, and tap into the growing trend of online marble sales, including the development of a user-friendly website and mobile app.

6. Sustainable Practices: Embrace sustainable practices throughout the supply chain, including responsible sourcing of raw materials, energy-efficient manufacturing processes, and eco-friendly packaging, to appeal to environmentally conscious consumers and enhance brand reputation.

7. Inventory Management Optimisation: Implement advanced inventory management systems and techniques to optimise stock levels, minimise inventory holding costs, and ensure timely availability of marble products to meet customer demand effectively.

8. Strategic Partnerships: Forge strategic partnerships with architects, interior designers, contractors, and real estate developers to increase brand visibility, drive referral sales, and access new customer segments through collaborative projects and joint marketing efforts.