

Fwd: UKS31633

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1 **DATA DRIVEN DECISION FOR BUSINESS**

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Task 1: Introduction and project plan

The key purpose of the report is analysing whether the marketing campaign formed a positive impact on the performance of sales in the UK. For attaining this purpose this report will target on using PPDAC project framework using five key stages – problem identification, planning, data presentation, analysis and conclusion.

In order to complete this project first the key problems presented in the given dataset will be highlighted along with planning how to correct or deal with those mistakes. Following the data correction data will be presented with the help of relevant tables and using relevant explanatory statistical methods (such as ranges, min and max, averages and others) analysis will be performed. In this analysis process data charting will also be performed using relevant graphs (such as bar chart, column chart, trend evaluation and others).

In this process, the use of stated PPDAC framework of data analysis will be helpful to maintain a proper flow of activities. This is because the provided dataset consist a large amount of data and also certain errors were present which could be effectively dealt by using the planning aspect of the framework. Following that, using this framework will also support in identifying strategic KPIs which could be used to measure and maintain the data effectiveness. Further, this framework will be support in identifying the key processes of analysis which could be used in the process for answering the given question appropriately.

The KPIs of BIJ's own business performance are-

- Change % in the sales volume and value;
- Variation in overall market demand;
- Trend analysis of demand of different product subtypes in different markets; and
- Overall influence of marketing campaign in the sales growth.

In this scenario improved analytics will be effective in enabling the improvements against these KPIs as such enhanced analytics would deliver a proper means in assessing the existing organisational performance and compare the same with its past results. Following that, using statistical analytic indicators would be effective in terms of determining the underlying market trend in relation to different product subtypes, market and period.

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Task 2: Data quality issues and remedies

In data analysis process certain key generic problems could be identified and those could be highlighted as follows-

Generic problems	Process of identification	Different options to resolve those issues
Spelling error	Using data categorisation process	Upon recognising the error adopt corrective measures like using functions or manual changes (Qureshi, 2022)
Incomplete data	Identifying fields with null value (Yellowfin, 2022)	Adopting proper data validation process
Data duplicity	Determining nearly or exactly same data points and assess their accuracy (Memon, 2023)	Cross checking the data points
Data inconsistency	Recognising the points of variation	Implementing proper data sorting techniques and tools
Human	Comparing acquired data from different	Use of automation in data entry or

errors	points (Reno, 2023)	performing periodical review with a single point access
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Referring to the developed Appendix 1 number of data problems could be identified with the given dataset of BIJ. Spelling errors, currency variations and negative sales value are the key problems found from the provided dataset. In order to identify these problems table segmentation of categorisation has been used which helped in identifying the existing mismatches, such as spelling errors for products, value changes and others.

In this process, the values consisted with negative sales figures and sales values are avoided or excluded from the estimation. Following that the misspelled items are replaced with correct spellings and in order to maintain currency consistency the values provided in USD form are transformed to GBP using the present rate of currency exchange.

Task 3: Data analysis and commentary

	1 2018		2019		2020		Total Sum of Sales Volume	Total Sum of Sales Value
Row Labels	Sum of Sales Volume	Sum of Sales Value	Sum of Sales Volume	Sum of Sales Value	Sum of Sales Volume	Sum of Sales Value		
January	921	£11,30,076	757	£8,74,614	671	£7,94,774	2349	£27,99,464
February	961	£11,77,381	874	£9,83,676	815	£9,38,390	2650	£30,99,447
March	885	£10,59,922	870	£9,48,787	795	£9,09,133	2550	£29,17,842
April	747	£8,50,250	644	£7,62,149	480	£5,94,548	1871	£22,06,948
May	763	£9,77,122	787	£9,29,960	908	£10,60,178	2458	£29,67,260
June	1031	£13,45,447	1333	£17,75,571	1234	£14,46,306	3598	£45,67,324
July	754	£9,08,012	859	£10,28,322	854	£9,63,146	2467	£28,99,480
August	767	£8,90,290	793	£9,32,342	705	£7,83,033	2265	£26,05,665
September	1144	£13,80,851	1093	£12,30,021	956	£11,51,916	3193	£37,62,789
October	587	£6,89,467	560	£6,28,350	501	£5,60,401	1648	£18,78,218
November	689	£7,92,090	598	£6,77,058	568	£6,37,605	1855	£21,06,753
December	1077	£12,74,698	868	£10,20,628	533	£6,61,289	2478	£29,56,615
Grand Total	10326	£1,24,75,608	10036	£1,17,91,479	9020	£1,05,00,719	29382	£3,47,67,806
% change in sales volume and value - by years	-	-	-3%	-5%	-10%	-11%		
Max	1144	£13,80,851	1333	£17,75,571	1234	£14,46,306	3598	£45,67,324
Min	587	£6,89,467	560	£6,28,350	480	£5,60,401	1648	£18,78,218
Range	557	£6,91,384	773	£11,47,222	754	£8,85,904	1950	£26,89,107
Average	861	1039634	836	982623	752	875060	2449	2897317

Standard Deviation	163	215265	204	285644	213	249143	524	696566
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Table A

(Source: Self-created)

¹ The above Table (Table A) showed the sales volume and value of the company over the considered analysis period on a monthly basis. In 2018 the company reported the maximum sales in September whereas for 2019 and 2020 the sales of the firm observed to the highest in June. In 2018 and 2019 in October the organisation witnessed the lowest sales whereas in 2020 it recorded the lowest sales in April. The table also highlights that the over the years the sales of the company declined significantly as compared to 2019 the sales volume reduced by 10% in 2020 whereas a fall of 11% observed for the total sales value.

	Access sory		Ankl e brac et		Brac elet		Hair ban d		Neck lace		Ring	
Row Lab els	Sum of Sales Volu me	Sum of Sales Value	Sum of Sale s Volu me	Sum of Sal es Val ue	Sum of Sale s Volu me	Sum of Sales Value	Sum of Sale s Vol um e	Sum of Sales Value	Sum of Sales Volu me	Sum of Sales Value	Sum of Sale s Vol um e	Sum of Sales Value
201 8	15	£21,311	10	£2,500	2572	£22,63,345	5029	£69,69,882	1732	£22,79,355	968	£9,39,215
1-3	9	£11,212			662	£5,96,980	1361	£19,18,523	470	£5,97,604	265	£2,43,061
4-6	1	£911	10	2500	611	£5,40,007	1195	£17,35,817	488	£6,72,402	236	£2,21,183
7-9	3	£5,365			701	£6,23,076	1270	£17,09,124	455	£5,98,269	236	£2,43,321
10-12	2	£3,823			598	£5,03,281	1203	£16,06,419	319	£4,11,080	231	£2,31,650
201 9	121	£2,16,503			3653	£32,20,874	4191	£59,43,248	1147	£15,62,377	924	£8,48,477
1-3	2	£4,147			940	£7,99,770	1000	£13,73,347	316	£3,96,779	243	£2,33,034
4-6	11	£20,018			943	£8,80,926	1314	£19,56,962	275	£3,86,253	221	£2,23,521
7-9	91	£1,56,417			962	£8,40,814	1110	£15,52,814	284	£3,73,281	298	£2,67,359
10-12	17	£35,921			808	£6,99,364	767	£10,60,124	272	£4,06,064	162	£1,24,563
202 0	440	£7,93,713			4661	£43,63,028	2346	£32,19,163	1121	£17,22,204	452	£4,02,611
1-3	81	£1,39,675			1051	£8,85,349	678	£9,81,658	367	£5,61,620	104	£73,995
4-6	138	£2,54,492			1363	£12,31,852	640	£9,22,110	383	£5,93,409	98	£99,168
7-9	112	£2,02,			143	£14,4	508	£6,65,9	292	£4,30,	170	£1,49,

		292			3	9,456		02		919		526
10-12	109	£1,97,255			814	£7,96,371	520	£6,49,492	79	£1,36,256	80	£79,921
Grand Total	576	£10,31,528	10	£2,500	10886	£98,47,247	11566	£1,61,32,293	4000	£55,63,936	2344	£21,90,302
Max	138	254492	10	2500	1433	1449456	1361	1956962	488	672402	298	267359
Min	1	911	10	2500	598	503281	508	649492	79	136256	80	73995
Range	137	253580	0	0	835	946175	853	1307470	409	536146	218	193363
Average	48	85961	10	2500	907	820604	964	1344358	333	463661	195	182525
S.D.	53	96191	-	-	272	279121	322	470782	112	147416	71	71605

Table B

(Source: Self-created)

Table B focused on showing the category performance of the company over the focused analysis period on a quarterly basis. The table highlights that the maximum number of accessories sold by the firm in second quarter of 2020 and bracelet in third quarter of 2020. Although, maximum number of hairbands sold by the firm in 2018, the maximum sales revenue from hairband achieved by it in the second quarter of 2019. On the other hand the lowest sales volume and sales value in hairbands, i.e., one of the major revenue generating products, witnessed by the organisation in third and fourth quarters of 2020, respectively.

	Sum of Sales Volume				Sum of Sales Value			
Row Labels	Japan	United Kingdom	US	USA	Japan	United Kingdom	US	USA
2018	4168	2303		3855	£61,21,066	£19,33,006		£44,21,536
1-3	1188	577		1002	£17,46,972	£4,70,865		£11,49,542
4-6	1014	664		863	£15,39,189	£5,67,073		£10,66,558
7-9	1032	614		1019	£15,04,393	£5,26,319		£11,48,441
10-12	934	448		971	£13,30,512	£3,68,748		£10,56,995
2019	4085	2247		3704	£60,02,612	£17,94,417		£39,94,451
1-3	892	601		1008	£12,69,047	£4,56,562		£10,81,469
4-6	1201	567		996	£18,76,260	£5,08,052		£10,83,369
7-9	1204	640		901	£17,09,749	£5,02,576		£9,78,361
10-12	788	439		799	£11,47,556	£3,27,228		£8,51,252
2020	2782	2583	478	3177	£41,32,431	£22,59,426	£5,10,340	£35,98,522
1-3	747	576	478	480	£11,74,799	£4,65,340	£5,10,340	£4,91,818
4-6	824	883		915	£12,67,487	£7,53,063		£10,80,481
7-9	675	725		1115	£9,66,392	£6,72,868		£12,58,835
10-12	536	399		667	£7,23,753	£3,68,155		£7,67,388
Grand Total	11035	7133	478	10736	£1,62,56,109	£59,86,849	£5,10,340	£1,20,14,508
Max	1204	883	478	1115	1876260	753063	510340	1258835

Min	536	399	478	480	723753	327228	510340	491818
Range	668	484	0	635	1152507	425835	0	767018
Average	920	594	478	895	1354676	498904	510340	1001209
S.D.	217	132	-	176	336841	123425	-	207599

Table C:

(Source: Self-created)

The above Table C compared the sales condition of the company over the period among different markets on a quarterly basis. In Japan the company witnessed the maximum sales volume in 3rd quarter of 2019 whereas registered the minimum sales in 4th quarter of 2020. In the UK market the highest and lowest sales occurred in 2nd and 4th quarters of 2020, respectively. For the USA market the lowest sales registered in quarter 1 of 2020 whereas the highest sales generated in quarter 3 of 2020.

1

Task 4: Data charting and commentary

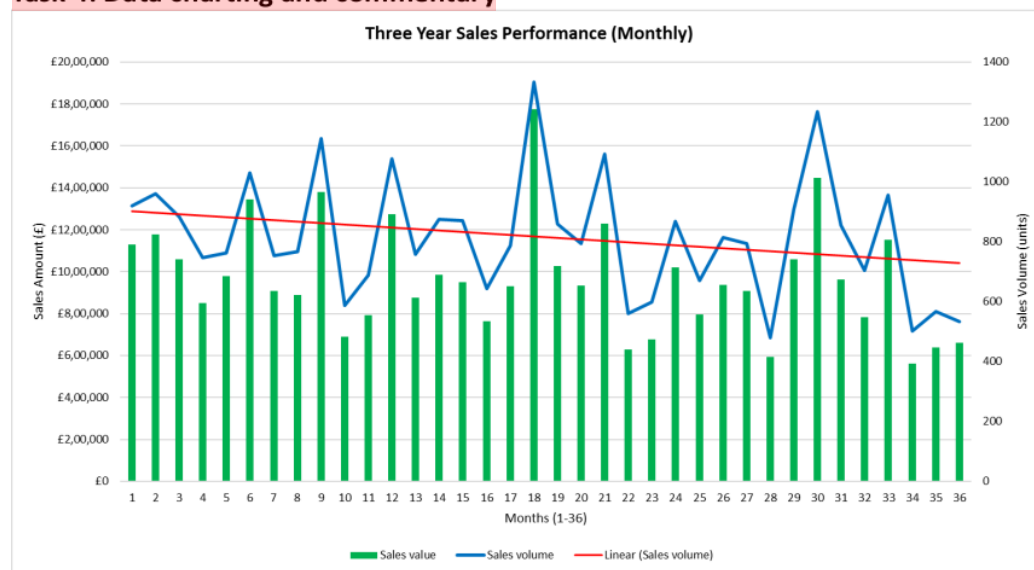


Chart A

1

(Source: Self-created)

From the above Chart A, a comparison of sales value is identified considering the focused 36 months. The trend line highlighted a declining slope in the overall sales aspect of the company. This means that the overall sales performance of the company reduced significantly over the past 36 months. Here the most sales achieved by the company in 18th month.

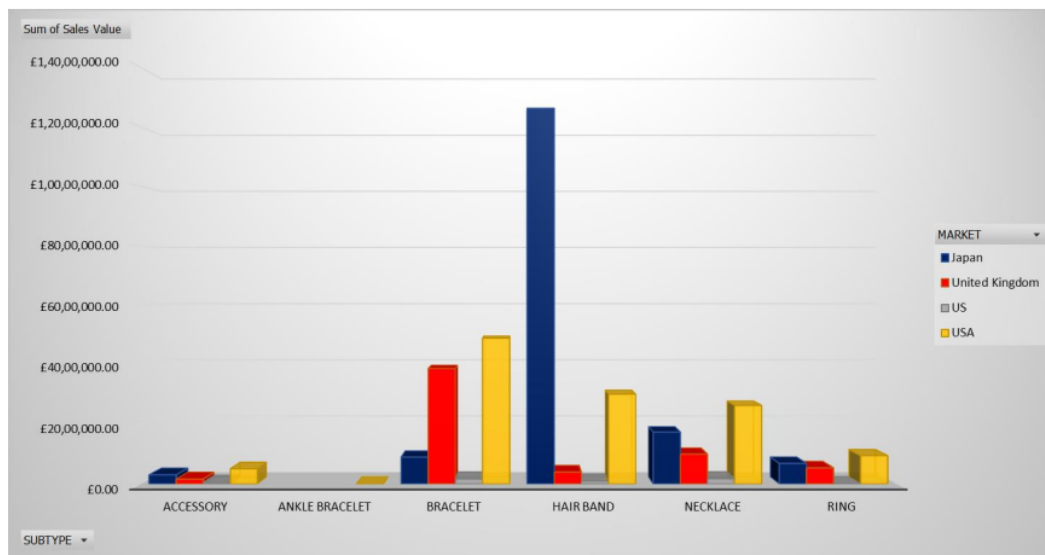


Chart B

(Source: Self-created)

The above Chart B showed the comparison of category performance level between the markets. In Japan the firm observed the most sales of hairband followed by necklace and ring. In the UK market the company recorded a strong demand for bracelet, necklace and ring. Apart from that, in the USA market necklace hold the highest demand for the organisation compared to other markets.

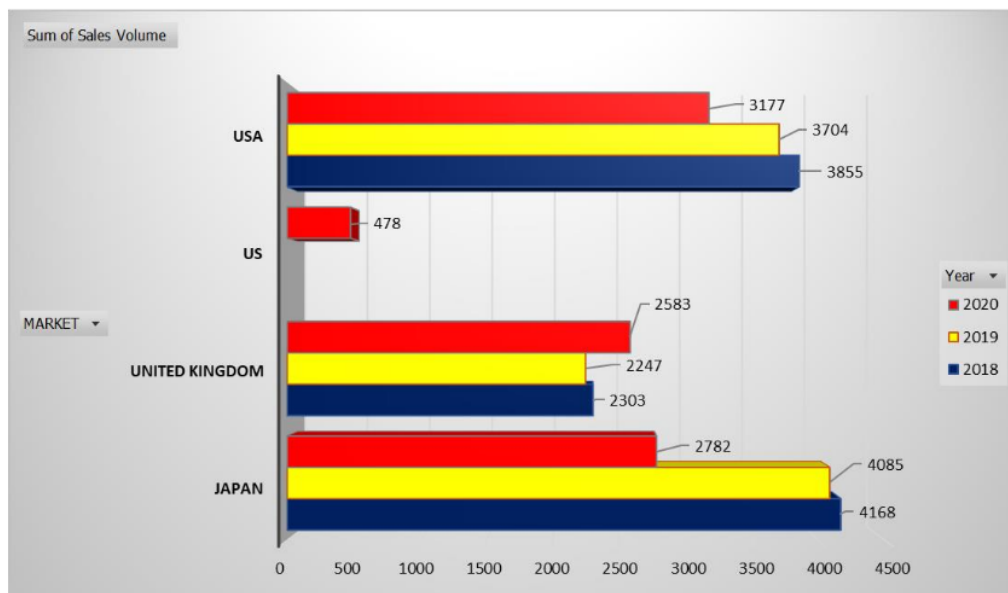


Chart C

(Source: Self-created)

Based on above Chart C the impact of marketing campaign in the UK could be observed. In 2020 except the UK market, the other markets showed a strong declining trend. Although the UK showed a decline in performance in 2019, following the application of the marketing campaign in 2020 the overall sales showed a strong performance growth.

Task 5: Conclusions and recommendations

The analysis of the dataset showed a declining business performance of BIJ. The major decline in its largest market, i.e., Japan, is a key concerning factor for the company and it denotes an operations decline as well. Further, a fall in the overall sales performance in the USA could also be identified for the focused organisation. However, the identified growth in sales of the UK confirms that the used marketing campaign was a success for the company and hence it is needed to be implemented by the company in other markets to boost its sales.

In this regard, the following recommendations could be made to the management of BIJ-

- a. Developing suitable strategic approach for developing effective marketing strategies in the other markets of the company. This will help the firm to improve its sales performance.
- b. The jewellery market is highly competitive and it is essential for the companies to comply with the changing market demand. Hence, it could be recommended to the organisation to incorporate strategic market analysis process to determine the overall needs of the markets in Japan and USA to introduce product lines accordingly.
- c. It is also recommended to the company to adopt suitable business data analytics in its data acquisition, presentation and analysis process for securing the long-term growth.

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Appendices

Appendix 1: Correction sheet

	A	B	C	D	E	F	G	H	I
1	Serial Numbe	Market	Year	Month	Subtype	Sales Volum	Sales Value	Required corrective	Founded error
2	a.	USA	2018	1	Accessory	-1	-£2,129	Out of control	Negative sales cannot be formed
3	b.	USA	2019	11	Accessory	-1	-£1,660	Out of control	Negative sales cannot be formed
4	c.	USA	2020	4	Bracelet	153	-£167,972	Out of control	Negative sales cannot be formed
5	d.	Japan	2019	2	R+D94ng	14	£14,634	Under control	This is a spelling mistake and it should be corrected to 'Ring'
6	e.	USA	2020	11	Rng	12	£13,409	Under control	This is a spelling mistake and it should be corrected to 'Ring'
7	f.	USA	2030	11	Necklace	26	£36,247	Out of control	The year cell shows 2030 which is not possible
8	g.	US	2020	2	Bracelet	212	USD 214,390	Under control	The USD value could to be converted to GBP
9	h.	US	2020	2	Ring	12	USD 9,489	Under control	The USD value could to be converted to GBP
10	i.	US	2020	2	Necklace	71	USD 121,498	Under control	The USD value could to be converted to GBP
11	j.	US	2020	2	Accessory	29	USD 60,303	Under control	The USD value could to be converted to GBP
12	k.	US	2020	2	Hair band	53	USD 62,958	Under control	The USD value could to be converted to GBP
13	l.	USA	2020	3	Bracelet	188	USD 189,640	Under control	The USD value could to be converted to GBP
14	m.	USA	2020	3	Ring	3	USD 3,848	Under control	The USD value could to be converted to GBP
15	n.	Japan	2018	4	Necklce	7	£12,601	Under control	This is a spelling mistake and it could be corrected to Necklace

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