

Cyber Consumer and Marketing Analytics

DAT7004

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Section 1:Introduction

I have collected the marketing analytics dataset from Kaggle. The scenario of that data set is , a fast food chain plans to introduce a new item to their menu but they are not able to decide which promotion has the main effect on sales. So they added new item in different location and different markets. This dataset has seven column MarketID (unique identifier for market), MarketSize (market size area by sales), LocationID (unique store location), AgeOfStore (age of store in years), Promotion (three promotions that were tested), Week (one of four weeks when the promotion were run), SalesInThousand.

Literature Review

The quantity surveyor oversees the project from start to finish, including the feasibility study. A quantity surveyor's services include preliminary budget guidance, budget control, tender paperwork, advise on tender processes and legal contracts, contractor negotiations, work in progress valuation, and closing settlement (Pheng et al., 1997). Quantity surveyors must now recognise that, no matter how wonderful their services are, they do not sell themselves in today's competitive market. Quantity surveyors can no longer afford to wait for clients. Clients have grown more discriminating and demanding on the quality and timeliness of the services they get as a result of increases in education, technological advancements, and societal wealth. Despite being aware of the need to enhance the way their services are advertised, many quantity surveyors appear to devote insufficient attention to marketing (Pheng et al., 1997). As a result, marketing should be considered an important component in the development and maintenance of a satisfying and productive professional quantity surveying firm. Many quantity surveyors, on the other hand, have a misunderstanding of what marketing is all about. Some may perceive it as manipulative, wasteful, invasive, and unprofessional, while the majority will consider it as straightforward promotion and sales (Pheng et al., 1997). E. Jerome McCarthy presented the marketing mix of Product, Price, Promotion, and Place to marketing curriculum in 1960. Almost all beginning marketing publications quickly adopted these mnemonically easy-to-remember labels as the organisational framework (Yudelson and Julian, 1999). "Is the four P's model

merely a smart mnemonic technique with decreasing applicability to marketing in the twenty-first century, or does it actually reflect an intelligent conceptual grasp of the basics of marketing as a field?" is a critical topic marketing educators must answer. Should marketing professors continue to expand on McCarthy's ideas, or is it time to start looking for a new and better model? (Yudelsohn and Julian, 1999). The consumer was placed at the core of the marketing conceptual foundation as the focus of all marketing operations when the marketing idea was adopted. In terms of the four P's, this meant that marketers aimed to provide items that customers wanted at an affordable price, use the promotion to highlight the benefits they provided over the competitors, and make them available at a location of the customers' choosing (Yudelsohn and Julian, 1999). The arguments in support of methodical marketing programmes focus on two primary points. The first is the standardization drivers, which are characterised as changes in the worldwide business environment that make standards development a viable, if not unavoidable, approach. The second point to consider is the possible benefits for a corporation that follows an international marketing programme standardisation approach, benefits that make standardisation an attractive option (Theodosiou et al., 2001). The idea of marketing strategy is at the heart of the competitive marketing sector. It's also at the heart of marketing practice because it's where one of the most important issues for marketers originates (Morgan et al., 2019). Marketers utilise the Internet not just to personalise and simplify their services, but also to reach clients who are geographically distant. Marketers may now use Facebook fan pages and apps to promote their products more easily and at a lower cost thanks to technological advancements. Organizations must obtain information on specific consumers in order to make successful marketing decisions. Prior knowledge of customer behaviour provides a guidance, but monitoring environmental changes is critical for good decision-making (Micu et al., 2017). Marketers now have new chances due to technological advancements and the usage of mobile phone applications. Even though some see only the value of consumer psychology and social media in marketing, others are confused about which tools to employ. Sentiment analysis, for example, is a useful tool for restaurants looking to better understand how their consumers feel about their offerings (Micu et al., 2017). The gender of the consumer has little impact on restaurant evaluations, according to this study. The customer's destination, on the other hand, has an impact on ratings. Customers who reside in another state give the restaurant lower ratings than those who live in the same state. This conclusion shows that while making marketing decisions, cultural and social aspects

should be taken into account (Micu et al., 2017). One of the benefits of the Internet is that everyday issues may be handled fast and effortlessly. Furthermore, with technological advancements, consumer awareness takes on a new form. Consumers may now access a variety of products and services and compare them, particularly with the assistance of social media. Furthermore, with the support of technology media, businesses can better study customer behaviors and habits (Efendioglu and YD, 2016). Companies have undergone a great deal of change in a short amount of time since the beginning of the twenty-first century, especially to the opportunities afforded by technological advancements. Companies are increasingly using information and communication technology to introduce their products and get to know their consumers (Efendioglu and YD, 2016). Tablets, smartphones, and other electronic gadgets have grown commonplace as the rate of technical advancements has accelerated. People who use social media and e-mails, on the other hand, have been using digital media for making a purchase. People can now browse the web considerably more easily thanks to search engines. Furthermore, the approach of making a purchase decision has become much easier, thanks to promotional ads and product reviews that assist buyers in making their decisions. The most significant distinction between digital and conventional marketing is that data is appropriately utilized in digital marketing (Efendioglu and YD, 2016). The two most significant foundations for digital marketing are search engine marketing (SEM) and search engine optimization (SEO). Although it takes a long time to build an SEO infrastructure, it is more permanent and pays attention to reputation maintenance and brand perception. On the other hand, if businesses want to distribute their message in a short amount of time, SEM is the way to go. All social media actions are watched by search engine algorithms. The more engaged a company is on social media, the better it ranks in search engine results. Digital media may be used to reach big target populations (Efendioglu and YD, 2016). The ideas needed to support differentiation strategy have long used to be at the core of the concept marketing theory and practice. The growth in interest in marketing this century linked with the growing ineffectiveness of mass advertising techniques. Markets were getting more competitive, and customers were becoming more knowledgeable; providers required a deliberate response to buyers who were growing more competent and selective (Sharp and Byron, 1991). Marketing and strategic planning texts have defined differentiation as "making the product look distinct," ensuring that the consumer perceives the offering as innovative in some way. The insufficiency of this description is pretty

clear, because each new item must logically be different in some manner in order for buyers to buy it (Sharp and Byron, 1991). The idea of market character or pricing policies lies at the heart of competitive marketing strategy. The degree of market segmentation how much a market varies from a goods market are described by market nature. The techniques employed by the market's enterprises have a considerable impact on the market's character (Sharp and Byron, 1991). As a consequence of the rapid growth of technology and the introduction of the Internet, consumer needs vary over time, making it challenging for companies to alter their marketing promotion plan and remain inventive and successful in satisfying their customers' expectations (Urdea et al., 2021). Customer demands led to real-life customer experiences and intriguing and engaging brand touchpoints. It is critical for individuals to interact with companies, goods, and facilities before making a purchasing choice. Also, rather than mass advertising, experiential marketing is the greatest way to advertise specialized items. In brief, marketers must understand their target audiences and outline their goals, as well as make each action unique and individualized while utilizing technology to its full potential (Urdea et al., 2021). The COVID-19 pandemic has prompted major changes in marketing, particularly in communication strategy, prompting businesses to rethink their approaches and build experiential advertising strategies in order to retain a stable income stream. Consumer opinions of marketing have shifted dramatically, with an increasing number of firms realizing the need of using digital technologies to create memorable customer experiences. Brands nowadays demand genuine emotional experiences that engage the online and physical worlds, resulting in increased consumer loyalty and retention (Urdea et al., 2021). Social media is now considered an essential component of marketing tactics, resulting in a paradigm shift in the industry. According to reports, social media marketing has exploded in popularity in the last five years and is expected to continue to do so in the future. Despite the large potential and purpose of organizations to adopt social media marketing approaches, there are still obstacles to the successful execution of these new promotional campaigns (Pour et al., 2021). Mainly because of the fact that academics and managers are interested in social media marketing, most have centred on the qualities and activities necessary to execute social media marketing or the crucial success aspects of social media marketing. Furthermore, research on social media marketing has focused less on identifying and prioritizing success criteria and best practices for implementing a social media marketing campaign, which was the primary goal of the present study (Pour et al., 2021). There are several

instances of marketing resources and scenarios in which pooling resources might give the opportunity to a firm. For example, as in many partnerships, the retail outlets given by a relationship partner may allow a business to obtain a geographic footprint of crucial areas that would not be readily available outside of the partnership (Morgan et al., 1999).

Research Question and their Relevance

- Which promotion has the greatest effect on sales?
- Is the new store better than old store for new product introduce/promotion?
- Which place would be better for new product promotion?
- What size of market would be best for new product introduce?

Since the dataset is about marketing and the fast food chain plans to add new item(but they are unable to decide which promotion is the best) so based on the dataset, I have made some questions(to solve their problems) and I have solved this question and gave some suggestion about which promotion ,which place and what size of market they can use for promote new product.

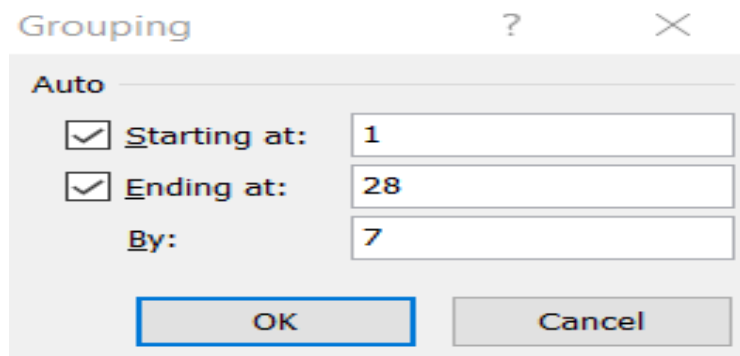
Section 2: Methodology

I am going to use Excel for data analysis. At first i have opened the data set in the Excel then i have started to analyse the data to create useful information. I have used simple sort for making analysis easy ,we can sort from smallest to largest and largest to smallest. I have also used the filters , what filter does actually is it narrows down the data set means if you want to show some specific records from your dataset it will only show that data. I have also used the group,

At first, I have selected the row and then right click on the mouse then you can see the option for grouping,



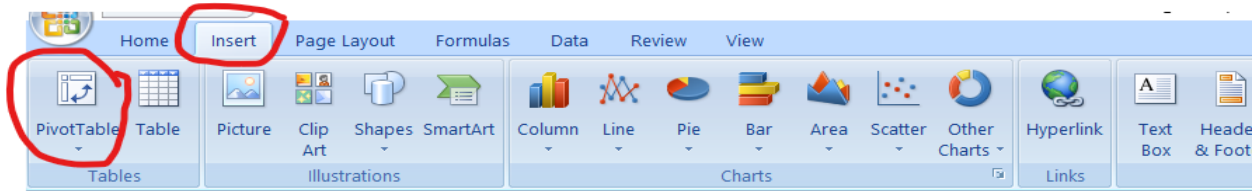
then select the group and you will find another option,



From this option i have selected the starting point and ending point and by.

Then its group like (1-7),(8-14) and so on. That's how i have grouped the store in age and found the effective age group for most sales. The same way, I have grouped the location of the store to find which location had highest sales after i have this group then i have analysed only that group to find the exact location of the store which had most sales.

For all of this calculation i have used the PivotTable , by using this we can easily calculate the data. So we can say a PivotTable is a feature that makes the calculations easy. At first i have



The image shows the Microsoft Excel ribbon with the 'Insert' tab selected. The 'PivotTable' icon in the 'Tables' group is circled in red. Below the ribbon, a data table is displayed with columns A through G and rows 1 through 14.

	A	B	C	D	E	F	G
1	MarketID	MarketSize	LocationID	AgeOfStore	Promotion	week	SalesInThousands
2	1	Medium	1	4	3	1	33.73
3	1	Medium	1	4	3	2	35.67
4	1	Medium	1	4	3	3	29.03
5	1	Medium	1	4	3	4	39.25
6	1	Medium	2	5	2	1	27.81
7	1	Medium	2	5	2	2	34.67
8	1	Medium	2	5	2	3	27.98
9	1	Medium	2	5	2	4	27.72
10	1	Medium	3	12	1	1	44.54
11	1	Medium	3	12	1	2	37.94
12	1	Medium	3	12	1	3	45.49
13	1	Medium	3	12	1	4	34.75
14	1	Medium	4	1	2	1	39.28

Selected all the data and then selected the insert option you can see the insert option in red circle and then select the PivotTable, that's how i have generated the PivotTable and to make calculation you will find another option after click the PivotTable see below,

PivotTable Field List

Choose fields to add to report:

- ☐ MarketID
- ☐ MarketSize
- ☒ **LocationID**
- ☐ AgeOfStore
- ☒ **Promotion**
- ☒ **week**
- ☒ **SalesInThousands**

Drag fields between areas below:

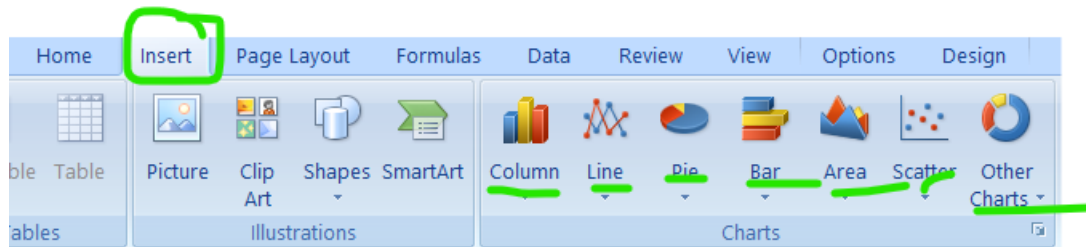
Report Filter: week

Column Labels: Promotion

Row Labels: LocationID

Values: Sum of SalesInThousands

By using this field list you can make your calculation easily. After you select your criteria then it will automatically generate the result ,to see the clear view of your result you can use different graph ,I have also used different graph to show my result.



To show your result in graph you can click on insert which you can see in the picture (green circle) then you have more option you can use column, line, pie and so on.

Section 3: Descriptive analytics and Statistical analysis with visualizations

My first question is which promotion has the greatest effect on sales and the second question , is

Sum of SalesInThousands	Promotion			
AgeOfStore	1	2	3	Grand Total
1-7	5814.12	5184.35	5219.28	16217.75
8-14	2529.28	2530.15	3110.77	8170.2
15-21	935.7	483.79	1040.9	2460.39
22-28	713.93	699.64	1037.57	2451.14
Grand Total	9993.03	8897.93	10408.52	29299.48

Table: 1

the new store better than old store for new product promotion, to answer these two questions

I have analysed the data and got this result which you can see from the table, so in this table there are three promotions and the age of the store in groups and sales in thousand. The highest sales recorded in the promotion-3 (10408.52) and the second highest recorded for promotion-1 (9993.03) and last one (8897.93) for promotion-2.

On the other hand, in case of age of store lowest sales recorded in 8-14 years old of store which is (8170.2) and the best sales reached (16217.75) for the age group of 1-7years.

To see the clear view of the result I have generated a bar graph,

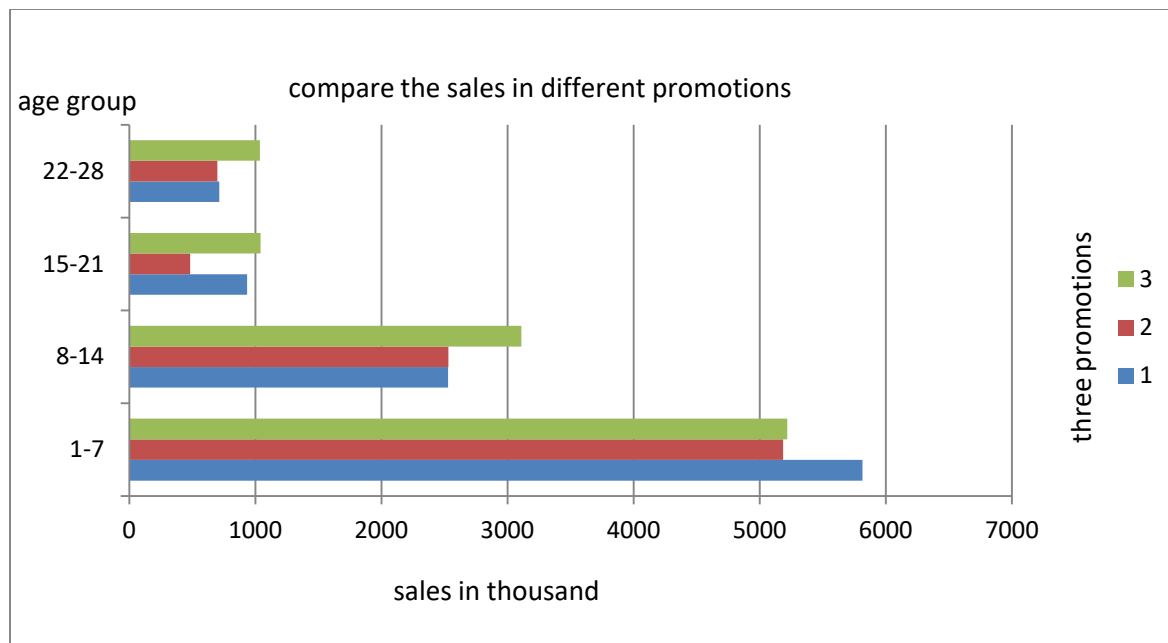


Figure 1: Compare the sales in different promotion and in age group.

So from the table and bar graph we can say the most effect on the sales in promotion-3 and the age group of 1-7 has the highest sales. To promote the new product in the menu the fast-food chains can use the promotion-3 and the store of age between 1-7years because from the analysis they have recorded the highest sales.

My third question is which place would be better for new product promotion for this I have analysed the dataset and generated a table,

week (All)				
Sum of SalesInThousands LocationID	Promotion			Grand Total
	1	2	3	
1-20	814.38	603.04	407.87	1825.29
101-120	262.4		1219.87	1482.27
201-220	2162.44	1601.41	3057.18	6821.03
221-240	347.68	308.8		656.48
301-320	940.85	812.97	208.47	1962.29
401-420	444.13	1469.37	1016.78	2930.28
501-520	813.3	782.31	588.24	2183.85
601-620	801.94	629.79	1236.79	2668.52
701-720	1022.8	339.98	986.96	2349.74

801-820	680.02	399.86	1037.75	2117.63
901-920	1703.09	1950.4	648.61	4302.1
Grand Total	9993.03	8897.93	10408.52	29299.48

Table: 2

They added their new product in different location to find which location had highest sales I have grouped the locationID and analysed it and find that the location 201-220 has the most sales (6821.03). I also generated the graph to see the clear picture , from the bar graph you can easily understand that the most sales recorded in 201-220 locationID .

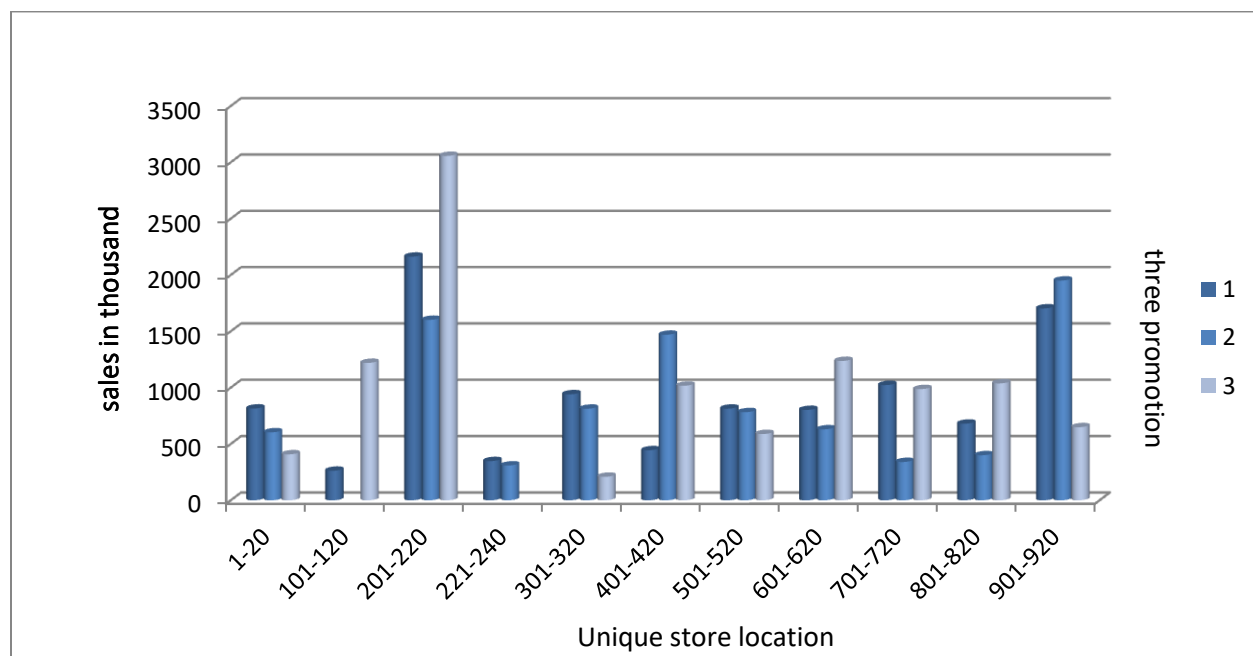


Figure 2: Compare the sales recorded in different location.

From this graph we can say the highest sales group of location were 201-220.

I have collected the group of highest sales now I have to find exact location where the highest sales recorded ,so I can analyse only 201-220 group location to find where exactly the most sales.

I have generated a table below,

week	(All)			
Sum of SalesInThousands	Promotion			Grand
LocationID	1	2	3	Total
201			325.23	325.23
202	349.66			349.66
203			333.36	333.36
204		332.63		332.63
205			348.27	348.27
206			336.57	336.57
207			344.65	344.65
208			354.31	354.31
209	380.36			380.36
210	357.05			357.05
211		331.79		331.79
212			331.08	331.08
213		307.28		307.28
214	349.5			349.5
215		321.62		321.62
216			344.09	344.09
217			339.62	339.62
218	364.5			364.5
219		308.09		308.09
220	361.37			361.37
Grand Total	2162.44	1601.41	3057.18	6821.03

Table: 3

From this table you can see the the highest sales recorded 380.36 in the 209 location for promotion-1 . So compare to other location 209 had the highest sales. But if you look at the graph the promotion-3 was successful in more than one locations.

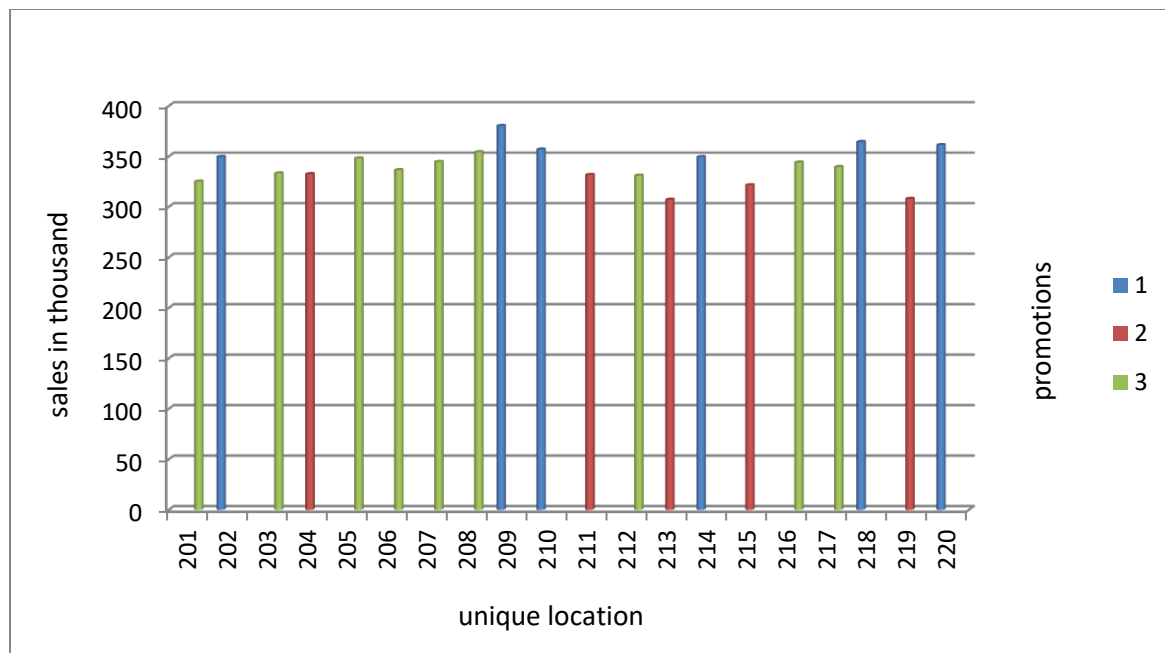


Figure 3: Compare the highest sales in different location.

So we can target those locations where the most sales were recorded.

The final question is what size of market would be best for product promotion?

To find this I again analysed the data and generated the table,

week (All)				
Sum of SalesInThousands	Promotion			Grand Total
MarketSize	1	2	3	
Large	4213.21	3860.61	3705.79	11779.61
Medium	4576.57	4224.35	5274.39	14075.31
Small	1203.25	812.97	1428.34	3444.56
Grand Total	9993.03	8897.93	10408.52	29299.48

Table: 4

In the dataset there were three types of market small, medium and large. For large market total sales recorded (11779.61) ,For the medium size market it was recorded (14075.31) and for small

market it was only (3444.56) from this statistics, I can say the highest sales recorded in medium size market.

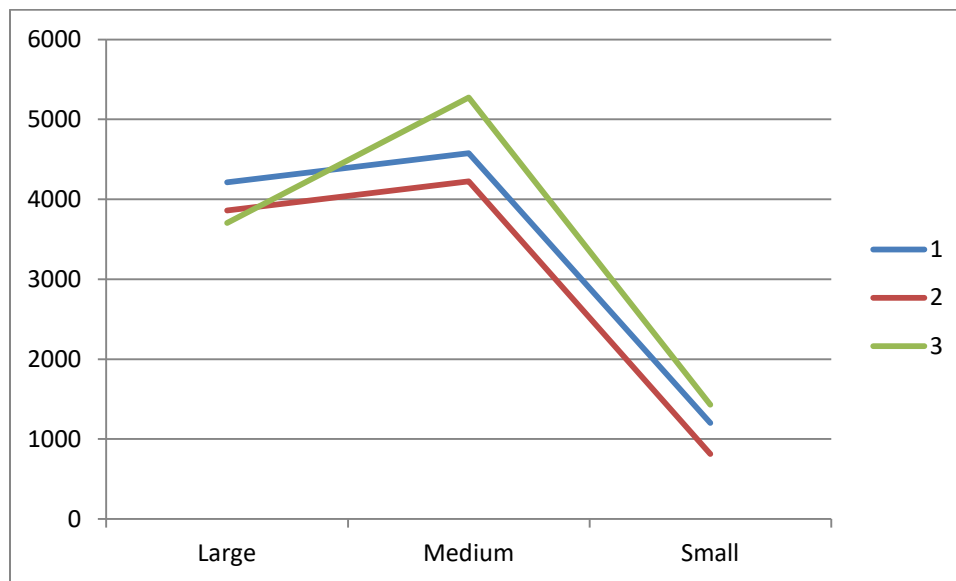


Figure 4: Sales in different market size.

So from this line graph you can see the small market size had very low sales compare to others two market. The large market had good sales but the best sales recorded in medium size market.

After analysis we can say that to promote new product the medium size market is the best option.

Section 4: Key insights

Overall, we can say that to promote a new product they can use the promotion-3 since the promotion-3 had highest sales. They can use the new store for product promotion as you have seen from analysis the age of store 1-7years had highest sales. They can use medium size market and those location where the best sales were recorded.

Section 5: Learning reflections

I have learnt so many things by doing this assignment. This assignment was about marketing data analysis. So I have learnt how to analysis the data and find the key information. I have learnt how to use different tools and techniques to do analysis. I learnt Excel, in the excel there are so many option for instance,

- Sorting
- Filtering
- PivotTable
- Grouping
- Filter in PivotTable
- Different Graph
 - Bar Graph
 - Line Graph
 - Pie Chart

Some basic tools like alignment, text box , text size, text colours and so on.

I have also learnt how to add pictures and graphs in the ms word. This assignment not only educative but also interesting.

Section 6: References

Efendioglu, Y.D., 2016. Travel from traditional marketing to digital marketing. Global Journal of Management and Business Research: E, 8.

Micu, A., Micu, A.E., Geru, M. and Lixandriou, R.C., 2017. Analyzing user sentiment in social media: Implications for online marketing strategy. Psychology & Marketing, 34(12), pp.1094-1100.

Morgan, N.A., Whitler, K.A., Feng, H. and Chari, S., 2019. Research in marketing strategy. Journal of the Academy of Marketing Science, 47(1), pp.4-29.

Morgan, R.M. and Hunt, S., 1999. Relationship-based competitive advantage: the role of relationship marketing in marketing strategy. *Journal of Business Research*, 46(3), pp.281-290.

Pheng, L.S. and Ming, K.H., 1997. Formulating a strategic marketing mix for quantity surveyors. *Marketing intelligence & planning*.

Pour, M.J., Hosseinzadeh, M. and Mahdiraji, H.A., 2021. Exploring and evaluating success factors of social media marketing strategy: a multi-dimensional-multi-criteria framework. *foresight*.

Sharp, B., 1991. Competitive marketing strategy: Porter revisited. *Marketing Intelligence & Planning*.

Theodosiou, M. and Katsikeas, C.S., 2001. Factors influencing the degree of international pricing strategy standardization of multinational corporations. *Journal of International Marketing*, 9(3), pp.1-18.

Urdea, A.M. and Constantin, C.P., 2021. Experts' Perspective on the Development of Experiential Marketing Strategy: Implementation Steps, Benefits, and Challenges. *Journal of Risk and Financial Management*, 14(10), p.502.

Yudelsohn, J., 1999. Adapting McCarthy's four P's for the twenty-first century. *Journal of Marketing Education*, 21(1), pp.60-67.