

Global Bike Inc (GBI) Company Business Intelligence System Report

By

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1.0 Introduction

1.1 Global Bike Inc (GBI) Company

John Davis is a globe biker and winner in hill riding. He founded a business dedicated to the manufacture of off-road bicycles in the United States. German engineer Peter Weiss not just to rides race bicycles but also develops bicycle designs. He established a firm dedicated to the production of lightweight riding bicycle designs. In 2000, John and Peter connected and combined their two businesses to become GBI. GBI is a top-class bicycle business catering the expert and “prosumer” riders for travel and off-road sports. GBI's customers seek the greatest standard of quality, durability and endurance from their bicycles and equipment. GBI's business is founded on creativity, security, dependability, and competitiveness. Sticking to this key philosophy has enabled the organization to continue to compete in an atmosphere increasingly threatened by rival businesses and knock-offs. GBI does not distribute to individual customers. Rather than that, it depends on affluent consumers (Epistemy Press, n.d). Item creation is the main crucial part of GBI's previous and continued success. As a result, they jumped right into their own steps and created outstanding bicycles capable of outlasting and outperforming the race. Global Bike Incorporated was created from these early roots and strives to provide revolutionary high-quality bicycles (Silo.Tips, 2020). Other than bicycles, GBI company also sells accessories such as shirts, knee pads, helmets, etc. Figure 1.1 below shows the product from GBI company.

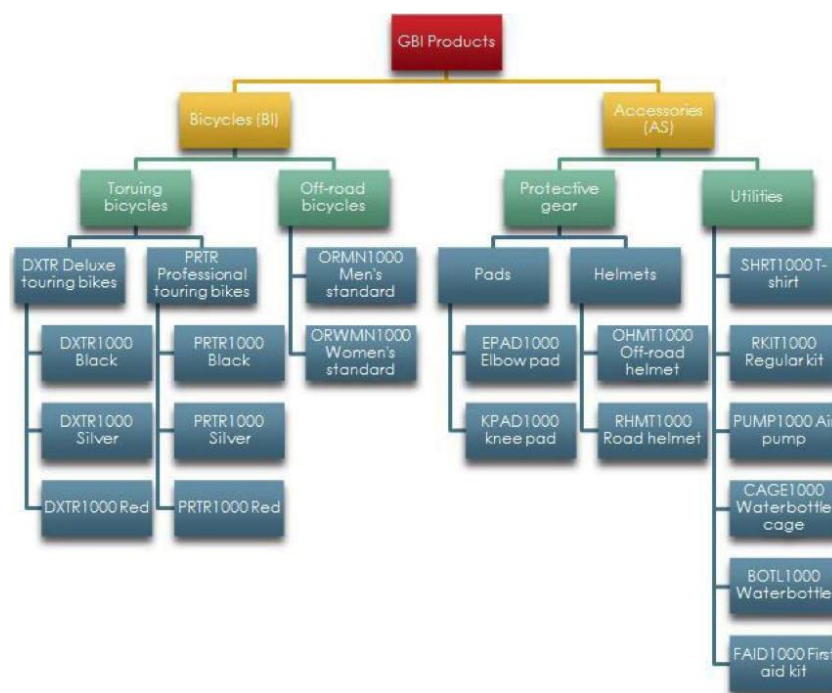


Figure 1.1 Products in GBI company

1.2 Descriptive Analysis Summary

The following session is a descriptive analysis summary for seven and half years of business data of GBI company which is from the year 2005 until 2013.



Figure 1.1 Total revenue, profit and sales of GBI company

Based on figure 1.1 above, shows the total revenue, profit and sales of the GBI company. The figure shows that the company has 207,708,055 USD profit, 394,136,330 USD revenue and 309,865 sales throughout the year from 2005 until 2013.

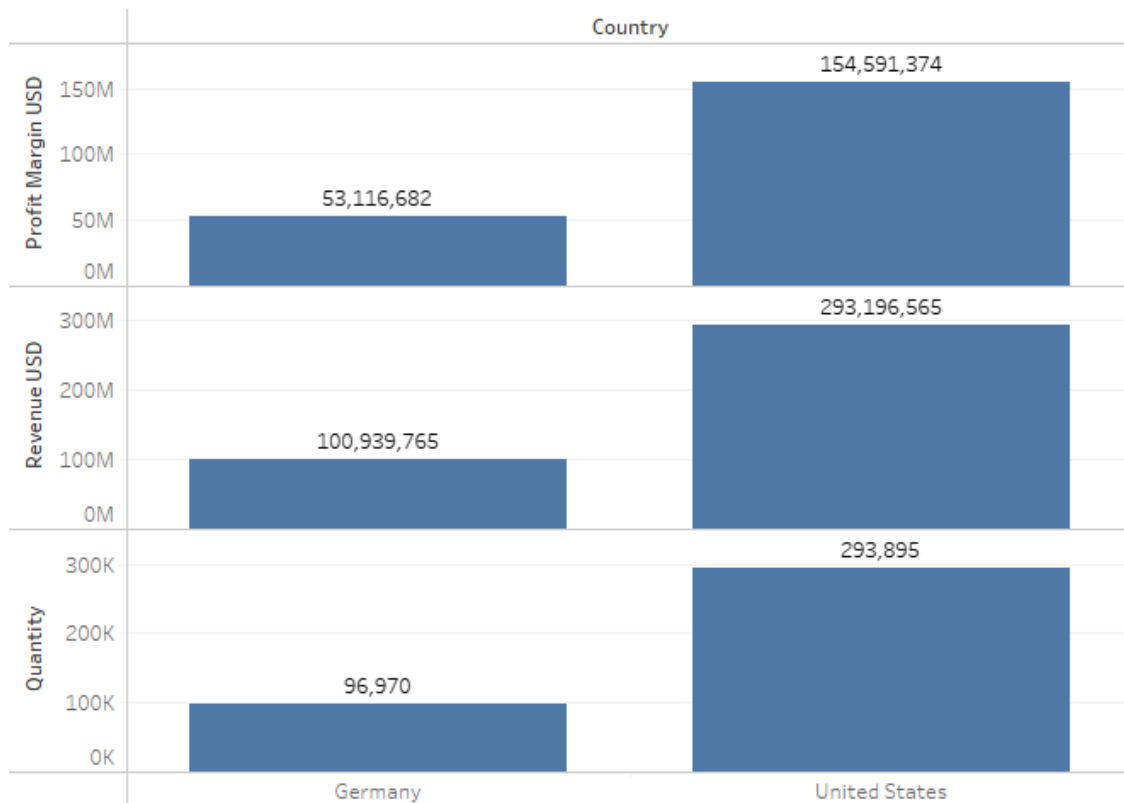


Figure 1.2: Profit, revenue and sales in Germany and United States

The main market of GBI company is Germany and United States. Based on the figure 1.2 above, it can be seen that the total profit margin, revenue and quantity of sales in the United States is almost triple of the German company over the 7 ½ years. The profit margin of the United State is 154,591,374 USD while the profit margin of Germany is 53,116,682 USD; the revenue of the United States is 293,196,565 USD while the revenue of Germany is 100,939,765 USD; the sales quantity in the United States is 293,895 while the sales quantity in Germany is 96,970.

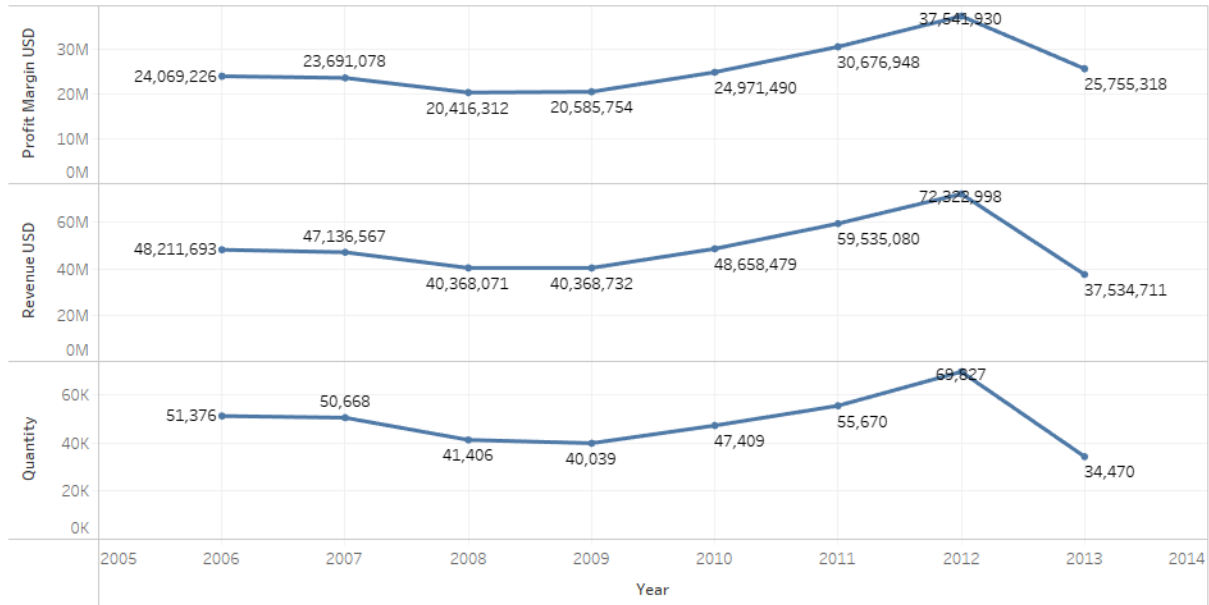


Figure 1.3 Total profit, revenue, and sales of GBI company from 2005 to 2013

The figure 1.3 above shows the total sales of GBI company from 2005 to 2013. It shows that the sales of GBI company are gradually uptrend from the year 2008 and reaches the highest in 2012 which is around 37,541,930 USD profit margin, 72,322,998 USD revenue, and 69,827 sales quantities.

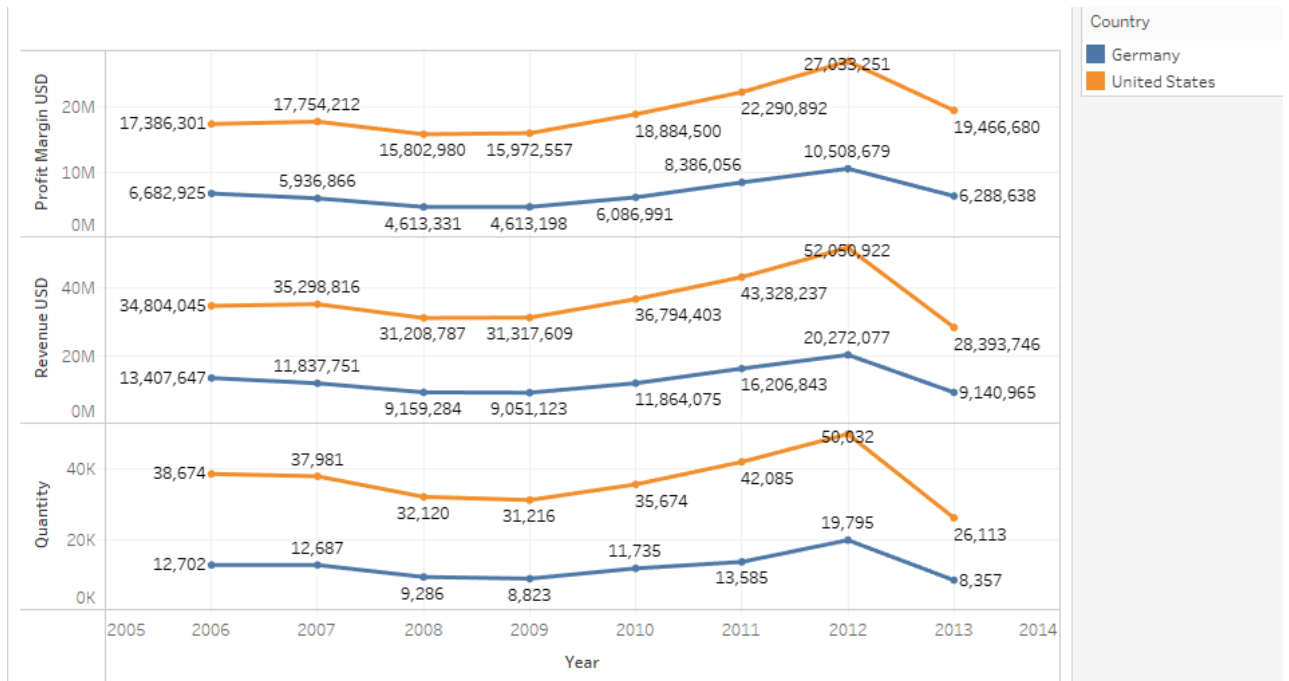


Figure 1.4: Sales comparison between Germany and United States

Based on figure 1.4 above, shows that the sales of the United State are almost triple the of Germany Sales in terms of profit, revenue and quantity of sales over the years. Both countries

have had the same trend of sales over the years and achieved the highest sales in the year 2012 which is 27,033,251 USD profit, 52,050,922 USD revenue and 50,032 quantity of sales in the United States; 10,508,679 USD profit, 20,272,077 USD revenue and 19,795 sales in Germany. However, it is obviously shown that the surge of uptrend in Germany is not as significant as the United States.

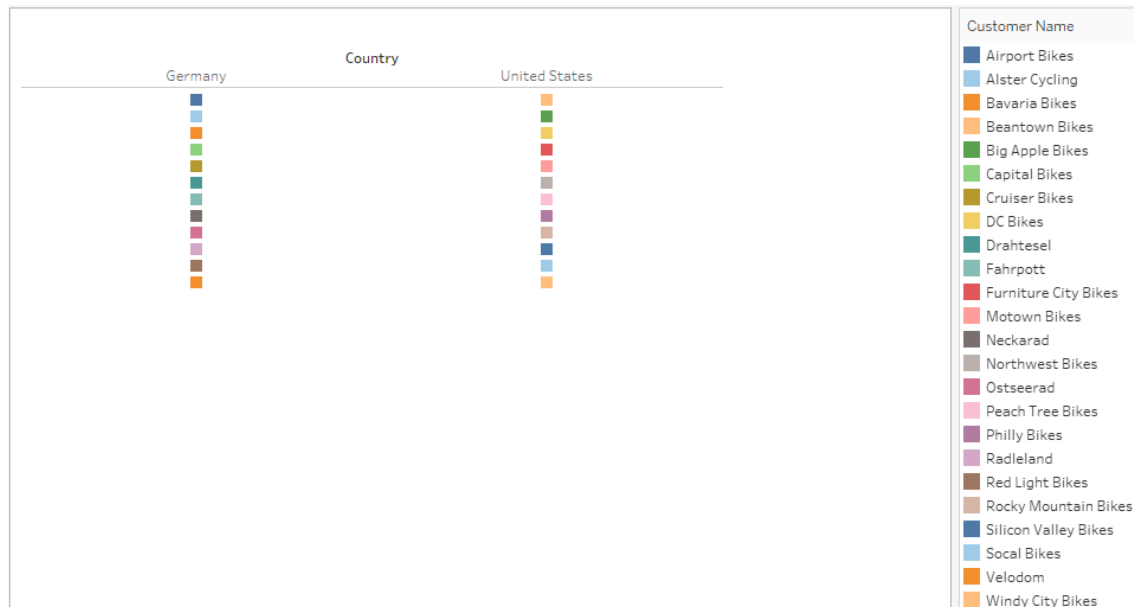


Figure 1.5: Customers' names in Germany and United States

Figure 1.5 above shows the total customers' names in Germany and United States across the 7 ½ years. It shows that the number of customers in both Germany and the United States is the same, which is 12 customers in each country.



Figure 1.6 Customers in 2013 for Germany and United States

Based on figure 1.6, shows that the number of customers in Germany drop to 11 customers while the number of customers in the United States drop to only 9 customers in 2013.

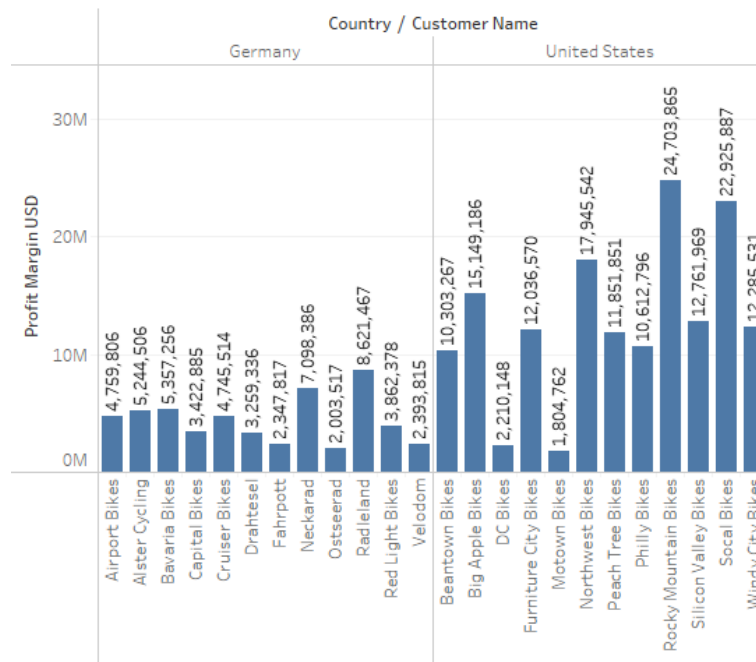


Figure 1.7: Total profit margin from different customers

Based on figure 1.7, shows that the customer that has the highest profit is Radleland which has 8,621,467 USD profit while the least is from Ostseerad which is 2,003,517 USD in Germany. On the other hand, in the United States, most of the business profit comes from Rocky Mountain Bikes which is 24,703,865 USD while the least is from DC Bikes which is only 2,210,148 USD.

Country	Customer Name	Year							
		2006	2007	2008	2009	2010	2011	2012	2013
Germany	Bavaria Bikes	1,174	1,111	802	923	1,501	977	2,024	888
	Capital Bikes	1,072	838	766	682	967	1,074	1,215	834
	Cruiser Bikes	800	934	715	730	972	962	1,634	963
	Drahtesel	856	617	353	460	777	1,251	1,572	492
	Fahrpott	893	517	476	255	515	764	1,040	299
	Neckarad	1,535	1,370	1,303	1,561	1,368	1,832	2,189	1,496
	Ostseerad	734	485	547	394	400	454	854	327
	Radleland	2,134	2,228	1,446	1,209	2,076	1,889	2,528	1,379
	Red Light Bikes	693	883	462	443	496	1,647	2,257	
United States	Velodom	566	579	559	691	577	471	796	265
	Beantown Bikes	2,646	2,367	2,431	2,791	2,970	3,216	2,673	1,657
	Big Apple Bikes	2,763	3,094	2,757	3,456	3,928	4,700	5,438	2,164
	DC Bikes	1,888	1,195	1,119					
	Furniture City Bikes	3,149	2,661	1,920	2,686	3,173	3,364	3,989	1,950
	Motown Bikes	1,469	1,146	993					
	Northwest Bikes	4,200	3,749	3,810	2,190	2,840	5,174	7,382	4,226
	Peach Tree Bikes	3,320	2,529	1,842	2,228	2,866	3,793	3,658	2,256
	Philly Bikes	2,574	2,277	2,085	2,458	3,274	2,785	3,913	2,195
	Rocky Mountain Bikes	5,233	5,912	5,743	5,035	5,451	5,385	7,381	4,885
	Silicon Valley Bikes	4,414	4,799	2,748	3,364	3,063	3,356	4,217	
	Socal Bikes	4,561	5,401	4,899	4,336	4,783	6,962	7,667	4,448
	Windy City Bikes	2,457	2,851	1,773	2,672	3,326	3,350	3,714	2,332

Figure 1.8: Customers' profile along the 7 ½ years

Based on figure 1.8, shows that the customer churn in Germany is Red Light Bikes which churn in the year 2013 while the customers churn in the United States are DC Bikes, Motown Bikes and Silicon Valley Bikes. DC Bikes and Motown Bikes are churning from the year of 2009 while the Silicon Valley Bikes and Red Light Bikes are churning since the year 2013.

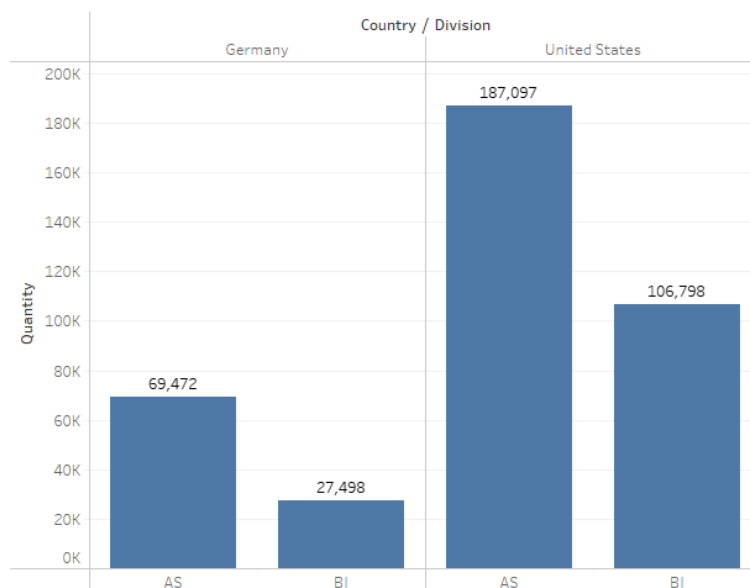


Figure 1.9: Sales of Accessories and Bicycles in Germany and the United States

Based on figure 1.9 above, shows that the sales of accessories are higher than the sales of bicycles in both Germany and the United States. In Germany, the sales of accessories are 69,472 while the sales of bicycles are 27,498. In the United States, the sales of accessories are 187,097 while the sales of bicycles are 106,798.

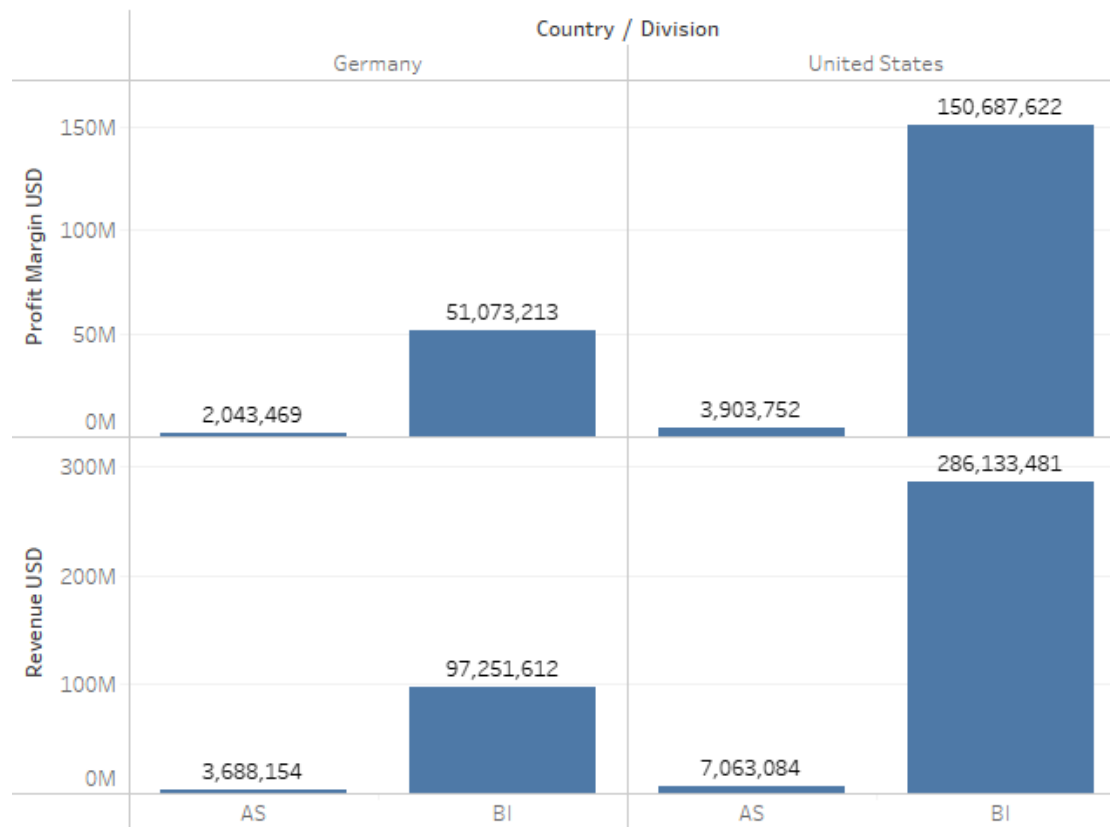


Figure 1.10: Profit and revenue of Accessories and Bicycles in Germany and the United States

Although the sales of accessories are higher than the sales of bicycles in both countries (Figure 1.9). However, based on figure 1.10, shows that the profit and revenue are far higher in the sales of bicycles when compared to accessories. This means that the majority income of GBI company come from bicycle sales.

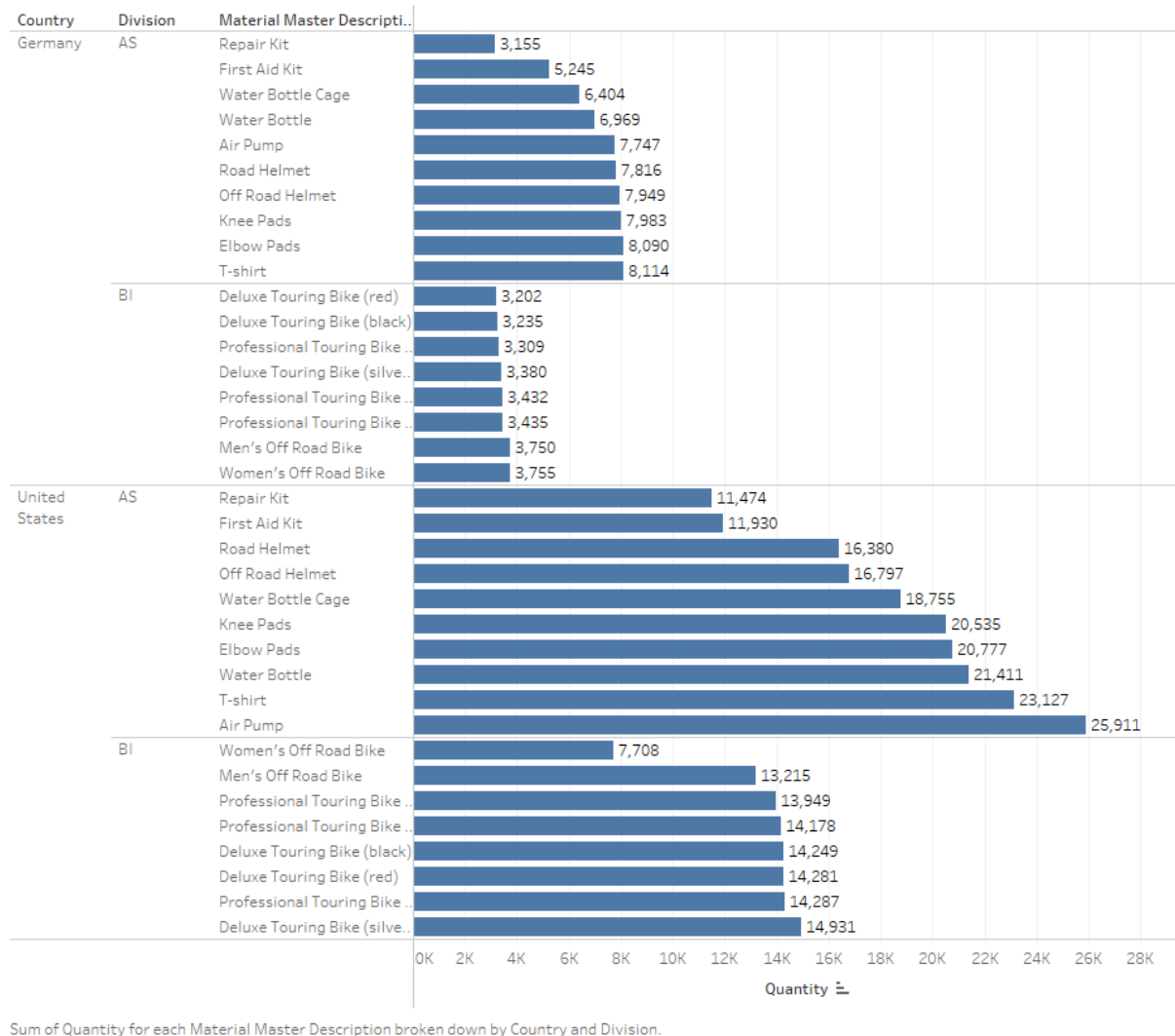


Figure 1.11: Sales of accessories and bicycles types

Based on figure 1.11, in terms of accessories sales in Germany, T-shirts (8114) are the highest sales while repair kit (3155) is the lowest sales. In terms of bicycles sales in Germany, Women off-road bike is the highest sales (3755) while deluxe touring bike in red colour is the lowest sales (3202). On the other hand, in terms of accessories sales in the United States, the air pump is the highest sales (25,911) while the repair kit is the lowest sales (11,474). In terms of bicycles sale in the United States, the deluxe touring bike in silver color is the highest sales (14,931) while the women's off road bike is the lowest sales (7,708).

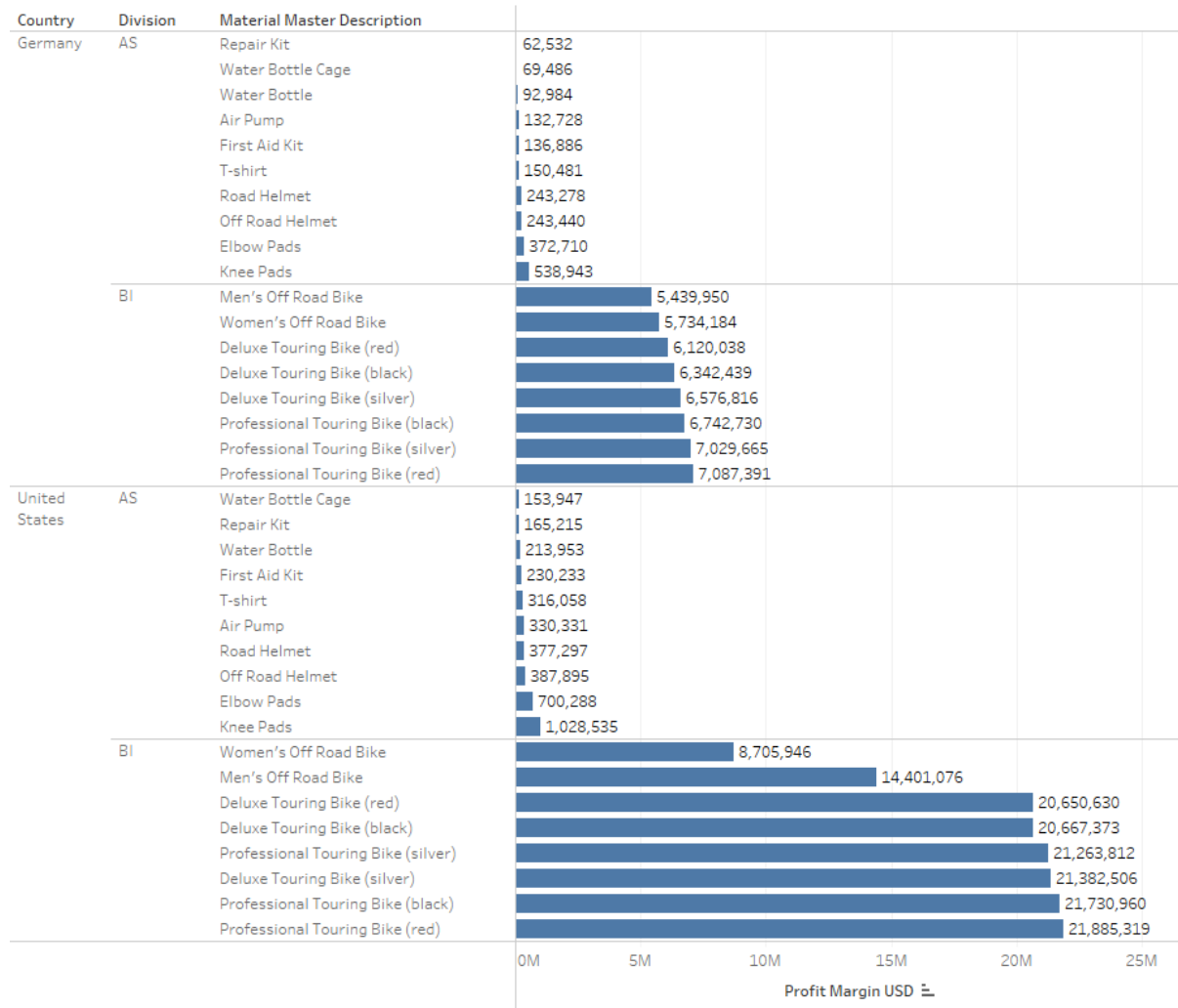


Figure 1.12: Profits from each accessory and bicycle type

Based on figure 1.12, in terms of accessories sales profit in Germany, knee pads (538,943 USD) are the highest profit while repair kit (62,532 USD) is the lowest profit. In terms of bicycles sales profit in Germany, professional touring bike in red color is the highest profit (7,087,391 USD) while men's off-road bike is the lowest profits (5,439,950 USD). On the other hand, in terms of accessories sales profit in the United States, the knee pads are the highest profit (1,028,535 USD) while the water bottle cage is the lowest sales (153,947 USD). In terms of bicycles sale profit in the United States, the professional touring bike in red color is the highest profits (21,885,319 USD) while the women's off-road bike is the lowest profits (8,705,946 USD).

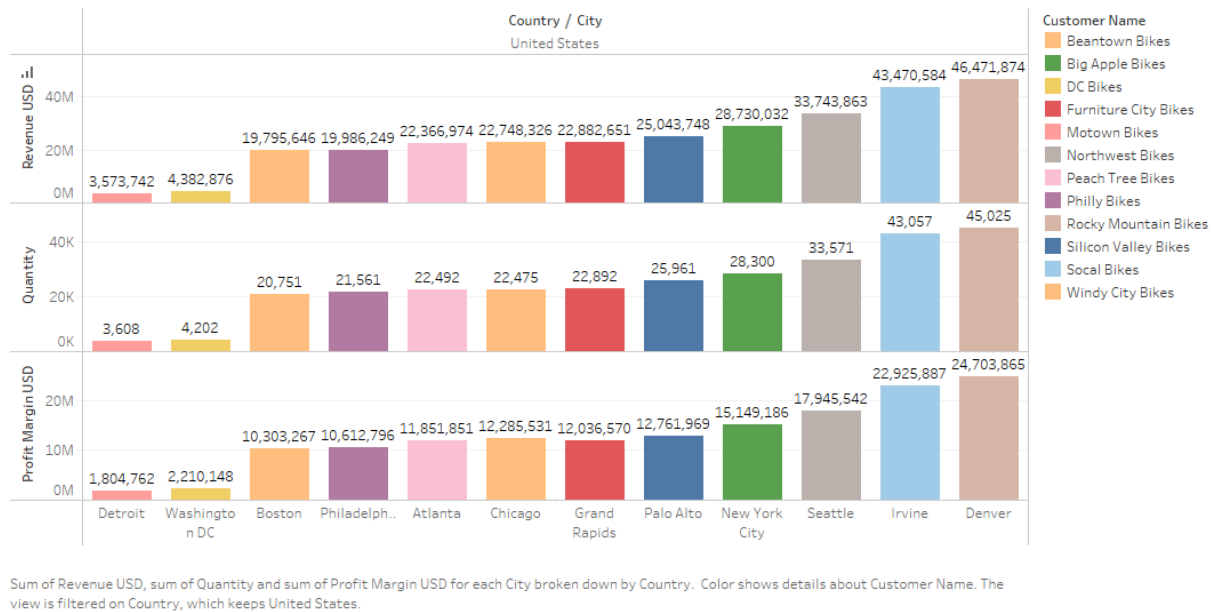


Figure 1.13: Revenue, profit and sales from cities in the United States

Based on the figure above, shows the city that has the highest revenue, profit and sales is Denver while the lowest revenue, profit and sales city is Detroit.

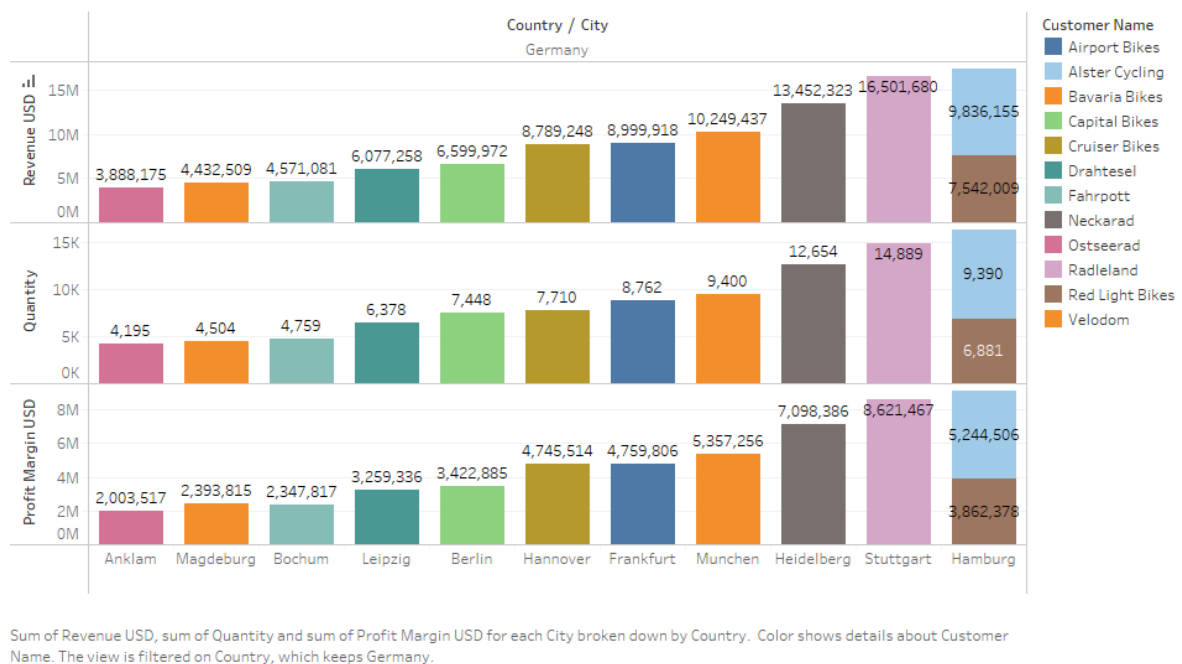


Figure 1.14: Revenue, profit and sales from cities in Germany

Based on the figure above, shows the city that has the highest revenue, profit and sales is Hamburg while the lowest revenue, profit and sales city is Anklam.

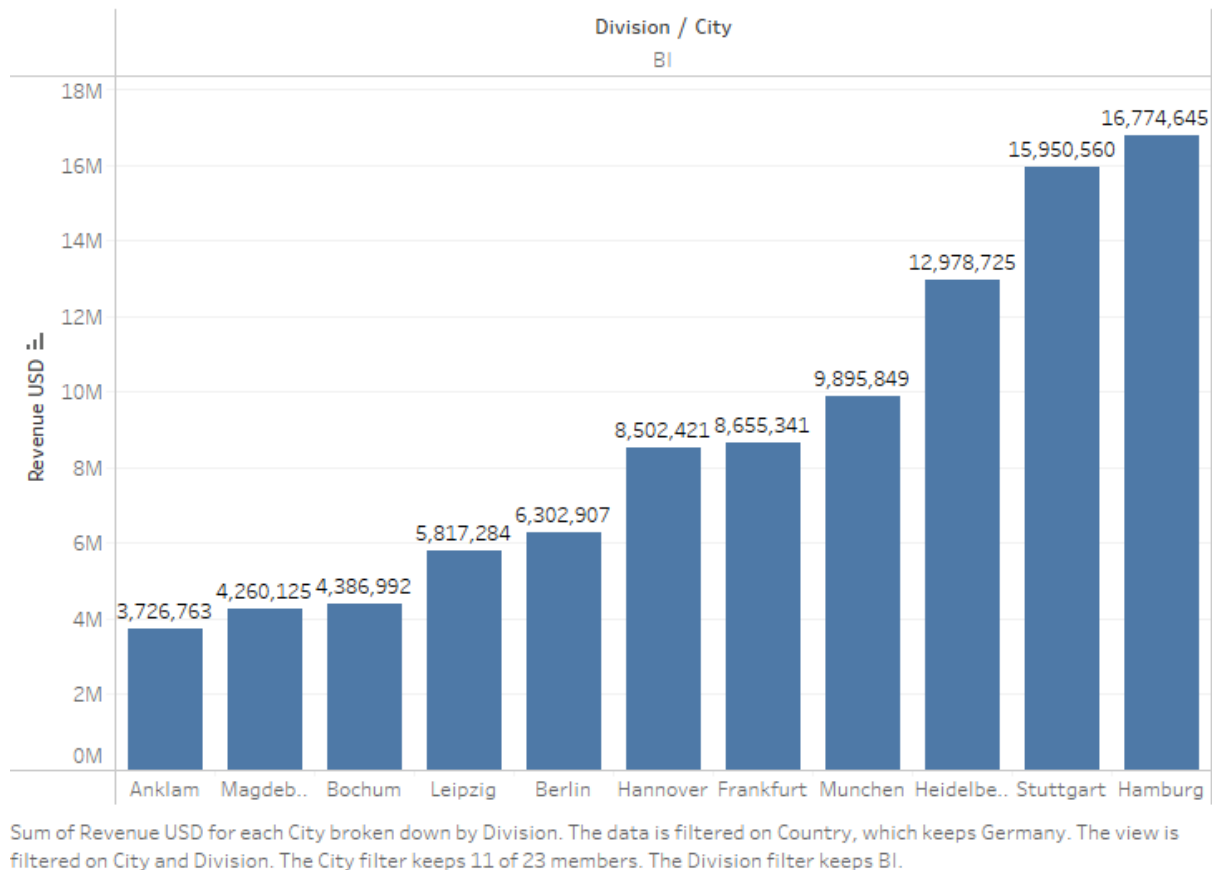


Figure 1.15 Revenue for the bicycles in Germany's cities

Based on the figure above, shows the city that has the highest bicycles revenue is Hamburg while the lowest revenue for bicycles sales is Anklam.

1.3 Problem Statement

Figure 1.14 shows that the revenue, profit, and the number of sales of Hamburg and Stuttgart are almost the same. However, the population of Hamburg has 3 times larger population than Stuttgart. From the year of 2005 until 2013, the population of Stuttgart is around 594,000 to 617,000, while the population of Hamburg remains at around 1.73 million throughout the 7 ½ years (macrotrends, n.d). In addition, only Hamburg has 2 customers which are Alster Cycling and Red Light Bikes, when compared to others which have only 1 customer. In this context, the revenue, profit, and sales of Hamburg should be far higher than Stuttgart's, however, the business data does not show this scenario. The profit that gains from Stuttgart is 8,621,467 USD, if the profit of Hamburg should triple the profit of Stuttgart, then the estimated profit loss in Hamburg is around 17,242,934 USD.

1.4 Project Question

1. How to identify the possible problem in the organization that causes the inequality between the bicycle sales of Hamburg with population.
2. What are the possible reasons other than organizational problems that cause bicycles sales in Hamburg unequal with the population?
3. How to improve the bicycle sales in Hamburg?

1.5 Aim and Objective

The main aim of this project is to improve the revenue of bicycles sales of GBI company in Hamburg.

Objective:

1. To identify the possible problem in the organization that causes inequality between the bicycles sales in Hamburg and with population.
2. To investigate the possible reasons other than the organizational problem that causes bicycles sales in Hamburg unequal with population.
- 3 To provide business strategies that can potentially improve bicycle sales in Hamburg.

2.0 Data Preparation

2.1 Organization memory

Organizational memory refers to the experience that has been acquired over time and is stored in the business for decision making (Bhandary & Maslach, 2018). Online Transaction Processing (OLTP) is a form of data computing that comprises conducting a volume of transactions continuously. Typically, these transactions have been correlated with commercial or financial activity. They are collected and protected in such a way that a company can retrieve the content at all times for reporting purposes. OLTP permits the execution of enormous numbers of data processing in real-time by a huge number of participants, generally online (Lutkevich, 2021; IBM, 2020). In this project, Tableau is the big data tool for visualizing and analyzing data in an organization.

In the GBI company, the GBI data is stored in the enterprise resource planning (ERP) server at QUT Australia. ERP (Enterprise Resource Planning) software is a type of commercial application that aids in the handling of existing sources. A system devoted to running ERP programs and data is known as an ERP server. It has been used to connect diverse systems and simplify GBI company system management. ERP can connect many aspects of GBI company's operations, including production, supply chain, human resource management, data analysis, and marketing. An ERP server links current infrastructure and displays them across the GBI organization on desktops, computers, and portable devices. By combining the systems of GBI company into a uniform, real-time dashboard, an ERP server enhances performance and effectiveness. All users can interact with company information in real-time. This method drastically cuts down on system support and training. An ERP server brings together capabilities for GBI company management control and also aids in strategic and tactical decisions (Pickard, n.d.).

2.2 Data integration

Data integration is the practice of integrating data from several sources altogether to present users with a single perspective. Data integration is based on the idea of making data more widely accessible, as well as simpler to ingest and handle by applications and users. Without broad modifications to current systems or data formats, data integration executed properly can decrease IT expenses, recapitalize, increase the quality of the data, and stimulate creativity. GBI company collects an increasing amount of data in various forms from a growing amount of information resources. Workers, clients, and consumers need the means to extract insights from data in organizations. This means GBI company should collect essential data from many sources in order to support monitoring and business activities (TIBC, n.d.). In GBI company, the ERP System has the data integration capability by default. GBI company used this ERP integration process to mix, read, and analyze data across its integration platform and the other programs with which it connects. Usually, they store only structured data from different sources in an ERP system. In this project, the GBI company data is integrated as structured data in the Microsoft Excel (.xlsx) format.

2.3 Extract, Transform, and Load (ETL)

ETL is a data integration procedure that integrates data from various sources into a uniform, a reliable data repository that can then be fed into a database platform or other destination application (IBM, 2020). The ETL process in this project is to extract the data from organization memory, transform the data into a suitable type for analysis, and load it into analytical tools which is the Tableau application. The ETL steps are explained and shown in the following sessions.

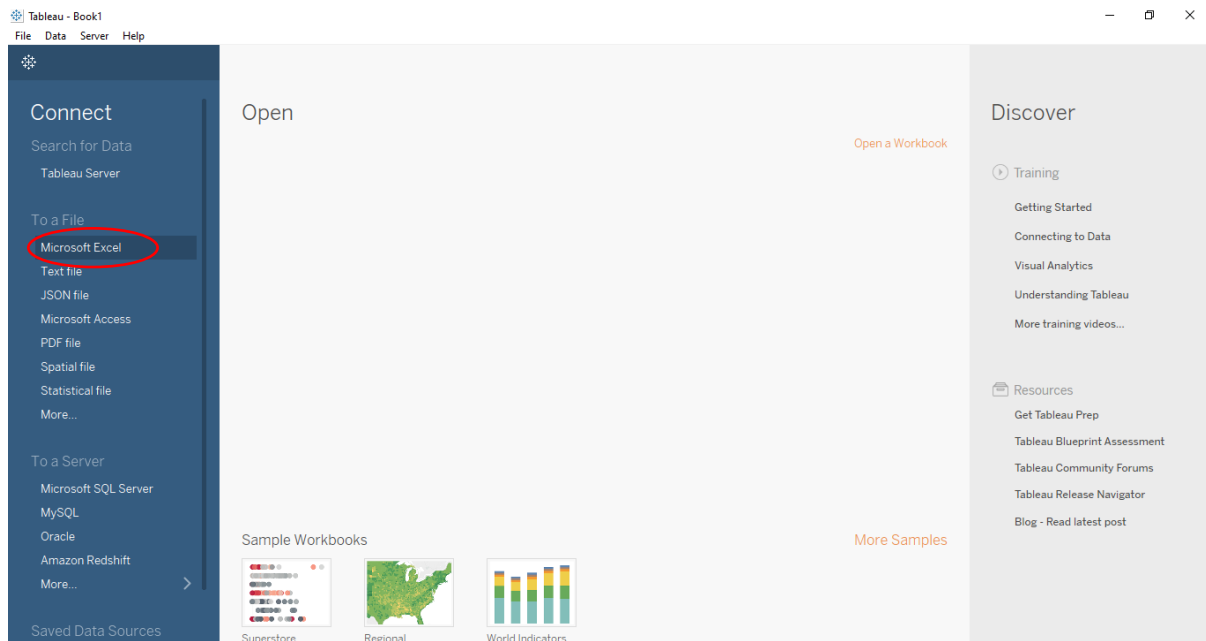


Figure 2.1 Extract the excel file

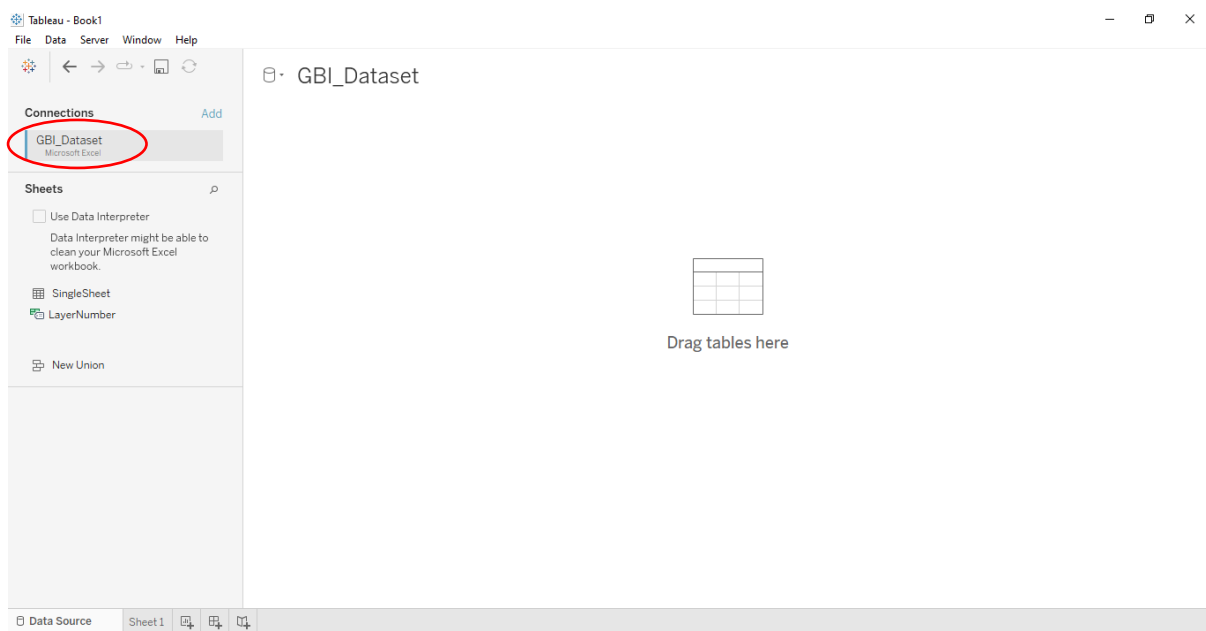


Figure 2.2: The excel file is successfully uploaded

First, the organization data is extracted by uploading the GBI company data Microsoft excel file by clicking the “Microsoft Excel” that is shown in figure 2.1. Then, figure 2.2 shows that the extraction process is successful as the excel file is already in the Tableau software.

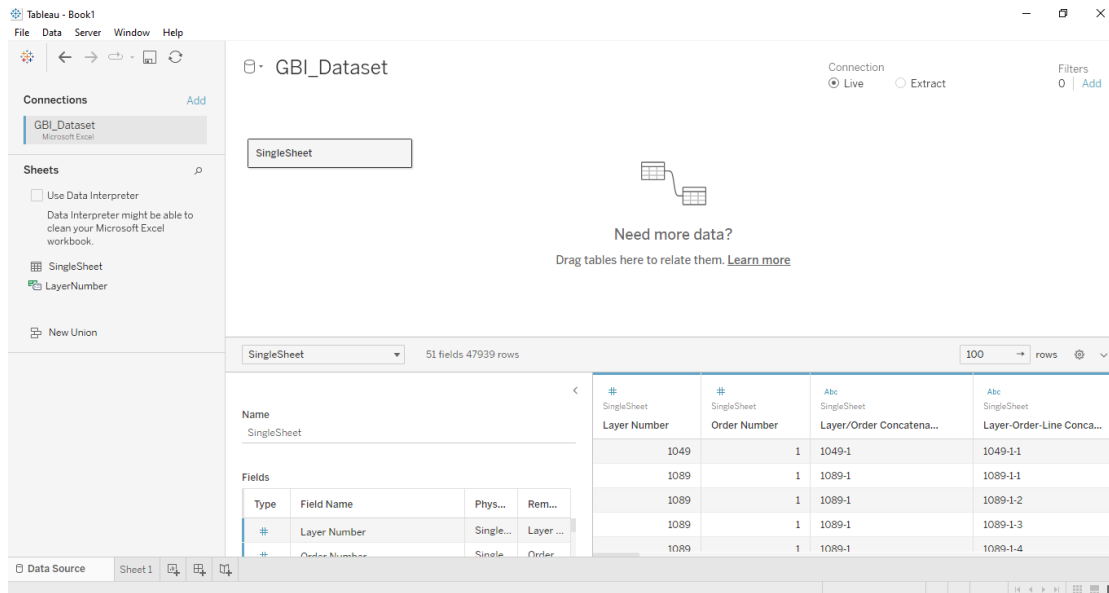


Figure 2.3: Transform the data

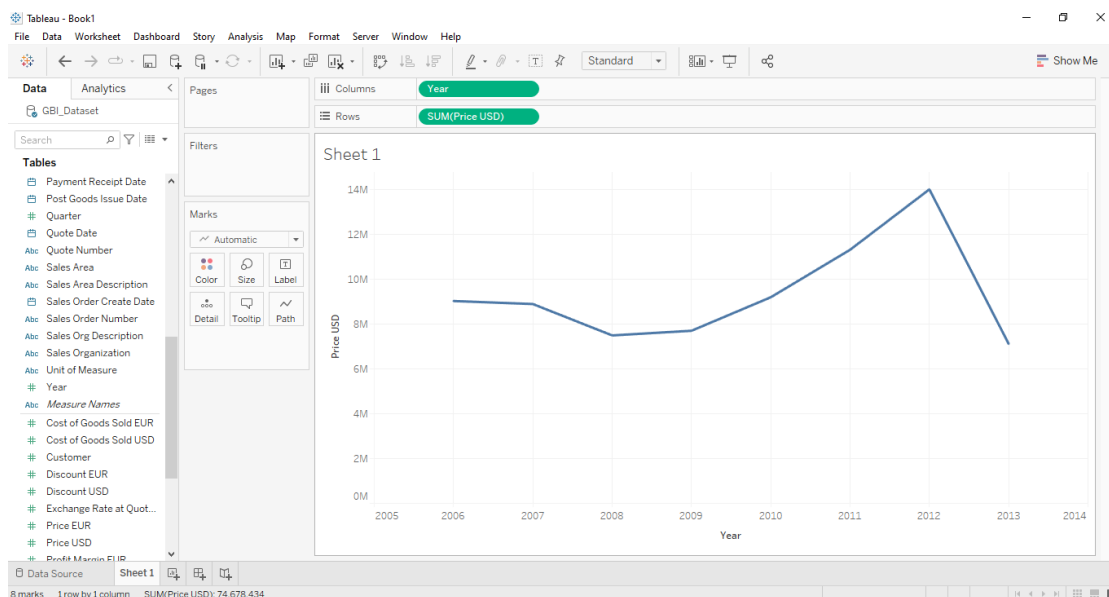


Figure 2.4: Drag and drop function

Last but not least, transform and load the data by dragging the single sheet into Tableau and using the drag and drop function to visualize the company data as shown in figure 2.3 and figure 2.4.

3.0 Diagnostic Analysis

3.1 Data Analysis with Organization data

Figure 3.1 until figure 3.3 below show the overall sale, revenue and price per bicycle based on bicycles types in Hamburg.

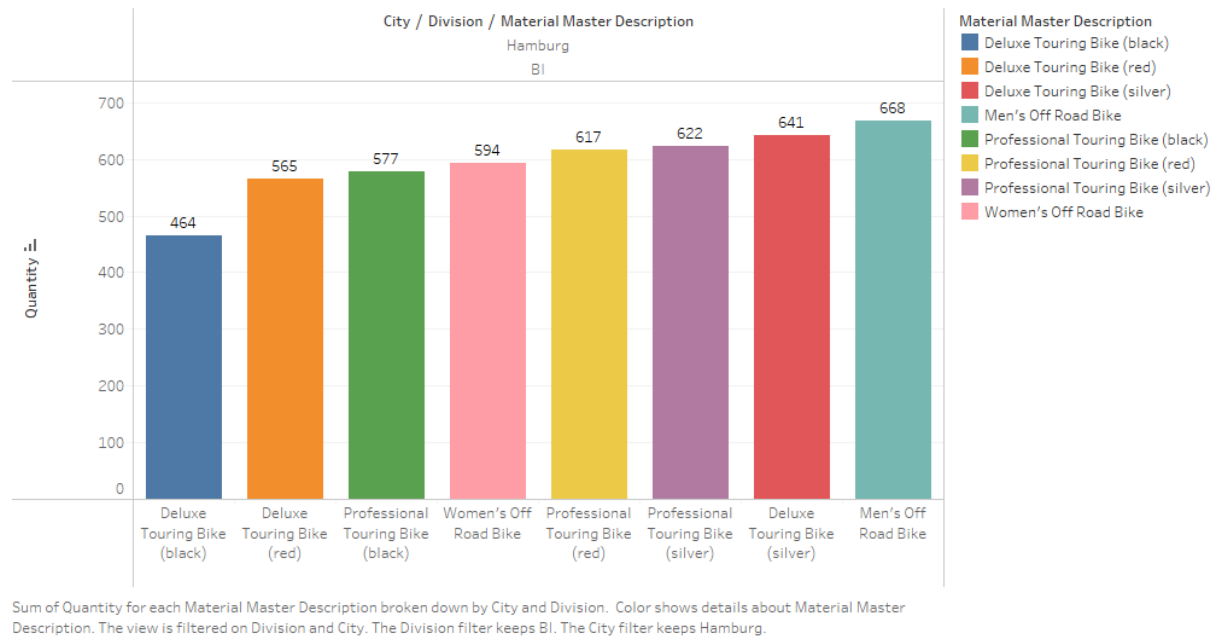
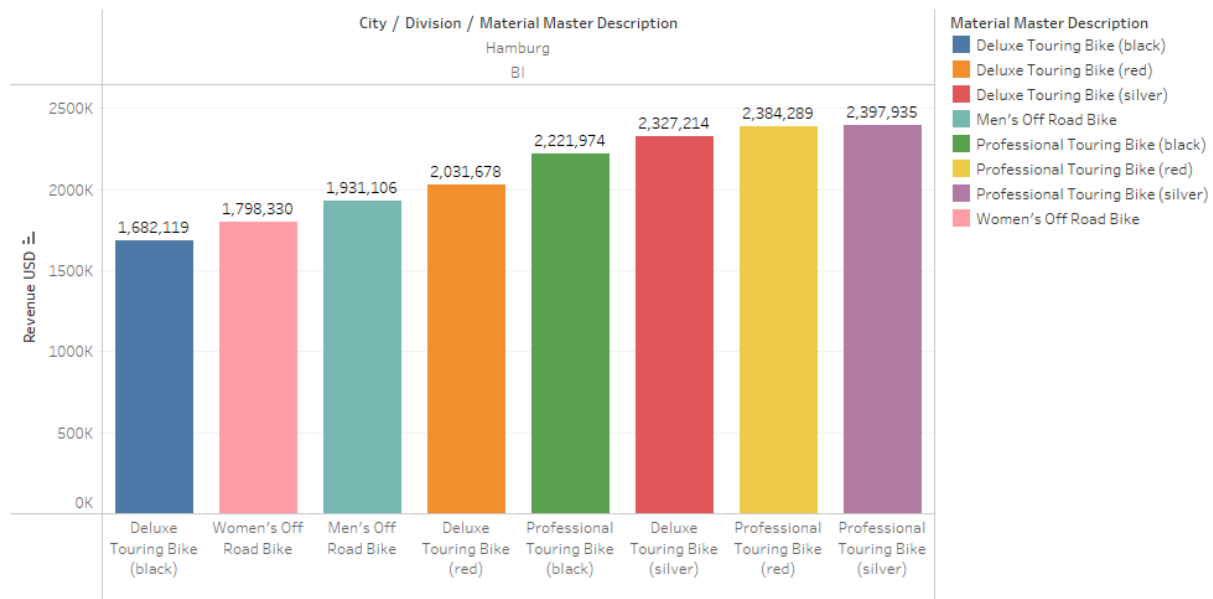


Figure 3.1: Sale of different bicycle types in Hamburg

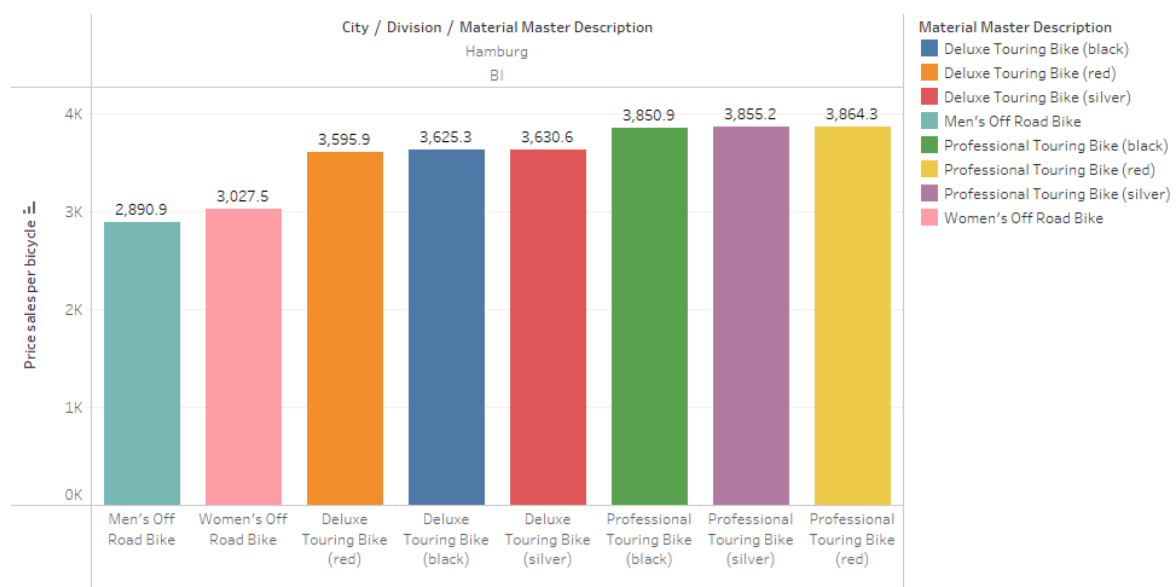
Based on figure 3.1, shows that the men's off-road bike is the highest sales bike (668) while the deluxe touring bike in the black colour is the lowest sales bike (464). This figure shows that the sales of the bikes might have a relationship with the colour of the bikes. This is because the same types of bikes but different colours can have significantly different sales results. For example, the black colour deluxe touring bike and black colour professional touring bike ranked the lowest sales and the third-lowest sales. However, the same type of bike but with different colours which is the deluxe touring bike and professional touring bike with silver colour ranked top 2 and 3 sales in Hamburg. Here, it brings information that individual customers in Hamburg might prefer silver colour bikes rather than black colour bikes.



Sum of Revenue USD for each Material Master Description broken down by City and Division. Color shows details about Material Master Description. The view is filtered on Division and City. The Division filter keeps BI. The City filter keeps Hamburg.

Figure 3.2: Revenue from different bicycle types in Hamburg

Based on figure 3.2, shows that the deluxe touring bike in black colour has the lowest revenue which is 1,682,119 USD while the professional touring bike in silver color has the highest profit which is 2,397,935 USD. However, the men's off-road bike which has the highest sales shown in figure 3.1 shows a low revenue which is only 1,931,106 USD. This might can be explained by the price per bicycle in figure 3.3 below.



Price sales per bicycle for each Material Master Description broken down by City and Division. Color shows details about Material Master Description. The view is filtered on Division and City. The Division filter keeps BI. The City filter keeps Hamburg.

Figure 3.3: Price of each bicycle type

The figure above is generated after calculation by dividing the revenue of bicycles by the sales quantity of bicycles. Based on figure 3.3, shows that professional touring bike types are more expensive than other types of bicycles, follow by deluxe touring bikes and road bikes. The price of men's off-road bikes is the cheapest which is sold at 2890.9 USD per bicycle to Hamburg customers. This brings out information that the high sales of men's off-road bikes in Hamburg might be due to their cheap price. Although women off road bikes have a slightly higher price than men's off-road bikes, it is still considered cheaper bicycle when compared to the deluxe and professional touring bike. However, the sales quantity of women off road bikes shows significantly lower sales (594 sales) than the men's off-road bikes (668 sales) in figure 3.1.

In addition, the figure shows that different colour of the bike has different price. In the professional touring bike, the red colour bike is sold at a higher price which is 3864.3 USD per bicycle, follow by silver colour (3855.2 USD) and black colour (3850.9 USD). Although the black colour bike is sold at the cheapest price under the professional touring bike, but figure 3.1 shows the sales quantity of this colour still ranked the lowest among professional touring bike (577 sales) while the silver colour professional touring bike with higher price ranked at top 3 sales (622 sales). The red colour professional touring bike is the most expensive bikes (3864.3 USD), but its sales quantity (617 sales) still better than the black colour professional touring bike.

On the other hand, among deluxe touring bikes, the sales price per bicycle under the deluxe touring bike in silver colour is the most expensive (3630.6 USD), followed by black colour (3625.3 USD) and red colour (3595.9 USD). However, although the silver colour bike is the most expensive among deluxe touring bikes, the sales quantity of this bike in silver colour still outperformed others by ranking in the top 2 sales (641 sales). Although the black colour deluxe touring bikes have a cheaper price sale, its sales quantity still ranked the lowest which is only 464 sales based on figure 3.1. Although the red colour deluxe touring bikes has the lowest prices per bicycle (3595.9 USD), but the sales quantity still ranked the second-lowest (565 sales) after the black colour bikes.

The above analysis indicates the colours of the bike might affect the sales of the professional and deluxe touring bike. However, the above assumptions are based on the total sales of 2 customers in Hamburg, this point of view still needs to be further investigated because there are many other factors that can affect sales, such as the discount that GBI

company offer to the black colour bikes might be lower than others cause the customer do not want to buy the black colour bicycle. So, this section is only for a sales behavior overview in Hamburg. Further and more detailed analyses need to be carried out based on each customer in Hamburg since there are still consist many possible factors that can affect the buying behavior of the customer.

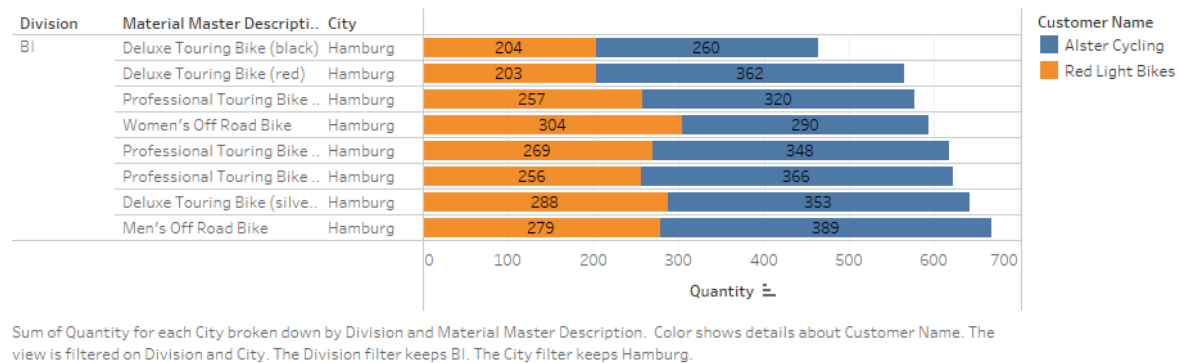


Figure 3.5 Total quantity of bicycles sales in Hamburg

After an overview of the overall feature in the above session, with the combination of 2 customers, the deluxe touring bike in black colour has the lowest sales while the men's off-road bike has the highest sales in Hamburg. In the following session, started to specifically view on behavior of each customer in Hamburg.

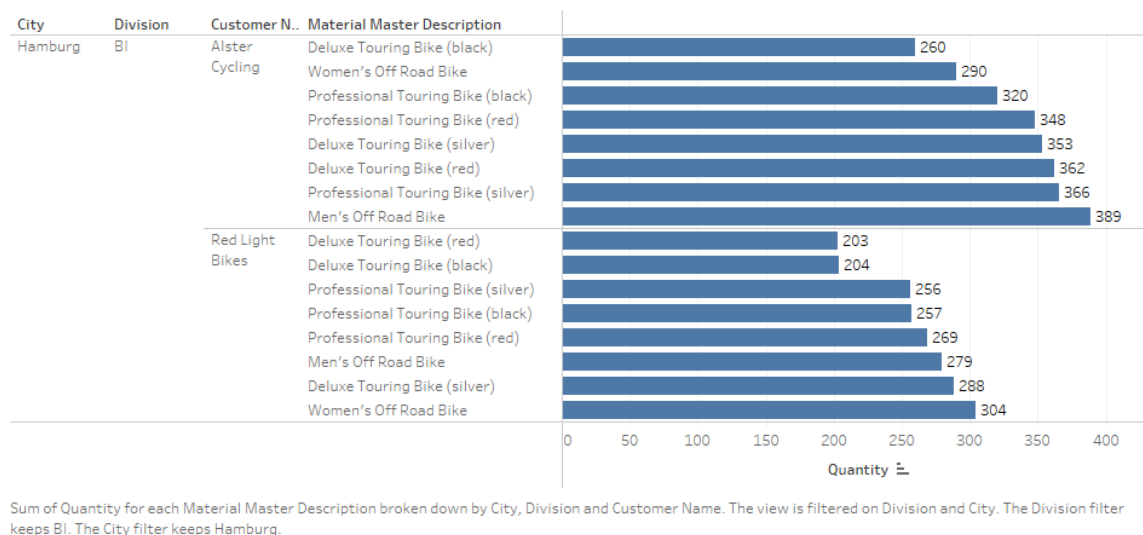


Figure 3.6 Quantity of bicycles sales per customer in Hamburg

There are total 2 customers in Hamburg city which is Alster Cycling and Red Light Cycling. In Alster Cycling, the highest sales bicycle product is men's off road bike (389 sales) while the lowest sales bicycle product is the black deluxe touring bike (260 sales). In Red Light Bikes,

the highest sales bicycle product is women's off road bikes (304 sales) while the low sales bike products are red and black deluxe touring bikes (203 and 204 sales).

In terms of deluxe touring bike sales, sales of silver colour (288 sales) are significantly outperformed red (204 sales) and black colours (203 sales) in Red Light Bikes while sales of red (362 sales) and silver colour (353 sales) are significantly better than black colour (260 sales) in Alster Cycling. In terms of professional touring bikes, silver colour sales (366 sales) are better than red (348 sales) and black colour bikes (320 sales) in Alster Cycling while red colour (267 sales) has better sales than black (257 sales) and silver (256 sales) in Red Light Bikes.

The significant difference between these two customers is the women's off-road bike has the highest sale in Red Light Bikes but low sales in Alster Cycling which is ranked the second-lowest with only 290 sales. The similarity is the sales of black colour deluxe touring bikes are ranked low among both customers. In addition, silver colour bikes have higher sales compared to others. To further investigate the reason, the discount from GBI company to each customer is reviewed in the following session.

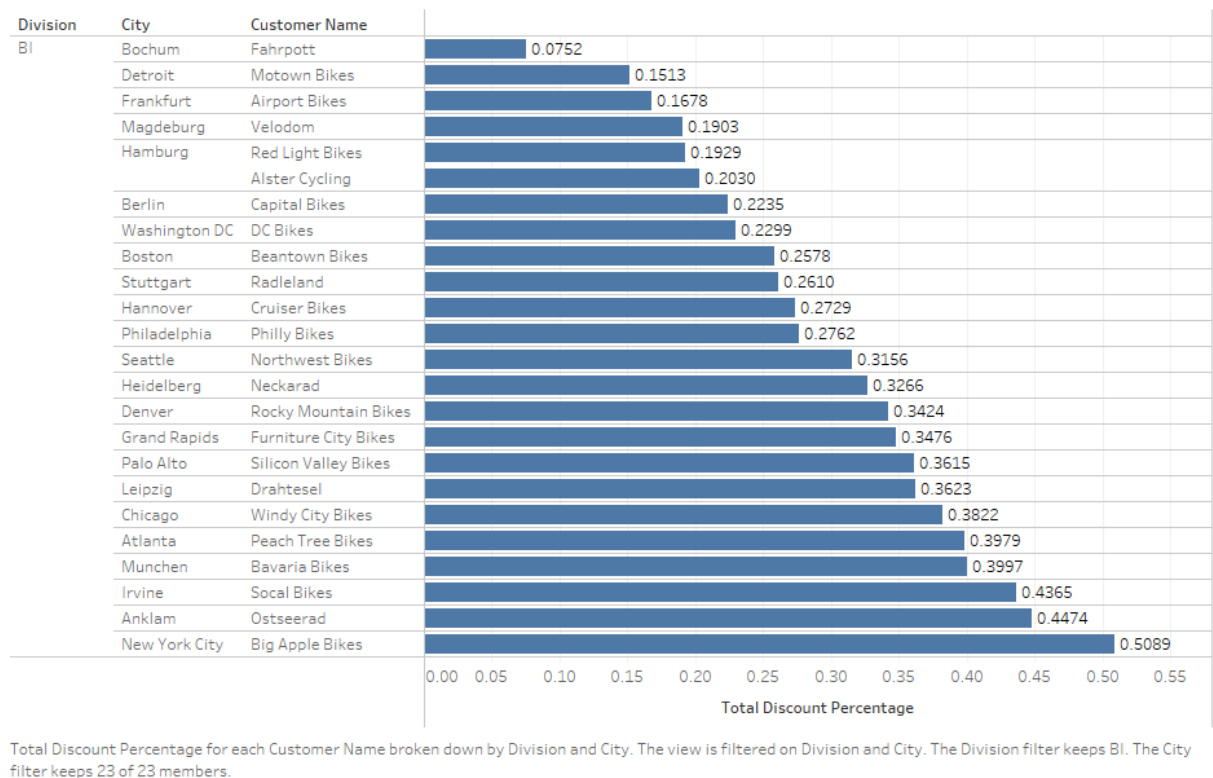


Figure 3.7 Discount percentage for different cities in Germany

The figure above is the discount percentage for different cities in Germany. The calculation is using the sum of discount (USD) divided by the sum of revenue (USD) times 100. Based on

the figure, it shows that the total percentage that GBI company gave for the customer in Hamburg is comparatively low with only 0.1929% for Red Light Bikes and 0.2030% for Alster Cycling. There are total 23 cities in Germany that were considered in this data, Hamburg ranked the fifth-lowest discount city which indicates that they obtain significantly lower offer when compared to other cities.

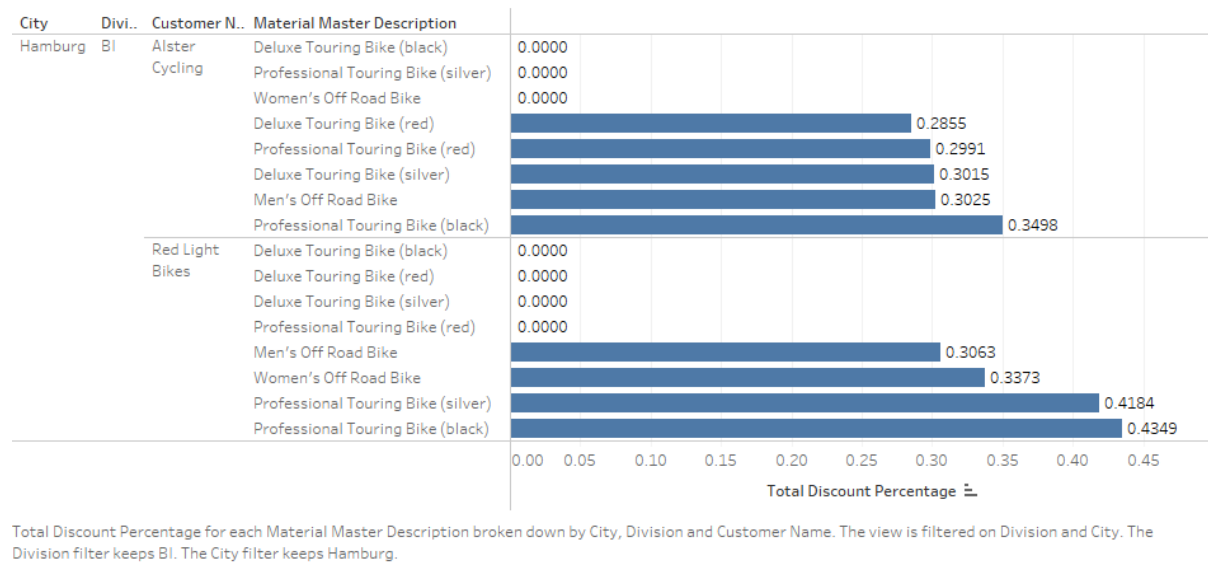


Figure 3.8 Discount on each bicycle

The above figure is after calculation by using the total discount divided by total revenue times 100. This calculation is utilized to better visualize the discount percentage for each type of bicycle in two companies. In this section, the discount is not viewed in terms of USD to prevent any bias, for example, a 10 USD discount on bicycle A and a 10 USD discount on bicycle B cannot be compared because the price of the bicycle is different, so the discount percentage is also different. Based on figure 3.8, in Alster Cycling, there is no discount offered on black color deluxe touring bikes, silver colour professional touring bikes, and women's off road bikes. In Red Light Bikes, there is no discount on deluxe touring bikes in all colour and red colour professional touring bikes.

From this finding, we can answer the questions raised above: The women's off-road bike has the highest sales in Red Light Bikes but low sales in Alster Cycling which is ranked the second-lowest with only 290 sales. This is because GBI company offer a 0.3% discount to Red Light Bikes but no offer to Alster Cycling bikes which potentially cause the low sales of women's off road bike in Alster Cycling. On the other hand, another problem that was raised previously is the sales of black color deluxe touring bikes are ranked low in both customers.

This is because there is totally no discount offer to both customers for black colour deluxe touring bikes which potentially causes the low sales of this product in both customers.

However, although the professional touring bike in silver colour does not provide discount by GBI company to Alster Cycling, this product still has a good sales quantity which is the top 2 sales (366 sales). On the other hand, the black colour professional touring bike obtain the highest percentage discount from GBI company, however, the sales quantity still ranked the third-lowest in this product (320 sales). On the other hand, in Red Light Bike, all the colour of deluxe touring bikes does not have a discount, however, the silver colour deluxe touring bike still ranked the top 2 sales (288 sales) while the red and black colour ranked the lowest and second-lowest sale (203 and 204 sales). The black colour professional touring bike has the highest discount but still has a low sales quantity in Red Light Bike. In this context, with the combination of assumptions previously, the roles of bikes' colour speak out. The data analysis shows that silver colour bicycle product has more market than other colours.

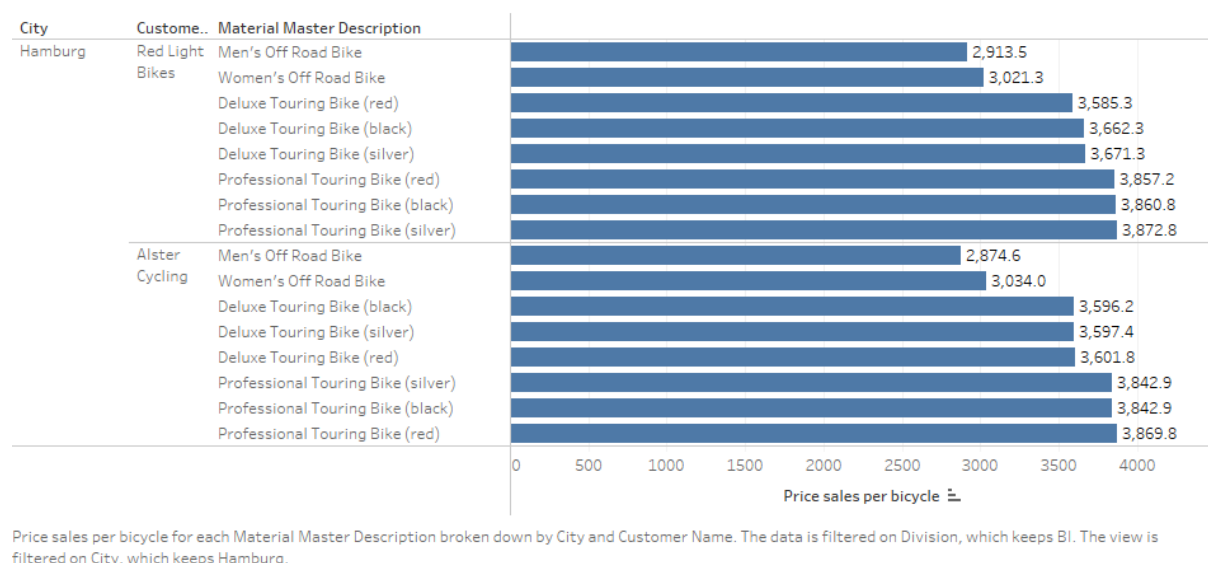


Figure 3.9 Price of each bicycle type for each company

Figure 3.9 shows the bicycle price for each bicycle type in each company. It can be seen that the men's off road bike has the lowest price in both companies. Hence, it can be pointed out that the men's off road bike has high sales in both customers due to the discount offer (Figure 3.8) and the low price (Figure 3.9). Based on the above findings, it can be hypothesized that the sales of the deluxe touring bikes and professional touring bikes are more dependent on the bike colour while the sales of women's and men's road bikes are more

dependent on the cheap price and discount. In the next session, it is going to further drill down to understand the buying behavior of customers in each year.

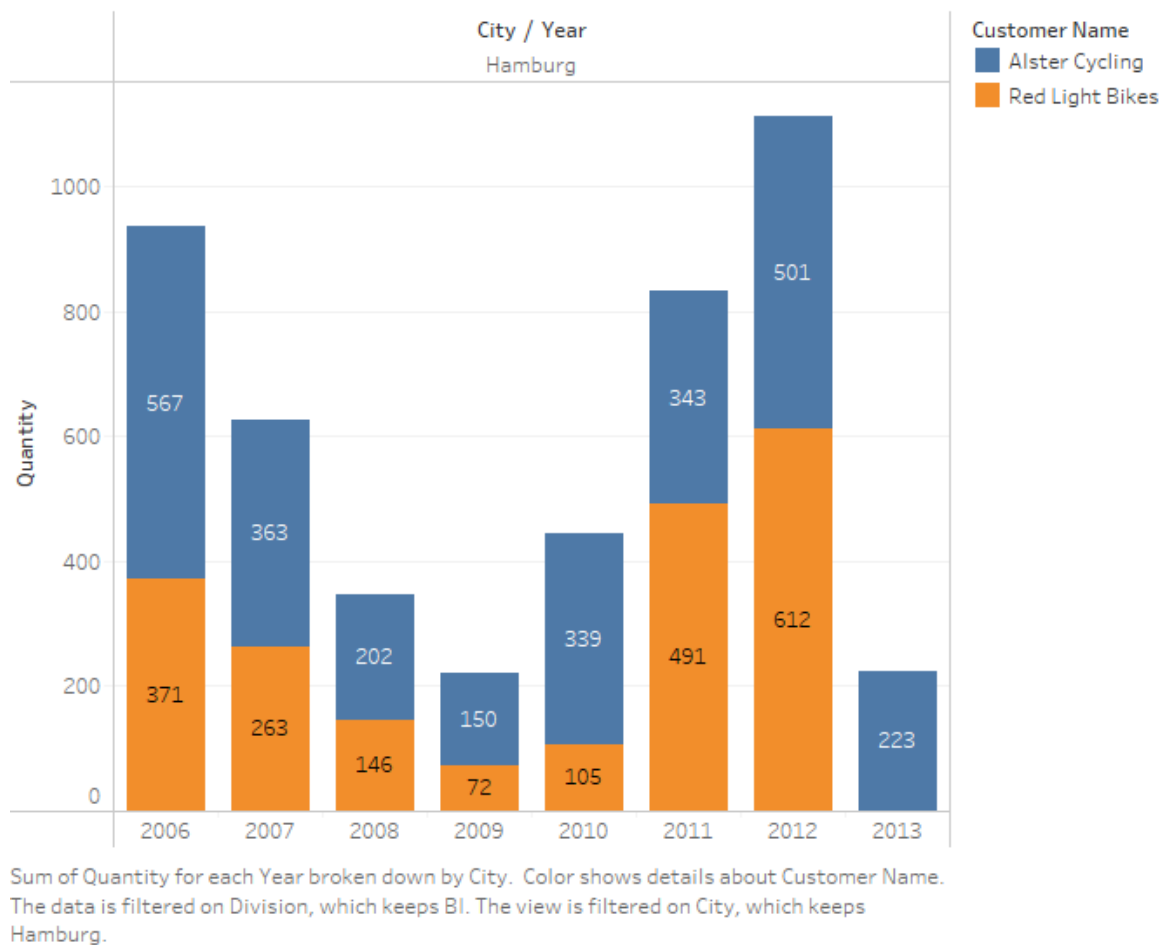
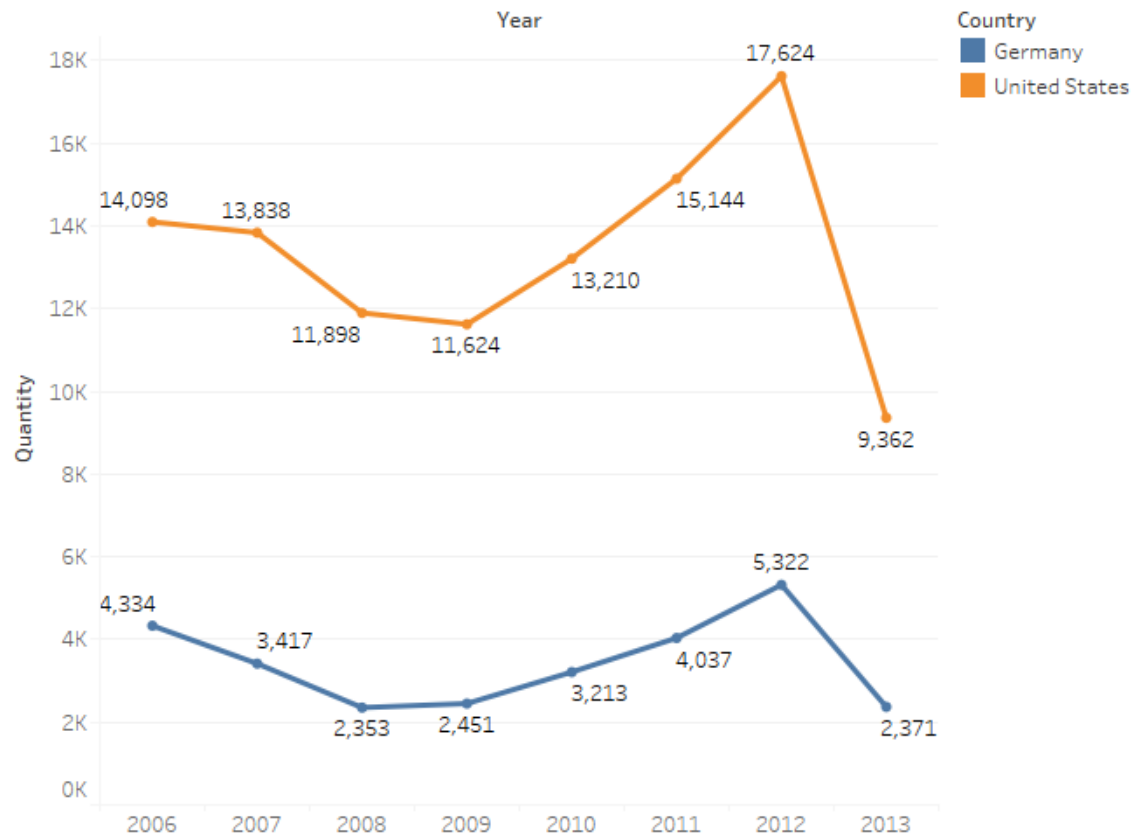


Figure 3.10 Quantity of bicycles sales in each year for each customer

Based on figure 3.10, it is shown that the buying behavior of the customer is not consistent. From the year 2006, the sales quantity is gradually decreased until 2009 and then gradually increase until 2012. In the year 2012, the sales of bicycles are the highest for both customers. However, in the year 2013, it is seen that the Red light Bikes customer had churned.



The trend of sum of Quantity for Year. Color shows details about Country. The data is filtered on Division, which keeps BI. The view is filtered on Country, which keeps Germany and United States.

Figure 3.11 Sales trend along 7 ½ years in Germany and United State

To understand the inconsistent buying behavior, the Germany and United State trend are visualized. It can be seen that there has the same trend as figure 3.10, this can be hypothesized that there might have a financial crisis or other global issues that cause this scenario. Since the problem statement is the bicycle sales of Hamburg are inequal with population. After visualizing the whole trend, this point is not an important issue to investigate. The issue of customer churn in 2013 is comparatively more significant to relate with the inequality issue. Hence, this customer behavior issue is further investigated in the following figure.

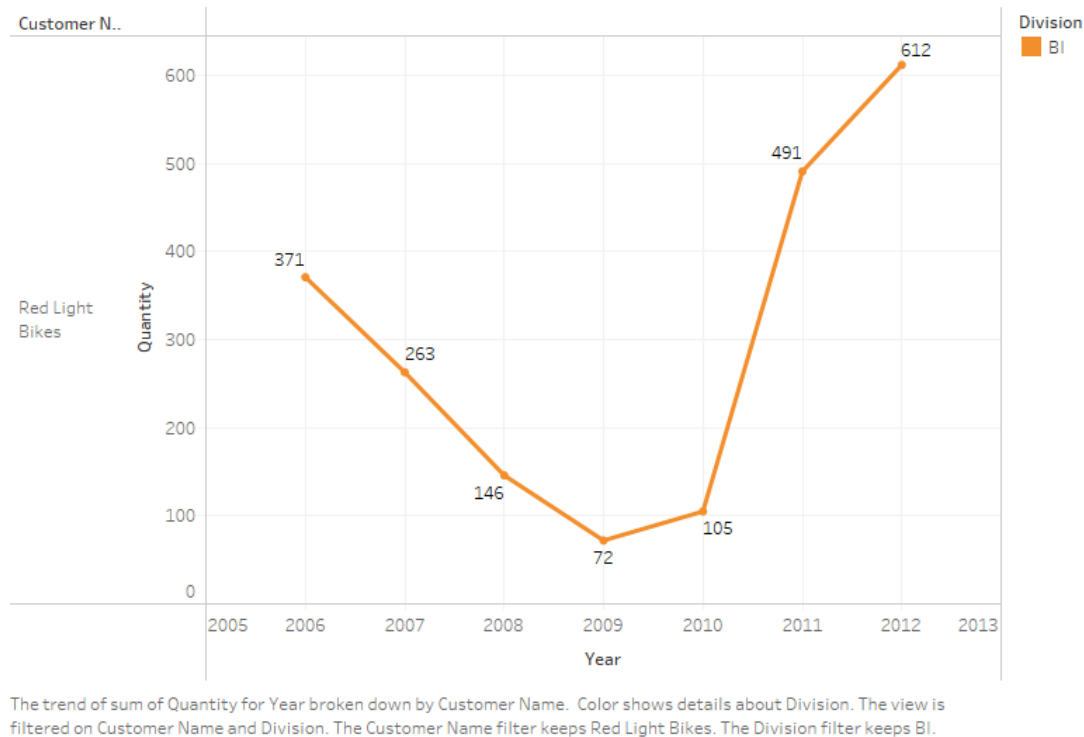


Figure 3.12: Buying behavior of Red Light Bikes

Based on figure 3.12, it can be obviously seen that there is a significant increase in sales from 2010 (106 sales) until 2012 (612 sales). This indicates that the business of Red Light Bikes is expanding. Hence, the attrition can be further drilled down into the discount offer by GBI company to this customer.

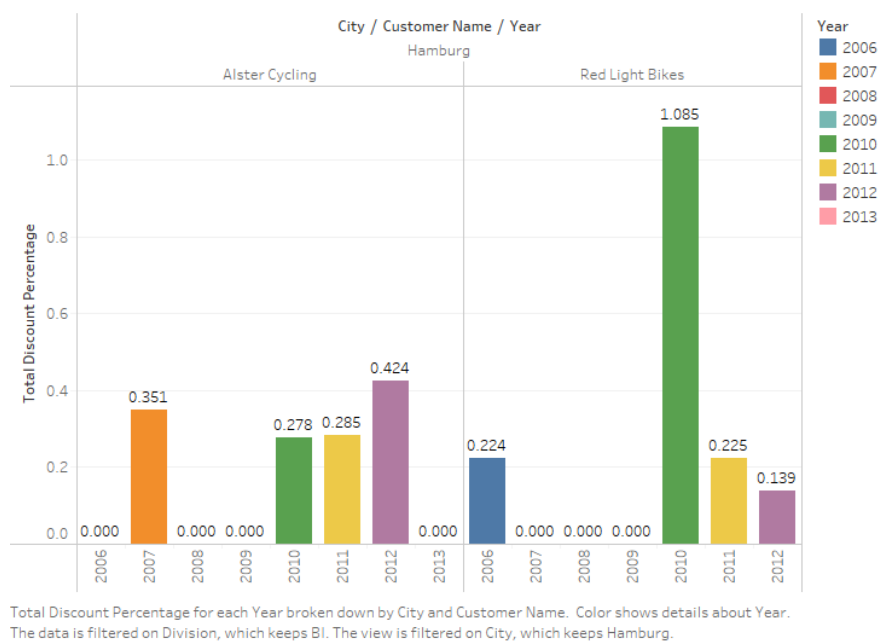


Figure 3.12 Discount percentage on bicycles each year for each customer

Based on figure 3.12, there is obvious shows that the discount for Red Light Bikes is significantly decreased starting from 2011. Hence, this can be a valid reason that causes the churn of Red Light Bikes. It can be hypothesized that there is another better discount from another supplier which supports this attrition since Red Light Bikes started to buy with a higher quantity of bicycles, a higher percentage of discount would be a significant point for them to churn.

Customer buying behavior is correlated with cyclist buying behavior. Based on the finding using organization data, it is found that the customer buying behavior is different based on the type of bicycle. In professional and deluxe touring bikes, the colour of the bicycle is the factor that can determine the sales of the bicycle. While in the women's and men's road bikes, the price and the discount are the factors that determine the sales of the bicycle. In term of the colour of the bicycle, it can be seen that there are only three colours available which is black, red and silver in both deluxe and professional touring bike under GBI company. Among these colours, black colour has the lowest preference among customers. This indicates that the cyclist population in Hamburg significantly considers the factor of bicycle appearance. With only three options of colour, it can be hypothesized that there are other suppliers that do provide more bicycle colour options which attract other customers.

On the other hand, the low sales of women's road bikes in Alster Cycling company are due to no discount offered for this bike's product. In addition, based on organizational data, it is showing that the business of Red Light Bikes is expanding, however, it churned in 2013 after a high buying quantity in 2012. The discount that was provided to Red Light Bikes from GBI company pointed out that the significant decrease of the discount from 2011 can be the possible reason that cause the churn. It is also can be hypothesized that there is a strong competitor in Hamburg that has a higher ability and better strategies than GBI company to attract customers such as more bike colour options and higher discounts offered. The population of Hamburg is large when compared to other cities. However, the quantity of the sales is not equal to its population and it is seen that the quantity that buys from each customer is not high. With the finding of the possible presence of stronger competitors, it can be hypothesized that the inequality of sales with population is due to the business strategies such as discounts and bicycle appearance is not as strong as other competitors. This causes most of the customers tends to buy from other suppliers rather than GBI company. Hence, it is suggested that GBI company can provide more discounts and bicycle colour options to attract more customers and prevent the current customer churn. Here, objective 1 of this project is achieved.

3.2 Information Analysis

Hamburg is one of the cities in Germany. Biking is ingrained in the German culture. Bicyclists are a common and anticipated component of German transportation, contrasting in another nation where bicycling is much more of a sport. Over the last decade, Germany's bicycle facilities have dramatically expanded, and the country now has a wide system of well regional routes. Germans are more likely to be seen on two wheels in every city now that they are aware of the health and environmental advantages of bicycling. Furthermore, the country's bicycle-path systems are among the most intricate worldwide in Germany.

Bicycle paths can be found throughout the nation, and many Germans utilize bicycles as a key component of their regular journey to job or study. In Germany, over 80% of the community owns a bike, giving a cumulative of 73 million bicycles that are increasingly being utilized. Based on German government data, 30% of residents in German cities such as Hamburg with populations exceeding 500,000 people rely solely on bicycles for transportation. This suggests that these families do not hold a vehicle or a motorcycle. Over 80% of Germans ride bikes, particularly when traveling less than 15 kilometers. As a result, they are one of the most prominent bicycling countries (Bas, 2005; Bike Hike, n.d.; Easy Bike Tours, n.d; Marsal, 2020.).

The German Ministry of Transport's planned to create a freeway system entirely devoted to bikes. Freeways are designed to lessen the adverse effects of motorized transportation, such as loudness and pollutants, while also helping to fight global warming. One of the proposed lines, which will span 100 kilometers and link 10 main cities including Hamburg, will follow disused the railroads. The freeway will be the longest cycling roadway once it is constructed. According to the report, 50,000 vehicles will be displaced by bikes on the roadways. The concept was developed during a national institution in 2010 when a major A40 motorway connecting Duisburg and Dortmund was blocked to vehicles and only bicyclists and skateboarders were allowed to use it (Marsal, 2020).

With the cycling culture in Germany, buying a bicycle in Germany is easy, especially in a large city such as Hamburg. Cyclists can buy a second-hand bike for only around 270 USD or a new bike with a range of 760 to 1700 USD (Bas, 2005). For a road bike, the average price is around 350-700 USD and 1000 USD for a mountain bike. Based on the study of Bike Hike, in all cities in Germany including Hamburg, around 400 USD can buy a long-lasting bike, while a better quality and feature bike cost around 500 to 900 USD. This study also tested

different bikes from 300 USD to 2000 USD. It concludes that a bike with a higher price has a higher quality component of bicycle such as aluminum, a lightweight frame made of carbon fiber and steel with high tensile strength. However, a few hundred dollars is good enough to buy a good bike. People riding costly bicycles are more inclined to compete, train consistently, and cycle greater distances.

Cycling is a common scenario in Hamburg. In Hamburg, bike rental services such as StadtRAD Hamburg are provided which are free for the first 30 minutes, only 3 USD per hour and 15 USD per day (hamburg.com, n.d.). Bikes can be rented at a discounted rate at a number of locations across Hamburg. The aim of StadtRAD Hamburg is to augment local transportation and reduce traffic. It is presently Germany's most frequently utilized rental bike business, with over 2 million rentals each year. It provides a cost-effective method for residents and visitors to enjoy the area without waiting for buses or trains or getting involved in heavy traffic.

The location of the rental station can be located online or by the app. If there isn't a StadtRAD nearby, the app will offer users the following closest option station. After registering for the rental service for free, users can hire bicycles quickly and easily through the app. They can also rent bikes through member cards or mobile phones. The bicycles are accessible 24 hours a day and can be returned to any station in the town. There are 250 stations and 3100 bicycles available, as well as in big populated areas, commercial areas, and major leisure travel sites. The closest station is usually only just a few hundred meters, and the service is continually being extended and improved as a result of its popularity. Most importantly, The Hamburg CARD offer is available in all the StadtRAD Hamburg area (Hamburg tourism, n.d.).

In terms of competitors, it is found that there is a popular bike wholesaler in Hamburg which is Bike & Outdoor Co GmbH & Co KG. Bikes which started their business from the year 1999. Helmets, gadgets, shoes, apparel, bikes and accessories are among the sporting and leisure goods sold by this business. Users could find Bike & Outdoor Company all across Hamburg. This business employs 400 people and earns \$106.47 million in revenue (USD). Besides, this business corporate family consists of 47 organizations. In addition, other than a physical shop, this company also provides its own professional online shopping service and also social media marketing such as Facebook.

This competitor has many different types of bikes which include mountain bikes, city bikes, children's bikes, gravel bikes, off-road bikes, touring bikes, single-speed bikes, racing

bikes, cyclocross bikes, women's road bikes, and e-bike which is widely used bike right now. Under each type of bike, there are more than 50 models available and many options for bicycle colours such as coffee black, blue, green, lime, yellow, silver, red, etc. The price range of their bicycles ranges from 50 USD to 5000 USD. On their website, many details information can be retrieved such as the bicycle function, component material and provide bicycle pictures to select different colours. Moreover, they have a live agent service on their website which brings convenience to customers by answering customers' enquiries immediately. Hence, each cyclist or individual in Hamburg city can easily order their preferred bike online with ample information rather than go to a bicycle shop. In addition, when they do promotions, they also provide discounts of more than 10% for each bicycle (BOC, n.d.).

Electric bike supply and consumption become constantly increasing globally, with fresh and old cyclists incorporating e-bikes into a regular ordinary routine. Cycling is now regarded as more approachable to individuals of all generations and origins due to the use of an electric motor. Road cycling is becoming more common as e-bikes and thick tyre bikes become available, allowing more members to join in the activity. Many other current e-bikes are developed specifically for city cycling and transportation. Many cyclists have selected an electric bicycle for day city commuting due to the advantages, convenience, and reliability of e-bikes, paired with mechanical parts and the facility's capacity to move individuals from place to place. Electric bikes allow users to benefit from the effectiveness and maneuverability of a bike while also utilizing the strength of the engine to substantially increase the potential for hauling large loads and commodities both locally and across long distances.

Based on the information analysis, it is found that Hamburg is a cycling support city. Cycling activity in Hamburg is not just racing or sport but is a normal transport vehicle that they normally used for work or for school. Freeway for bicycle is also provided in Hamburg. Hence, there is always a demand for bicycles in Hamburg. However, based on the information found, the inequality of GBI bicycle sales with the Hamburg population is might due to a few reasons in this section. First, bicycle rental is a normal trend in Hamburg with more than 250 stations and 3100 bicycles provided by StadtRAD company with a cheap price which is only 3 USD per hour or 15 USD per day. Residents with Hamburg CARD can even get discounts from all StadtRAD Hamburg areas, this might be the reason that causes individuals in Hamburg more willing to rent a bicycle rather than buy it from a bicycle shop. In addition, the average price for a long-lasting bicycle is much cheaper than GBI company bicycles. GBI company

bicycle has a higher price and is more for racing and travel purpose which might not suitable for the Hamburg population.

Furthermore, there is a strong competitor in Hamburg which is Bike & Outdoor Co GmbH & Co KG. This competitor has a more stable market than GBI company as it is origin from Hamburg and started its business in the year 1999. This competitor has better business strategies than the GBI company, such as targeting individual cyclists, providing high discount percentages, selling more bicycle types, more colours and model options, and providing good quality bicycles but cheaper price than the GBI company, consisting professional website to introduce their products, ample information given to customers and provide live agent service to answer customer inquiries rapidly.

Moreover, the bicycles products of this competitor are suitable for all generations. For example, they provide e-bike which is in demand because it is suitable for all age including elderly individual, provides road bikes for women and also provides children's bikes. This point has outperformed GBI company because GBI company only provides 3 types of a bike which is a professional touring bike, deluxe touring bike and off-road bike with just 3 colour options (red, black and silver). Besides that, there are new market demands for the bikes changed. E-bike has now become the more prevalent bike in Hamburg. The competitor mentioned previously is mainly focused on the sales of e-bikes by providing more than 200 models for e-bikes. Here pointed the reasons why the sales of GBI company are not equal to the population in Hamburg. Here, objective 2 in this project is achieved. Hence, to increase the revenue of GBI company, better business strategies, higher discount, adjust target customers population and more bike options are needed in the Hamburg market.

3.3 Knowledge Analysis

Lack of customer journey management is a vital reason to fail in the maintenance of the long-term relationship between businesses with clients. Manufacturers such as Cola-cola company efficiently impact merchants' visual displays and marketing operations by addressing buyers if they develop a complete grasp of customer journey management (CJM). Monitoring and controlling clients' satisfaction through the entire purchase experience is customer journey management (CJM). Each store and business supplier must have a holistic and structured CJM strategy in operation. Simultaneously, manufacturers must evaluate their consumers' perspectives and experiences in order to optimize both the positioning of their goods and products, as well as their interactions with customers. Since a number of digital advancements are progressively influencing customer decision-making and experiences, it is vital for manufacturers and retailers, for example, must expressly find some way to include previous customer experience into modelling techniques. (Grewal & Roggeveen, 2020; Kuehn et al., 2019; Tueanrat et al., 2021).

Customer emotional consideration and fundamental elements of customer behaviour can be reasons that are related to supplier revenue sales. Customer value and purchasing experiences play a significant assessment function, and consumer satisfaction will be a prediction of purchase emotions for subsequent decision-making. This emphasizes the importance of customer value creation because customer experience in the company is influenced by customer value. The importance of recognized worth in generating the ultimate client experience is a key factor of behavioural intention. When clients and a business work collaboratively to produce value for customers, this is referred to as recognized customer value generation. It also means delivering helpful goods and products that clients experience deserving their attention, effort and pay (An & Han, 2020; Mahajan, 2020). There are 2 critical processes in client value development which are identifying clients demands through connection development and translating those demands into marketing ideas (Gutiérrez, et al., 2019). The study of Ann and Han, (2020) further elaborated that a company can boost a company's competitiveness by lowering expenses and encouraging any use of technology when utilized together. As a result, clients enjoy the service firm and also contribute to the creation of values by engaging in the service delivery activity.

Lack of marketing communication is a big obstacle to a company's development. Brand image and promotional effectiveness can both be shaped through marketing communication. Advertisement, promotional offers, special events, public affairs, direct selling, interactive marketing, increase brand awareness, and sales people are all part of the marketing communication mix, which is used to improve the efficiency and efficacy of marketing (Amin & Priansah, 2019). Digital marketing is at the forefront of technological change, enabling new functionalities to connect, advise, interact, provide, and promote goods and products to clients (Kim et al., 2021). By giving details and a place to perform online purchases, Internet has evolved into an inventive marketing strategy. Digital marketing communication provides a larger service range, allowing for improved marketing reach to a larger public. Because the marketer has more opportunities available to deliver more details to a prospective client at a reasonably low cost. The continual evolution of advertisements in the digital context also improves the performance of emerging kinds of digital marketing communication (Krizanova et al., 2019).

One of the popular digital marketing communication strategies is social media marketing strategy (SMMS). Social media are channels through which people develop connections and share content or opinions in a marketing setting. SMSS is a company's coherent style of operations that turns social networking interconnectivity and interrelations into critical intangible implies to accomplish desired marketing results, starting with a thorough evaluation of clients' intentions for brand-related online networking use and the implementation of intentional initiatives (Li et al., 2020). Many marketing communication professionals consider advertisement to be a critical and important part of the overall communication strategy. Advertising is a method of enticement that relies on details about an item's advantages to produce favorable perceptions that make customer turn their mind to buying (Soedarsono et al., 2020).

There are many types of social media platforms available nowadays, for example, Facebook, Instagram, Youtube, etc. Based on the study of Soegoto and Utomo, (2019), the authors used the descriptive method to illustrate the social media marketing strategy on Instagram. The author further elaborated that social media marketing can be utilized by sell items by posting attractive photos or videos aid by well-known advertisers, offering promotions, and providing excellent customer service when accepting orders. Use solutions that are better recognized as influencer marketing or endorsements by prominent persons. This strategy is frequently employed by product managers to sell their items by enlisting the help of artists or

celebrities. Besides, a marketing approach with a pleasing look, such as posting photographs or films with a pleasing design also potentially affects sales.

Under the marketing communication mix, promotion sales also play an important role. The study of Ibrahim et al. (2018) shows that companies that establish integrated and effective promotion plans can effectively increase brand recognition, client loyalty, and revenue. Promotion is a typical strategy for attracting customers to a product, generating sales, and building brand loyalty. The goal of promotion is to increase buying potential through improving the interaction between the customer and the goods being sold. The study of Singh et al. (2021) which investigated the effectiveness of promotion strategy in Coway products conclude that promotion that carries out through social media or online has a larger impact because the discount can be easily explored by the public and attract more customers. Since promotion attracts the customers' attention with explicit and specific content, promotion offers are meant to improve the rate or quantity of purchases, with a stronger and faster response from customers. Promotion can be divided into push strategy and attract strategy. Push strategy is trying to pass the item through distribution platforms as quickly as possible, compelling the seller to come up with new ways to promote products. The attraction strategy focuses on the final buyer who requires to be enticed into making a deal (Alexandrescu & Milandru, 2018).

Besides, there is also research that points out Maslow's hierarchy of needs is important to understand customer needs. Maslow's hierarchy of needs is an incentive concept that argues that an individual's conduct is dictated by 5 areas of basic demands. The figure below shows the need for Maslow's hierarchy (Trivedi & Mehta, 2019).

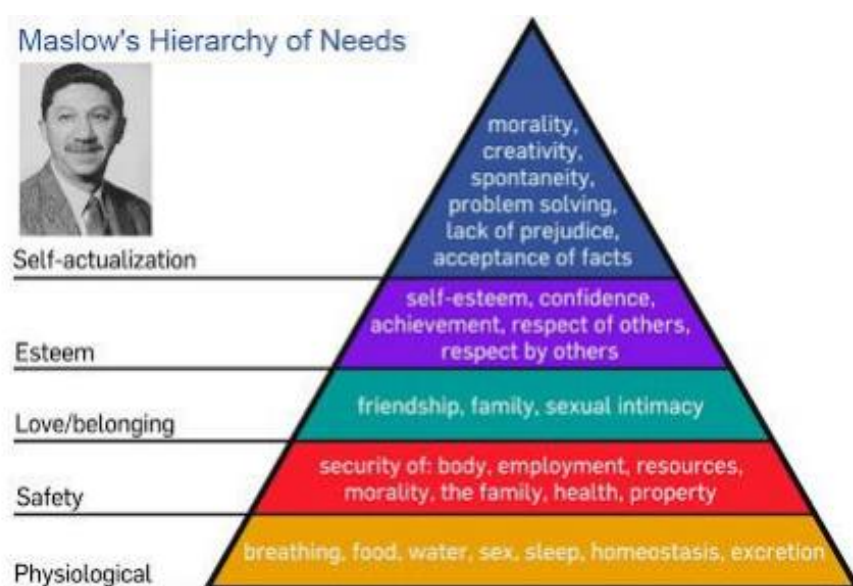


Figure 3.13: Maslow's hierarchy of needs

Note. Adapted from Trivedi & Mehta, 2019

These are all adaptive activities that occur throughout one's lifetime and one prefer to develop themselves instinctively, which is undeniable. If there are multiple demands, people will prioritize meeting the most critical ones. In general, when an individual loses all levels, he has greater low-level physiological needs, they will have greater expectations once the level is satisfied. And anytime a class's requirements are satisfied, there is a commensurate feeling of accomplishment and pleasure. The delight of the harvest will be higher as the number of fulfilments rises (Peng, 2020).

Next, an organization cannot get improvement if it does not have SWOT analysis. Over several decades, growing numbers of firms have used the SWOT analysis as a crucial "filtration system" for their strategic planning operation in the quest to develop strategies (Vlados, 2019). A SWOT analysis is effective for creating marketing plans that could result in maximum market expansion and revenues. Companies can use SWOT analysis to increase their business prospects and optimize their qualities against competitors' deficiencies (Benzaghta et al., 2021). SWOT Analysis (short for "strengths", "weaknesses", "opportunities", "threats") is a concept used to determine the ability of a company to fight against its competitors. Internally, strengths and weaknesses are linked. This is a feature of a company that gives it an edge over its competitors. Externally, opportunity and treat put it at a disadvantage in comparison to the competitors. "opportunity" is used to profit the organization. "Threats," are a reality that may bring problems for the business (Teoli et al., 2021). SWOT analysis assists in identifying a company's core competencies, such as future capabilities, and using them to explore opportunities and mitigate risks, as well as identifying and minimizing flaws. (Vlados, 2019).

Furthermore, Porter's Five Forces are utilized by many companies to change the business environment. In Porter's Five Forces, the dominance of customers and providers, competition among current rivals, the threat of substitutes, and new competitors are all factors to consider when analyzing the structure of an industry (Wellner & Lakotta, 2020). This concept may have relocated from competing in an established challenging business to attempting growth in distinct inventive markets as a result of new technologies and unique approaches to tactical thought processes. For example, when there is a lot of competition among current rivals, the company's profit declines, and companies may use tactics like price reductions, innovative items, media advertising, and service enhancements to boost profits.

Next, when planning to join a new market, it is critical for companies to examine obstacles and predict probable reprisal actions from rivals (Gerard, 2018). This theory can describe why the company is poor in some aspects and strong in others (Chesula & Kiriinya, 2018).

Last but not least, loyalty programs (LP) are a crucial marketing strategy for encouraging repeat sales and building consumer connections. Customer loyalty is a top concern in building and maintaining a crucial company environment (Iglesias et al., 2020; Mainardes, et al., 2020). The introduction of an LP aids in the induction of value, which contributes to customers enrolling in and staying with an LP, as well as reinforcing their purchasing habits and loyalty toward the company. Clients can accrue and redeem incentives such as credits for bonuses. As a result, an LP is an important relationship marketing strategy that companies employ to find, reward, and keep valuable consumers (Chen et al, 2021). For example, Lazada which is an e-commerce company that offers e-coupons, flash sales and points for their customers, the program elements effectively lead to client delight and have a success rate of amplified client satisfaction. Customer loyalty programs compensate clients that interact with a company on a regular basis. It's a client retention strategy that encourages customers to stay with the organization rather than switch to a rival. The more people buy or interact with the business, the more rewards they get. Clients may be awarded gifts or other bonuses. Consumers can utilize their credits to gain rebates, freebies, rewards, or admission to special events in trade for their rewards. The goal is to generate repeat sales and build client confidence in the company. (Panjaitan, 2021).

Based on knowledge analysis, it is found that there is much room for improvement that GBI company can implement. Based on the knowledge finding, it is found that GBI company lacks effective customer journey management, customer value creation, marketing communication, and implementation of Maslow's hierarchy of needs, without using SWOT analysis and Porter Five forces. GBI company should implement customer journey management and Maslow's hierarchy of needs to understand customer emotion, customer requirements and to detect service deficiencies. If customer emotion and satisfaction cannot be fulfilled, the revenue of the company is affected and potentially cause customer attrition situation such as the Red-Light Bikes which churn in the year 2013 due to the lower discount offer by GBI company. Hence, GBI company can emphasize customer value creation, marketing communication mix and loyalty programs in order to retain long-term relationships with customers. Besides, GBI company should also understand its position in the market and

the entry of competitors in order to develop an effective marketing strategy by using SWOT analysis and Porter Five forces.

4.0 Critical Analysis

Based on organizational data analysis, it is found that the customers are more prefer silver color touring bikes and off-road bikes with reasonable prices. The finding finds out that the cyclist of Hamburg significantly considers the appearance of bikes and also the discount on off-road bikes. Based on the above data analysis, it shows that black colour professional and deluxe touring bikes are given the highest discount but still facing the low sale situation but silver colour professional and deluxe touring bikes with lower discount are able to achieve higher sales. This indicates that black colour bikes are not highly preferred by the cyclist in Hamburg. Hence, it is suggested that GBI company can first focus on the sales of silver colour touring bikes by increasing the production of silver colour bikes and lower the production of black colour bikes.

On the other hand, in considering the factor of bike appearance is potentially affect sales quantity, GBI company can upgrade its bike appearance by promoting new colors options such as blue, yellow, coffee, light green, white, orange, purple, and pink. Other than the single colour of the bike, GBI company also can design the bike appearance with a combination of a different colour to attract customers' attention. When there are more options for bikes variation, it potentially increases the bicycle sales of GBI company. After the launching of bikes with new appearance and new colors, the buying behaviors of customers in the new bikes need to be tracked continuously to understand the most preferred design and color of bikes by customers. Other than that, since the off-road bike under GBI company only differentiates into men and women, with only one model for each. It is suggested that GBI company can promote more color options not only for the professional and deluxe touring bikes but also for off-road bikes.

However, the Red Light Bikes churn situation that happened in 2013 brought out information that discount plays an important role to retain customers. Based on the data mining, it is found that the discount provided to the customers in Hamburg is relatively lower than in other cities. And the discount offer is unstable and lower year by year in the case of Red Light Bikes. Hence, it is suggested that GBI company should give a more stable discount to loyal customers at around 10% because 10% is a healthy margin for a discount percentage. This is

because a long-term low discount or without discount for a loyal customer can promote customer churn situation when competitors offer a higher discount to customers. For customers who order more quantity, GBI company also can give some freebies such as accessories to aid in customer satisfaction.

Based on information data analysis, it is found that cycling is a normal scenario in Hamburg. Most of the residents in Hamburg used to ride bicycles for work or school. While there are many other bicycles sales in Hamburg are having a lower price than GBI company. Based on the finding, it is found that the Hamburg population are more prefer reasonable price and long-lasting bicycle. People in Hamburg who buy expensive bicycles are more to ride for competition. Hence, reducing the price of GBI bicycles by around 10-15% is reasonable to target the cyclist population who are more to cycle for racing in Hamburg. However, the price reduction is still not enough because the price of each bicycle in GBI is around 3000 USD, hence the price of a bicycle after reduction is still unaffordable to residents in Hamburg when they have better options. Hence, GBI company is suggested to launch new products such as normal touring bikes with good quality but reasonable prices around 500 USD to compete with the markets.

In addition, it is found that there are more cyclists in Hamburg city who prefer to rent a bicycle due to its advantages. Hence, GBI company can change its customer population target to bike rental organizations. For example, dealing with StadtRAD which has excellent marketing skills may plan to expand its business, and needs a large number of bikes for their business. GBI company can give a 10% discount to the organization when they reach minimum purchasing requirements. In terms of the competitor, it is a very strong competitor since it sells many different types of bicycles and run its business online and offline. Hence, it is essential for GBI company to launch new products that the competitor does not have such as smart e-bikes which is a higher level of e-bikes, launch different colors of bikes models that the competitor lack and organize more flash sales and higher discounts to customers.

Although there is a rental service provided in Hamburg, there are also many residents who are searching to purchase a bicycle if they need a bicycle every day. Hence, other than targeting rental organizations, GBI company also can target individual cyclists like its competitors to increase revenue. Since the competitor does own its website and has a stable market in Hamburg. In order to raise the reputation of GBI company in Hamburg, more advertising activities need to be carried out especially using digital marketing strategies such

as TV, radio, Youtube and Instagram. Other than creating websites, GBI company can focus on branding and marketing by hiring IT professionals, to create GBI apps in order to let customers download into their mobile phones. To encourage customers for downloading their app, GBI can offer a 10% discount to those who order through apps for the first time. Through the apps and owing customers' email when they registered, GBI company can send notifications to customers frequently such as new products, new discounts, or flash sales when there are any events organized in GBI company.

Based on knowledge analysis, GBI company can apply customer journey management and customer value creation together to understand their service gap and create pleasure emotion to customers. For example, apply customer journey management by keeping on tracking the customer buying behavior to have a consistent view of customer patterns and predict customer preference. When understanding customer preference, create customer value by introducing products to the customers which satisfy their needs and requirement. When there are any issues during the customer purchasing journey, GBI company needs to give solutions in a short period of time and provide their best service. Besides that, GBI company also can encourage customers to give feedback about their products such as the new color bikes, or services such as solutions after a complaint to understand customer aspects in order to seek improvement. This result improves customer satisfaction and their experience when purchasing with GBI company.

Besides, GBI company also can apply the SWOT analysis to understand business positions such as their strength, weakness, chance and risk. For example, the strength of bikes in GBI company is a high-quality product, but the weakness is the price of bicycles is too expensive and not affordable by residents in Hamburg, hence to grab the opportunities for more bicycle sales in Hamburg and prevent the risk that customers buy from competitors, GBI company can launch a new product that is within a more reasonable price range that can be afforded by Hamburg resident with good quality and more options than competitors. Porter's five forces also can be applied to the business of GBI companies to understand their position in the highly competitive market and the power of a stand that a company would choose to take to make a better business strategy. For example, after GBI company launch a new product which is the smart e-bike or bicycle colour that is more demand in the market. They can focus on these products in order to reduce buyer power to reduce their product price.

Next, the marketing communication mix can be applied to GBI company especially advertising and promotion which are always the key that can attract customers. For example, the digital marketing communication such as social media marketing strategy that had discussed in the knowledge analysis session. In this era of science and technology, most people own a social media account. Right now, Instagram, Facebook and Youtube are popular social media platforms that are often used. GBI company can focus their digital advertisement on these social platforms. For example, a famous artist or bicycle star can be hired to promote the new bike products in GBI company by using good quality images or videos in order to effectively accelerate the news to the public with a good impression. Discounts can also be applied in this context, for example, first-time buyers and loyal customers for more than three years can get up to 20% discount on the new products. This strategy not only fulfills customer satisfaction but also attain new customer source.

Furthermore, GBI company also can use a loyalty program to build a healthy and good relationship with customers. For example, provide rewards or point to the customer when they purchase any bike from GBI company while the number of points depends on the price of bikes they buy. By using the points, customers can get a discount on their next purchase. This strategy is to encourage the customers to make a repeat purchase in GBI company. Last but not least, Maslow's hierarchy of needs theory is also useful to aid in GBI company business to develop benefit schemes. For example, the population in Hamburg are more tends to make choices that satisfy their personal needs first such as a basic bicycle that can function well, this causes they used to take convenience from the rental bicycle service. Understand the needs of the customer, GBI company can offer basic and good quality bicycles at reasonable prices to fulfill customers' needs. By buying the bicycle from GBI company, their good quality bicycle which can be long-lasting is more valuable than rent a bicycle in long-term. Then, after buying a bicycle, GBI company can promote their accessories as well such as knee pad, helmet and water bottles. This strategy can fulfill customer needs and step by step improve company revenues.

5.0 Final Deliverables

Based on the critical analysis, the final deliverables are GBI company should pay attention to new product development such as different types of bikes, different color options, and different designs. GBI company also needs to focus more on its marketing and branding strategies such as creating its own website and apps, giving stable discounts to the loyal customers to remain

a healthy relationship with the customer, providing a discount to first-time purchases client to attain new customers, hiring a famous artist or bicycle star to promote a new product with good quality picture and video through popular social media in order to easily reach to the public. Other than that, GBI company should change their target customer population in Hamburg to bike rental organizations and cyclist individuals. Besides, the new product of GBI company needs to make some price adjustments so that the population of Hamburg is affordable to buy bicycles from GBI company.

In addition, GBI company should always keep tracking the customer buying behavior to have a consistent view of customer patterns and predict customer preferences. Then, create customer value by introducing products to the customers which satisfy their needs and requirement after understanding customer preferences to improve customer satisfaction. Besides, encourage customer engagement to give opinions on GBI products and services in order to seek improvement. Next, understand the strength and weaknesses of the company and find business opportunities and prevent risk by optimizing their strength such as quality but tackling their weakness such as expensive bicycles prices.

GBI company also needs to understand its self-position in the competitive market such as launching new products that do not sell by others competitors in order to stand out from competitors. Other than that, GBI company should remain healthy and good relationships with customers by maintaining their loyalty through business strategies such as offering member points that can be used as discounts on their next purchase. Last but not least, GBI company should understand customer basic needs and create strategies based on their needs such as providing cheap but good quality basic bicycles for Hamburg cyclists.

6.0 Conclusion

In the organization data analysis, a Microsoft Excel file which is structured data is utilized by using a popular big data platform which is Tableau. The data is extracted, transformed and loaded to visualize the data and carry out data mining. In this session, the first objective is achieved by identifying the possible problem in the organization that causes inequality between the bicycles sales in Hamburg and with population. In the information analysis, external data in the form of unstructured data is used based on text and information search across the internet to find out the possible reason that potentially affects the revenue and sales quantity of bicycles in GBI company. Here, the second objective is achieved which is investigating the possible

reasons other than the organizational problem that causes bicycles sales in Hamburg unequal with the population. Last but not least, the knowledge analysis is mainly based on a literature review by using reliable recent journals to extract knowledge or solutions utilized by other companies or businesses to solve the same problem in this project. Here, objective 3 is achieved which is to provide business strategies that can potentially improve bicycle sales in Hamburg. By implementing all the business strategies, the main aim of this project which is to improve the revenue of bicycles sales of GBI company in Hamburg can be achieved.

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