Data Analytics for Business

Exploratory analysis and insights report

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Part 1. Introduction

This analysis provides data-driven insights for the 2Market global marketing team. The management is not satisfied with the decreasing sales figures and market share. Before planning the marketing budget allocation, the marketing team needs to understand the customer base.

The fundamental goals are to understand their customer bases, to group customers into clusters, and to determine single or various marketing approaches or various approaches for their customers in different countries.

Part 2. Analytical approach

In this report, the RFM framework is applied for customer segmentation.

There are 3 metrics, and each corresponds to some key customer traits.

1	[**Recency**] – the freshness of the customer activities ➢ The number of days since the customer's last purchase [**Recency**] was provided in the dataset.
2	[**Frequency**] – the frequency of the customer transaction ➢ The total number of transactions [**Purchase**]= [**NumWebBuy**] + [**NumWalkinPur**] ➢ [**Frequency**] = {FIXED [**ID**]:SUM([**Purchase**])}
3	[**Monetary**] – the spending intention or purchasing power of customer ➢ The total transaction value [**Spending**]= [**AmtLiq**] + [**AmtVege**] + [**AmtNonVeg**] + [**AmtPes**] + [**AmtChocolates**] + [**AmtComm**] ➢ [**Monetary**]= {FIXED [**ID**]:SUM([**Spending**])}

For calculating those values. 2 assumptions were made:

✧ Assumption I: There are only 2 purchase channels for 2Market's customers, either purchasing from stores or from the website.

✧ Assumption II: There are only 6 types of products in 2Market, including alcoholic beverages, vegetables, meat items, fish products, chocolates, and commodities.

After calculating the above values, all customers would be ranked based on each RFM attribute separately. The assigned score for each metric is from 1-4. The top 25% of customers receive a score of 4, the next 25% a score of 3, and so on.

➢ 3 calculated fields were added in Tableau:

(1) [**Recency score**] – The most recent purchasers scored the highest rank

(2) [**Frequency score**] – The most frequent purchasers scored the highest rank

(3) [**Monetary score**] – The biggest spenders scored the highest rank

The next step is to rank these customers by combining their individual R, F, and M rankings to arrive at an aggregated [**RFM score**] calculated field. Those customers can be categorized into 8 types by grouping the aggregated [**RFM score**] in Tableau.

The below diagram shows the grouping of RFM scores for each customer type.

Recency score	Frequency score	Monetary score			
		1	2	3	4
4	4			(1) Top customers	
	3			(1) Top customers	
	2		(2) Active customers		
	1		(2) Active customers		
3	4		(3) Emerging customers		
	3		(3) Emerging customers		
	2	(4) Unsteady customers			
	1	(4) Unsteady customers			
2	4	(5) Customers at risk			
	3	(5) Customers at risk			
	2	(6) Potential lost customers			
	1	(6) Potential lost customers			
1	4	(7) Inactive customers			
	3	(7) Inactive customers			
	2	(8) Lost customers			
	1	(8) Lost customers			

With RFM Analysis, there are 8 customer segments created and the marketing team needs to study the traits and design different tactics for each customer type.

| Tier 1: Most important	(1) Top customers	(2) Active customers
Tier 2: Potential for cross- and up-selling	(3) Emerging customers	(4) Unsteady customers
Tier 3: Pay attention	(5) Customers at risk	(6) Potential lost
Tier 4: Churned	(7) Inactive customers	(8) Lost customers

Part 3. Dashboard design and development

The dashboard was devised for the marketing team to develop marketing tactics for different customer types, it provided a macro view for comparing the traits of different customer types. Therefore, the default setting includes all customers in all countries. On the other hand, audiences can select the specific country(ies) flexibly by using the country filter.

Chart 1. No. of customer

No. of customers

Country	Top cus..	Active ..	Emergi..	Unstea..	Custom..	Potenti..	Inactiv..	Lost cu..	Grand T..
AUS	17	8	11	29	43	19	1	19	147
CA	28	15	27	54	75	32	1	34	266
GER	15	11	12	22	29	12		15	116
IND	27	9	21	23	31	19	3	14	147
ME				1				2	3
SA	37	24	36	75	87	39	3	36	337
SP	133	77	134	233	286	109	10	111	1,093
US	13	9	10	21	26	16	3	9	107
Grand Total	270	153	251	458	577	246	21	240	2,216

Chart 2. Customer Types
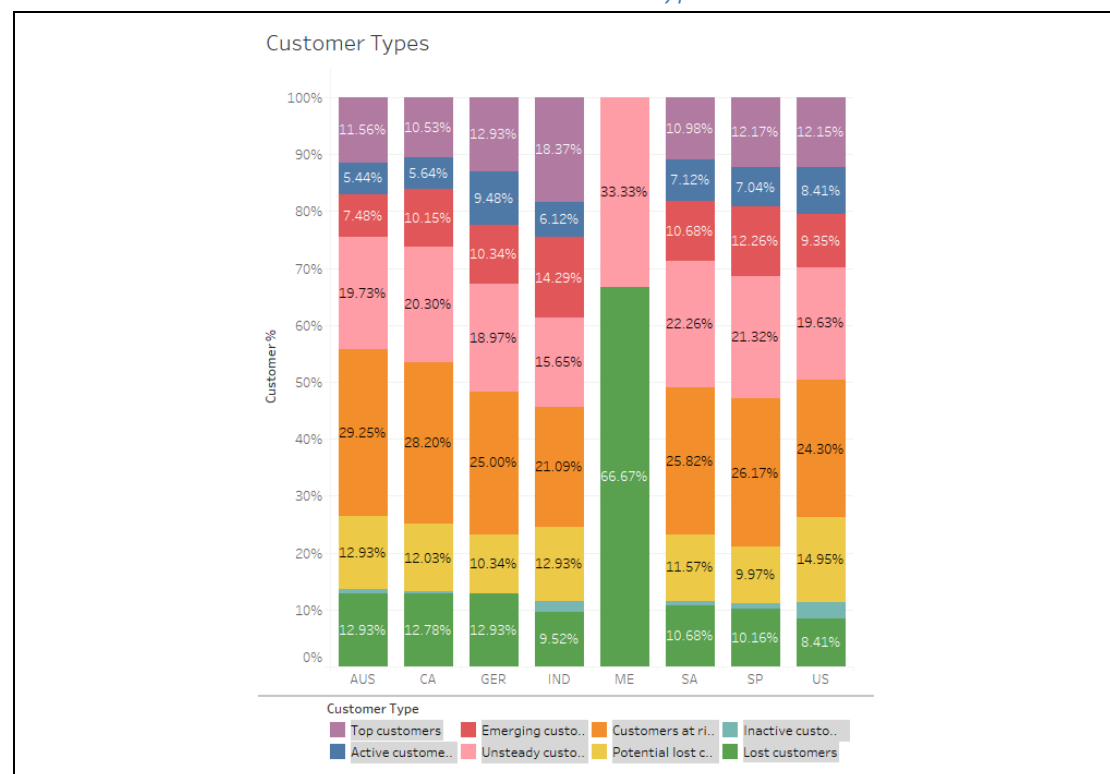
As the customers were categorized into 8 types, customer segmentation overview is needed.

In this dashboard, a 100% stacked bar chart is used for audiences to view the proportion of each colored customer type in every country intuitively. Take Montenegro as an example, there are only 2 customer types in the market. Meanwhile, the customers in other countries would be segmented into more types. This chart helps audiences to identify the segment difference between countries.

This is the main chart in the dashboard, its legend (customer type) and filter (Country) would also be associated with another 2 charts.

Chart 3. Total purchase by customer type

Total purchase by customer type

|	Top customers	Active customers	Emerging customers	Unsteady customers	Customers at risk	Potential lost customers	Inactive customers	Lost customers
Amt Chocolates	1,325	4,425	1,952	24,048	4,119	12,174	868	10,985
Amt Comm	3,965	9,361	4,666	32,295	11,321	18,672	1,507	15,640
Amt Liq	9,652	52,711	14,897	274,144	40,917	140,335	10,673	132,754
Amt Pes	1,675	5,517	2,544	32,890	7,120	16,634	1,711	15,314
Amt Vege	1,321	4,356	1,603	22,150	4,651	11,532	1,312	11,480
Amt Non Veg	5,858	21,517	8,388	154,071	25,962	73,070	10,980	70,217

The spending amount on 6 product types can help the team to identify the customer's preferences.

This simple text table displays the figures clearly and the color provided a quick look at the spending amount. The darker the color, the higher spending amount.

In this chart, the audience can understand the figures from 2 perspectives:

1. The purchase figures by customer type (Vertical view)
2. The sales figures of each product (Horizontal view)

If the audience needs to view the figures of the specific country (ies), they can also use the Country filter to select the needed region.

Chart 4. Successful lead conversions
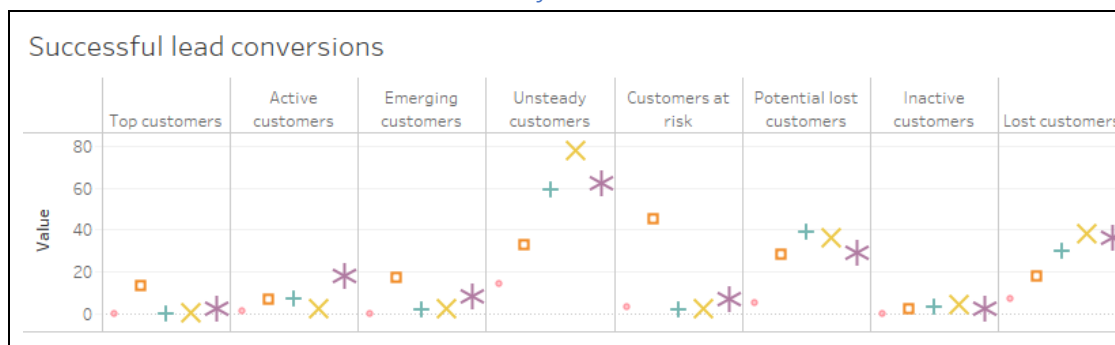
This chart was designed for audiences to compare the successful lead conversions and 5 sources were marked with unique shapes respectively.

In the dataset, there is a value called "Count_success" and it is the total number of successful lead conversions of 5 sources. Therefore, it is not included in the chart.
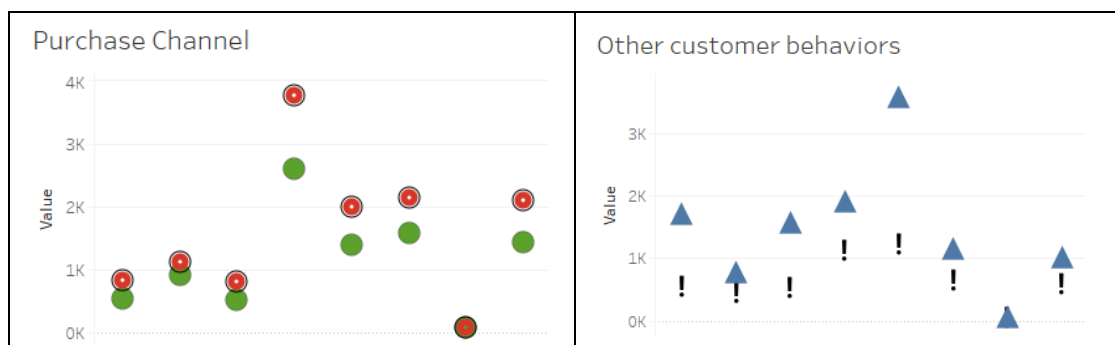
Chart 5. Purchase channel & Chart 5. Customer behaviour

Chart 4 visualized the numbers of online purchases and in-store purchases. It is useful to identify the preferred purchase channel.

Chart 5 visualized the numbers of website visits and deal purchases. It helps to spot the relationship between website visits and deal purchases. Besides, the number of deal purchases provided insight about price elasticity.

Since chart 4 and chart 5 share the same design, the audience can cross view the measures to identify the customer behavior of different customer type.

Part 4. Findings

A. Customer Segmentation

✧ Excludes Montenegro, the other 7 countries have over 10% of customers categorized as top customers.

✧ All countries got over 40% of customers categorized as tier 3 or tier 4 customers.

✧ India has the best market segment proportion with the highest percentage of top customers and the least % of lost customers.

B. Marketing 4Ps

Product

✧ Alcoholic beverage is the best-selling product type and contributes half of sales revenue.

✧ Customers spend less amount on vegetables and Chocolate than other product types, the potential reason can be unit price and buying frequency.

Promotion

✧ Customers at risk have the lowest successful lead conversions ratio than other types.

✧ Brochure advertisement is the less successful advertisement method.

Place

✧ In-store purchase is more than online purchase.

✧ There is no strong correlation between visiting the website and online purchases.

Price

✧ Tier 1 and 2 customers are more price-sensitive, their ratio of last purchase with discount is higher.

Part 5. Conclusion

By studying the customer behavior traits and purchase history of different customers in different countries, the marketing team becomes much easier to tailor promotions at the global or specific country scope.

The 2Market marketing can focus on retaining existing customers by carrying out a membership program, there are major customers belonging to non-loyal customers and their switching costs to purchase in other shops are low.