

MARKETING ANALYSIS OF SPORTS EQUIPMENT

Marketing analysis of sports equipment with emphasis on conversions, customer engagement, and reviews. The project framework includes data preparation, visualization, and development of an interactive Power BI dashboard to evaluate product performance, derive insights, and support strategic marketing decisions.

Presented by: Soumyaditya Saha

Email: soumyaditya_2312res654@iitp.ac.in

Tool Used: Power BI, SQL, Python

Date: 02/08/2025



Overview

- ProductName
- ☐ Baseball Glove
 - ☐ Basketball
 - ☐ Boxing Gloves
 - ☐ Climbing Rope
 - ☐ Cycling Helmet
 - ☐ Dumbbells
 - ☐ Fitness Tracker
 - ☐ Football Helmet
 - ☐ Golf Clubs
 - ☐ Hockey Stick
 - ☐ Ice Skates
 - ☐ Kayak
 - ☐ Running Shoes
 - ☐ Ski Boots
 - ☐ Soccer Ball
 - ☐ Surfboard
 - ☐ Swim Goggles
 - ☐ Tennis Racket
 - ☐ Volleyball
 - ☐ Yoga Mat

Conversion

9.5 %

Conversion Rate

Social Media

90,79,276

Views

17,85,010

Clicks

4,14,122

Likes

Customer Reviews

3.7

Rating (Average)

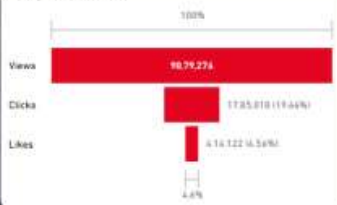
Conversion Rate by MonthNameShort



Conversion Rate by ProductName



Views, Clicks and Likes



Views, Clicks and Likes by MonthNameShort



Rating (Average) by MonthNameShort



Rating (Average) by ProductName



Customer Review Details

- ProductName
- ☐ Baseball Glove
 - ☐ Basketball
 - ☐ Boxing Gloves
 - ☐ Climbing Rope
 - ☐ Cycling Helmet
 - ☐ Dumbbells
 - ☐ Fitness Tracker
 - ☐ Football Helmet
 - ☐ Golf Clubs
 - ☐ Hockey Stick
 - ☐ Ice Skates
 - ☐ Kayak
 - ☐ Running Shoes
 - ☐ Ski Boots
 - ☐ Soccer Ball
 - ☐ Surfboard
 - ☐ Swim Goggles
 - ☐ Tennis Racket
 - ☐ Volleyball
 - ☐ Yoga Mat

Country

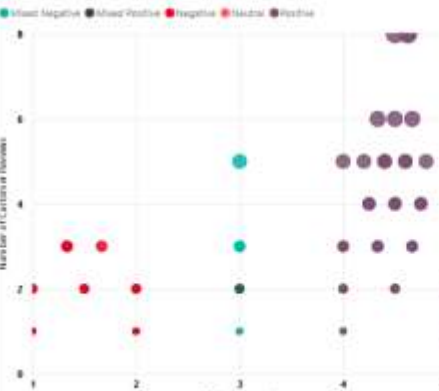
All

SentimentCate...

All



Rating (Average), Number of Customer Reviews and Number of Customer Reviews by Co...



ReviewDate	CustomerID	ReviewText	SentimentCategory	Rating
02 January 2024	08	Great quality, but could be cheaper.	Positive	4
02 January 2024	71	Not worth the money.	Negative	2
03 January 2024	90	Average experience, nothing special.	Negative	3
03 January 2024	75	Exceeded my expectations.	Positive	5
03 January 2024	40	Not worth the money.	Negative	2
03 January 2024	98	Product did not meet my expectations.	Negative	2
03 January 2024	11	Shipping was fast and the item was well-packaged.	Positive	4
03 January 2024	23	Service customer service, would not buy again.	Negative	1
04 January 2024	34	The quality is top-notch.	Positive	4
05 January 2024	88	Average experience, nothing special.	Mixed Negative	3
05 January 2024	18	I had a bad experience with this product.	Negative	1
06 January 2024	80	Customer support was very helpful.	Positive	4
07 January 2024	88	Excellent product, highly recommend.	Positive	5
07 January 2024	10	Product did not meet my expectations.	Negative	2
08 January 2024	2	Not worth the money.	Negative	2
08 January 2024	80	The quality is top-notch.	Positive	4
08 January 2024	12	Excellent product, highly recommend.	Positive	5
09 January 2024	2	Product did not meet my expectations.	Negative	2
11 January 2024	91	Great purchase, very satisfied.	Positive	4
12 January 2024	49	Average experience, nothing special.	Negative	2
13 January 2024	23	Shipping was fast and the item was well-packaged.	Positive	5
14 January 2024	82	Customer support was very helpful.	Positive	4
14 January 2024	81	Customer support was very helpful.	Positive	5
14 January 2024	12	I love this product, will buy again.	Positive	4
16 January 2024	14	Great quality, but could be cheaper.	Positive	4

Conversion Details

- ProductName
- ☐ Baseball Glove
 - ☐ Basketball
 - ☐ Boxing Gloves
 - ☐ Climbing Rope
 - ☐ Cycling Helmet
 - ☐ Dumbbells
 - ☐ Fitness Tracker
 - ☐ Football Helmet
 - ☐ Golf Clubs
 - ☐ Hockey Stick
 - ☐ Ice Skates
 - ☐ Kayak
 - ☐ Running Shoes
 - ☐ Ski Boots
 - ☐ Soccer Ball
 - ☐ Surfboard
 - ☐ Swim Goggles
 - ☐ Tennis Racket
 - ☐ Volleyball
 - ☐ Yoga Mat

8.5 %

Conversion Rate

Social Media

29,82,349

Views

4,58,345

Clicks

73,618

Likes

Customer Reviews

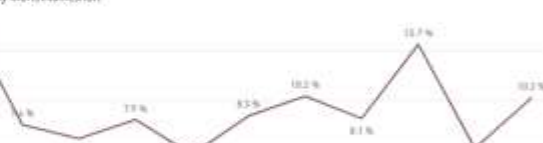
3.7

Rating (Average)

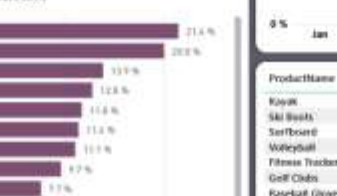
Number of Customer Journeys by Action



Conversion Rate by MonthNameShort



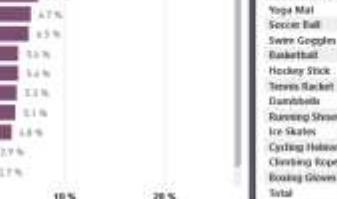
Conversion Rate by ProductName



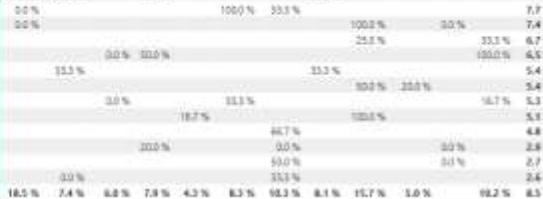
Conversion Rate by MonthNameShort



Conversion Rate by ProductName



Conversion Rate by MonthNameShort

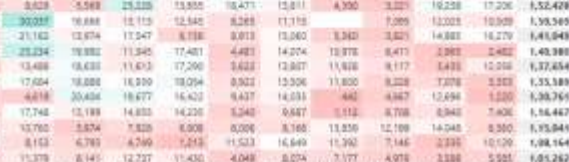
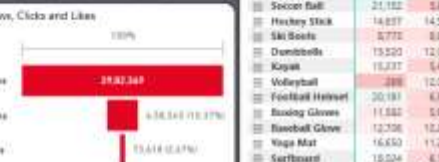


Social Media Details

- ProductName
- ☐ Baseball Glove
 - ☐ Basketball
 - ☐ Boxing Gloves
 - ☐ Climbing Rope
 - ☐ Cycling Helmet
 - ☐ Dumbbells
 - ☐ Fitness Tracker
 - ☐ Football Helmet
 - ☐ Golf Clubs
 - ☐ Hockey Stick
 - ☐ Ice Skates
 - ☐ Kayak
 - ☐ Running Shoes
 - ☐ Ski Boots
 - ☐ Soccer Ball
 - ☐ Surfboard
 - ☐ Swim Goggles
 - ☐ Tennis Racket
 - ☐ Volleyball
 - ☐ Yoga Mat



ReviewDate	CustomerID	ReviewText	SentimentCategory	Rating
02 January 2024	08	Great quality, but could be cheaper.	Positive	4
02 January 2024	71	Not worth the money.	Negative	2
03 January 2024	90	Average experience, nothing special.	Negative	3
03 January 2024	75	Exceeded my expectations.	Positive	5
03 January 2024	40	Not worth the money.	Negative	2
03 January 2024	98	Product did not meet my expectations.	Negative	2
03 January 2024	11	Shipping was fast and the item was well-packaged.	Positive	4
03 January 2024	23	Service customer service, would not buy again.	Negative	1
04 January 2024	34	The quality is top-notch.	Positive	4
05 January 2024	88	Average experience, nothing special.	Mixed Negative	3
05 January 2024	18	I had a bad experience with this product.	Negative	1
06 January 2024	80	Customer support was very helpful.	Positive	4
07 January 2024	88	Excellent product, highly recommend.	Positive	5
07 January 2024	10	Product did not meet my expectations.	Negative	2
08 January 2024	2	Not worth the money.	Negative	2
08 January 2024	80	The quality is top-notch.	Positive	4
08 January 2024	12	Excellent product, highly recommend.	Positive	5
09 January 2024	2	Product did not meet my expectations.	Negative	2
11 January 2024	91	Great purchase, very satisfied.	Positive	4
12 January 2024	49	Average experience, nothing special.	Negative	2
13 January 2024	23	Shipping was fast and the item was well-packaged.	Positive	5
14 January 2024	82	Customer support was very helpful.	Positive	4
14 January 2024	81	Customer support was very helpful.	Positive	5
14 January 2024	12	I love this product, will buy again.	Positive	4
16 January 2024	14	Great quality, but could be cheaper.	Positive	4



Navigating the Digital Marketplace

In today's highly competitive e-commerce landscape, standing out requires more than just great products. It demands strategic, data-driven decision-making to understand and engage customers effectively.

This analysis focuses on three critical components: product conversion funnels, social media effectiveness, and customer review sentiment.

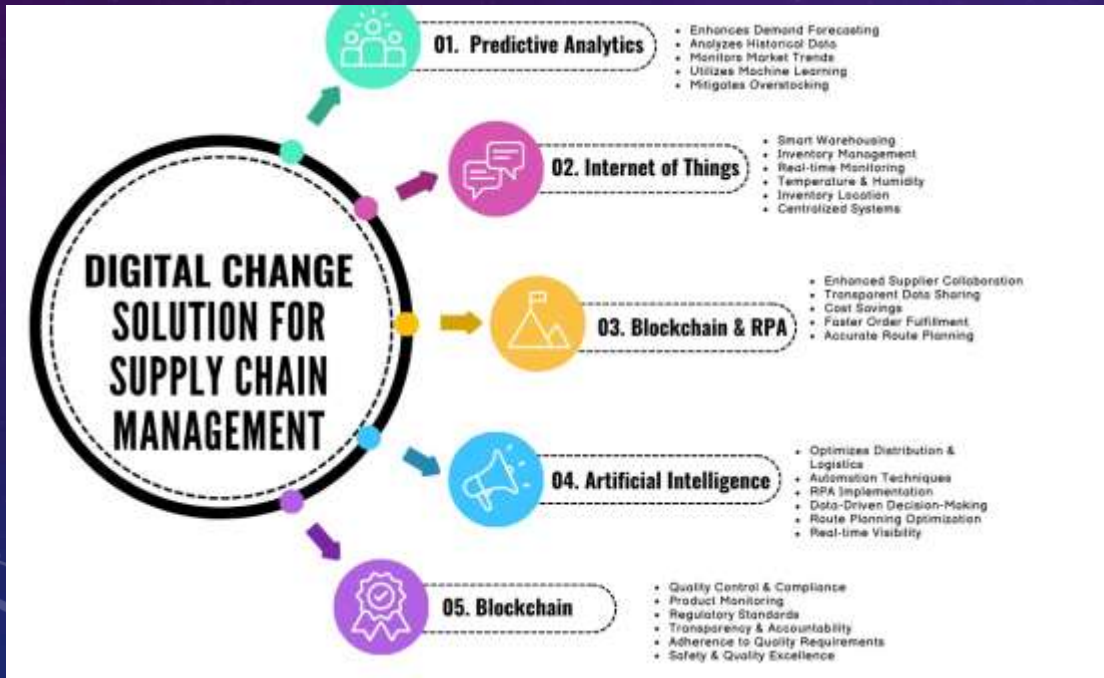
Our ultimate goal is to deliver actionable insights that optimize product performance and enhance marketing strategies for sustained growth.



Problem to Potential: Defining Our Path

The Challenge

Businesses often struggle with fragmented insights into how social media engagement, customer sentiment, and complex conversion journeys truly influence product performance. This lack of clarity hinders optimization efforts.



Key Objectives

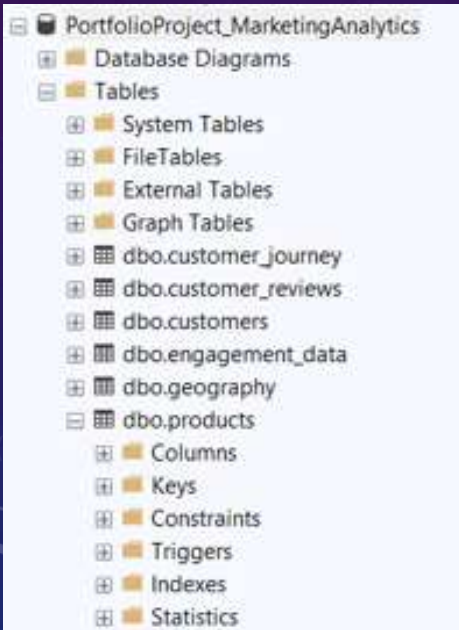
- Analyze product conversions across crucial stages (views, clicks, purchases) to identify bottlenecks.
- Evaluate social media effectiveness in driving engagement and traffic.
- Identify nuanced customer sentiment from reviews to uncover pain points and delights.
- Provide targeted, actionable business recommendations for sustainable growth and improved customer experience.

Our Data Foundation

Our analysis is built upon a robust, simulated e-commerce database that mirrors real-world scenarios, ensuring relevant and applicable data for strategic decision-making.

Primary Database

PortfolioProject_MarketingAnalytics hosted on SQL Server, serving as the central repository for all e-commerce data.



The screenshot displays the 'PortfolioProject_MarketingAnalytics' database in SQL Server Enterprise Manager. The left pane shows the database hierarchy: 'PortfolioProject_MarketingAnalytics' is expanded, revealing 'Database Diagrams' and 'Tables'. Under 'Tables', there are 'System Tables', 'FileTables', 'External Tables', 'Graph Tables', and a list of user tables: 'dbo.customer_journey', 'dbo.customer_reviews', 'dbo.customers', 'dbo.engagement_data', 'dbo.geography', and 'dbo.products'. Below the tables, other database objects are listed: 'Columns', 'Keys', 'Constraints', 'Triggers', 'Indexes', and 'Statistics'.

Time Frame

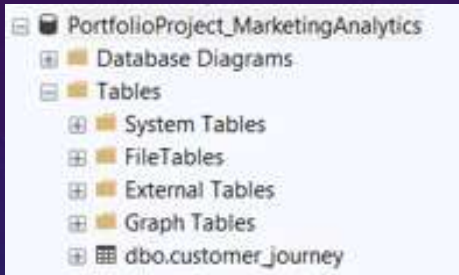
Data spanning from 2018 to 2022, enabling seasonal pattern identification.

Our analysis is built upon a robust, simulated e-commerce dataset designed to mirror real-world scenarios, ensuring relevant and applicable insights for strategic decision-making.

Primary Database

PortfolioProject_MarketingAnalytics hosted on SQL Server, serving as the central repository for all e-commerce data.

Primary Database Key Tables Utilized

- PortfolioProject_MarketingAnalytics hosted on SQL Server, serving as the central repository for all e-commerce data.
- 
- **customer_journey:** Comprehensive visit and action tracking data.
 - **engagement_data:** Social media performance metrics and user interactions.
 - **customer_reviews:** Unstructured customer feedback and ratings.
 - **products:** Detailed product specifications and classifications

Time Frame

Data spanning from **2023 to 2025**, allowing for robust trend analysis, seasonal pattern identification, and future forecasting.

```
4      SELECT
5          JourneyID,
6          CustomerID,
7          ProductID,
8          VisitDate,
9          Stage,
10         Action,
11         Duration,
12
13         ROW_NUMBER() OVER (
14
15             PARTITION BY CustomerID, ProductID, VisitDate, Stage, Action
16
17             ORDER BY JourneyID
18         ) AS row_num
19     FROM
20         dbo.customer_journey
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
102
```


Refining the Raw: Data Cleaning & Preparation

Transforming raw, disparate data into a pristine, actionable dataset is crucial for accurate and reliable analysis. We followed a rigorous, multi-step process:

Duplicate Removal

Meticulously identified and eliminated redundant records using SQL's ROW_NUMBER(), ensuring the uniqueness and integrity of our dataset.

Date Normalization

Converted raw date fields into easily digestible monthly and quarterly formats, facilitating efficient time-series trend identification and aggregation.

Standardization

Applied uniformity to product names and critical customer journey stage labels (e.g., Homepage, Checkout, Drop-off) for consistent and clear reporting.

Sentiment Analysis

Utilized Natural Language Processing (NLP) to classify customer reviews into **Positive**, **Neutral**, **Negative**, and **Mixed** sentiments, providing quantifiable customer insights.

Outcome: A clean, structured, and reliable dataset, perfectly primed for sophisticated Power BI dashboard creation and insightful analytics.

Building the Analytical Backbone: Data Model & Relationships

A well-structured data model is the bedrock of insightful analytics, ensuring seamless data flow and accurate reporting. We established clear, logical relationships between our core entities:

Customers

Who are they?

Products

What do they buy?

Engagement

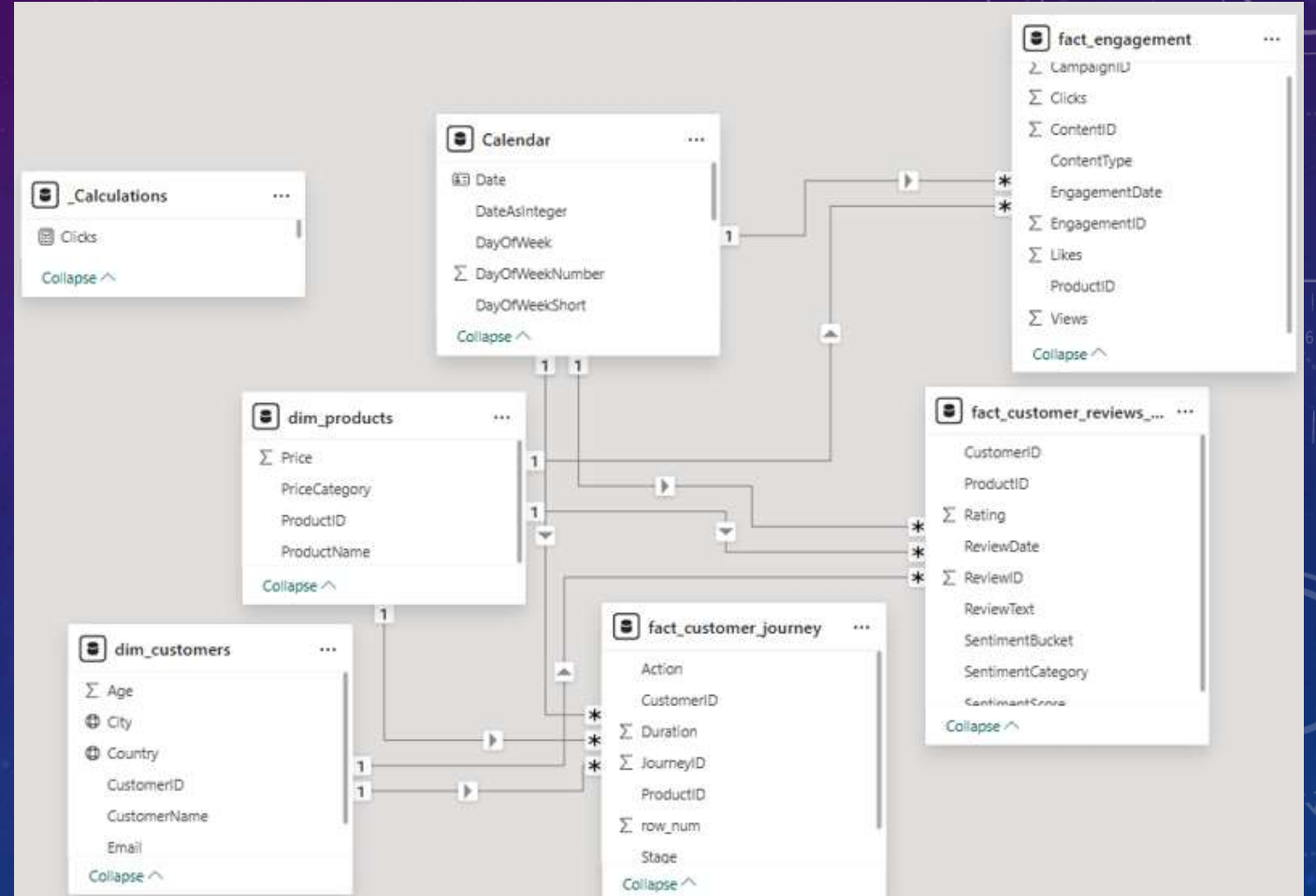
How do they interact?

Reviews

What do they think?

These relationships, meticulously forged within Power BI, seamlessly link social media interactions, comprehensive customer journey data, and nuanced review sentiments, enabling holistic analysis.

Justification: Our strategic choice of a **star schema design** significantly simplifies complex reporting, enhances query performance, and makes the model highly scalable for future data integrations and expansions.



Uncovering Trends: Data Exploration & Summarization

Key Descriptive Statistics

9.5%

Avg. Conversion Rate (Overall)

90M+

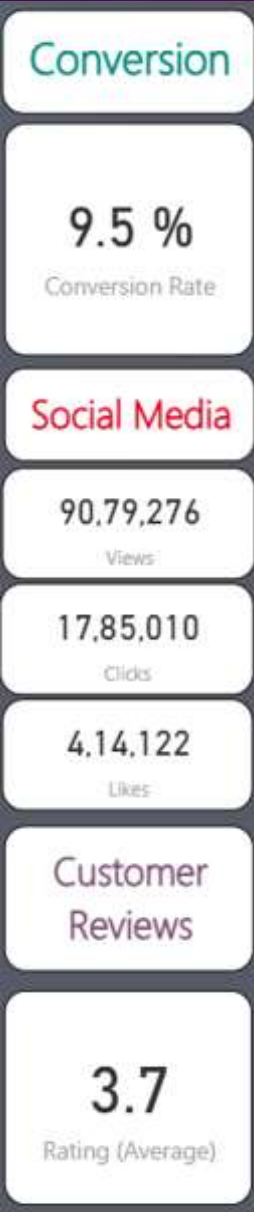
Social Media Reach (Total Views)

3.7/5

Avg. Customer Rating (Across Products)

Overall Trends

Our analysis revealed clear seasonal spikes, with Q3–Q4 consistently outperforming other quarters. This indicates prime selling periods and opportunities for targeted campaigns



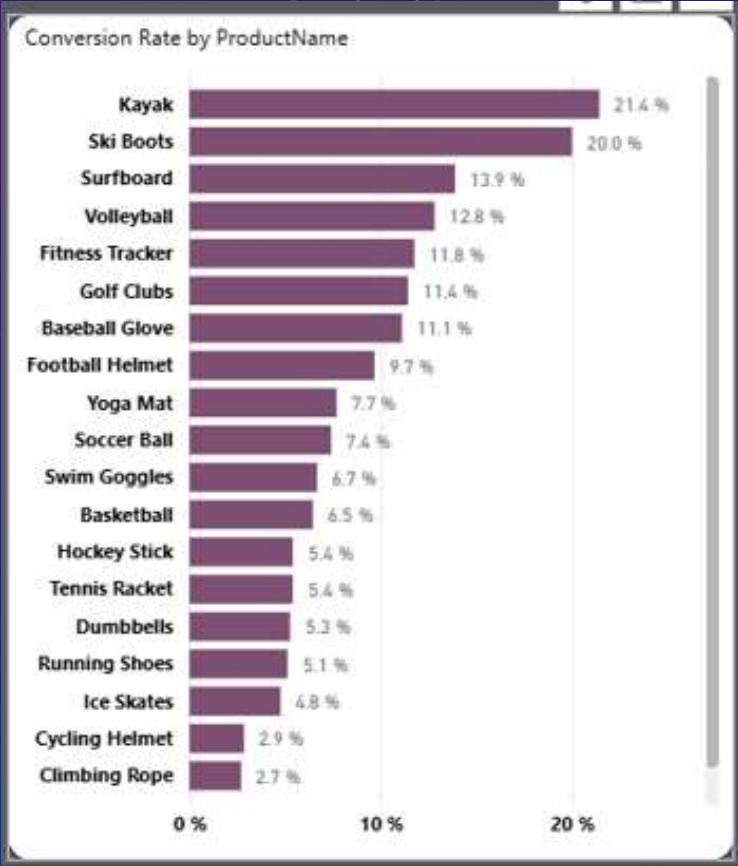
Product Performance Insights

High Conversion Champions

Kayak and **Ski Boots** demonstrated Exceptional conversion rates, proving their strong market appeal and effective journey optimization.

Low Conversion Opportunities

Climbing Rope and **Cycling Helmet** showed notably lower conversion rates, signaling critical areas for focused marketing interventions and product page optimization.



Dashboard Overview: The Big Picture

Our comprehensive dashboard provides a holistic view of overall e-commerce performance, integrating key metrics for quick assessment and high-level strategic decision-making.



Key Insight:

There's a significant alignment between conversion rates and seasonal engagement, highlighting the critical importance of launching and amplifying campaigns during periods of high user activity.

Deep Dive: Conversion Funnel Analysis

Understanding the customer journey is paramount to optimizing conversions. Our detailed funnel analysis dissects performance from initial interest to final purchase, pinpointing drop-off points:

- Views

Initial product page visits and impressions.

- Clicks

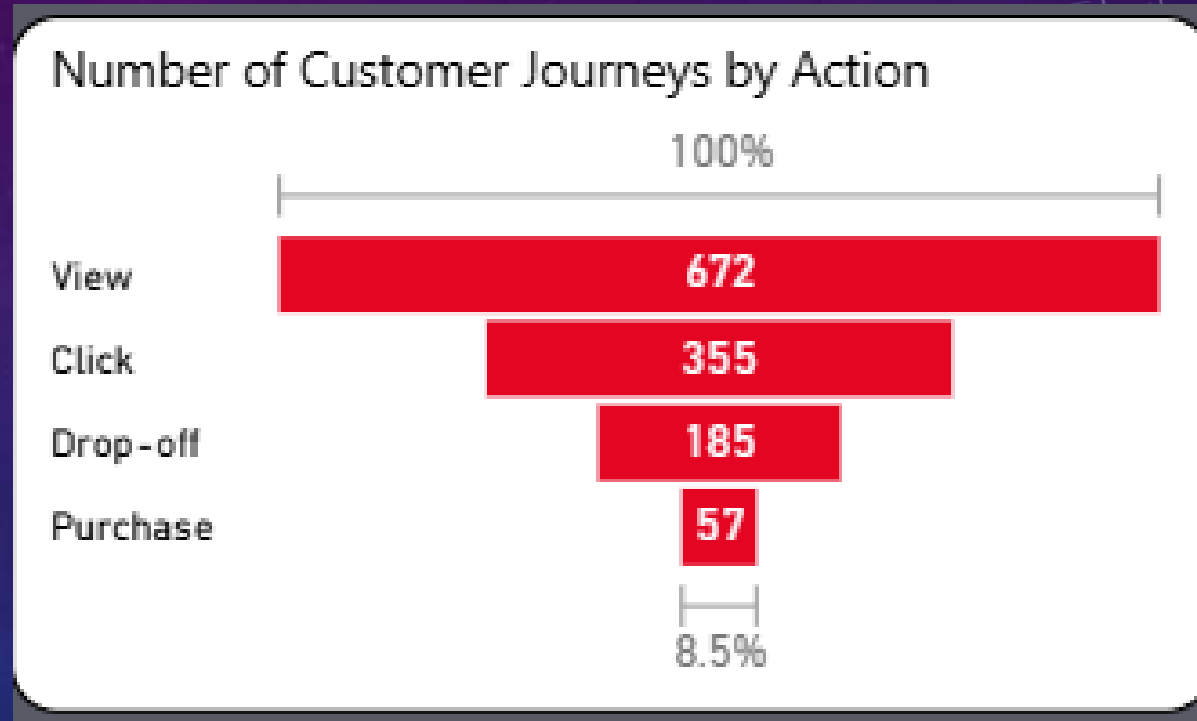
Engaging with product details or adding to cart.

- Purchases

Successful conversions and completed transactions.

- Drop-offs

Crucial points where customers abandon the journey.



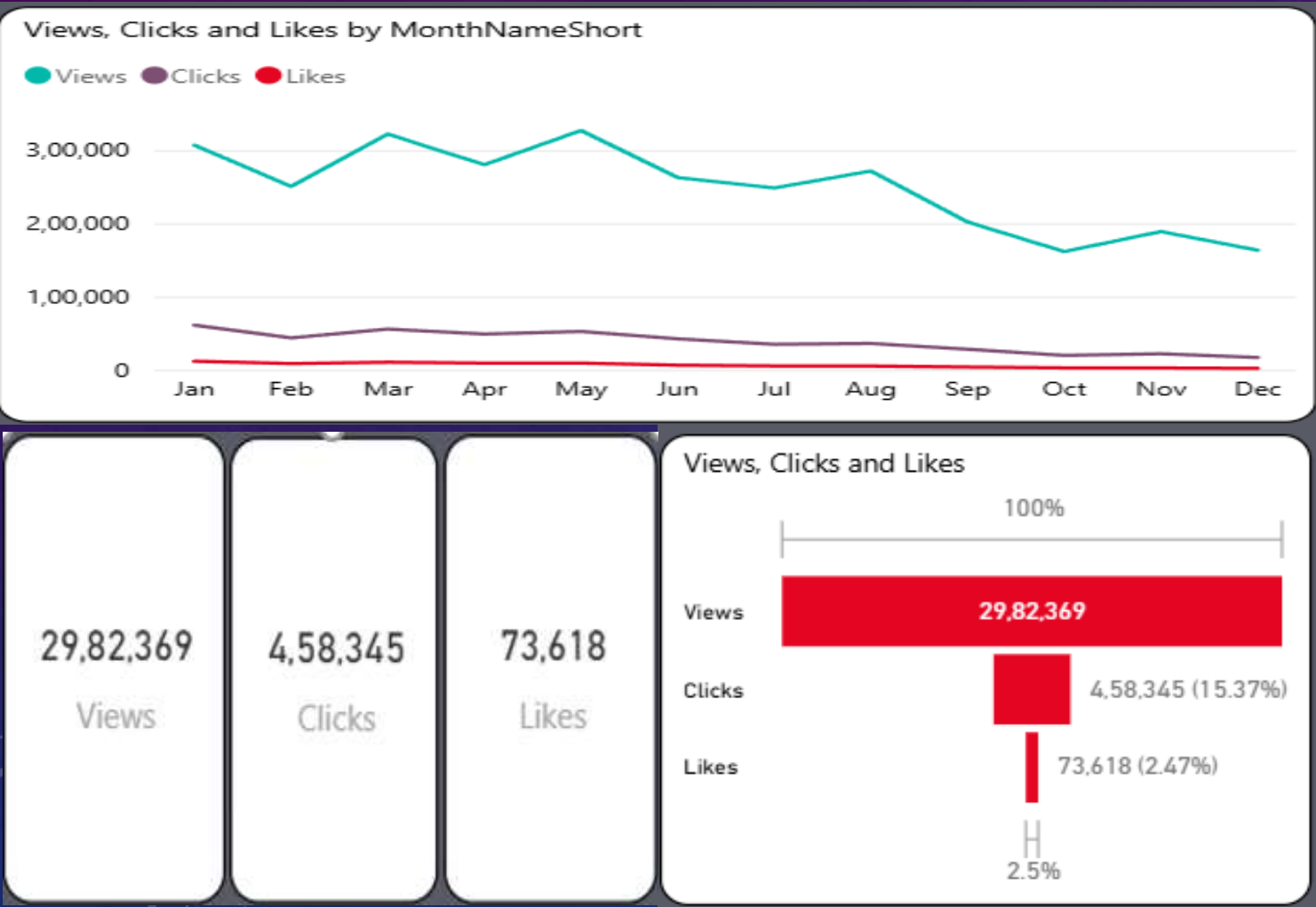
Specifically, **Kayak (21.4%)** and **Ski Boots (20%)** lead in conversion rates, with significant monthly peaks observed in **January and September**.

Actionable Recommendation: Focus intensified marketing budget and resources on high-converting products like Kayak and Ski Boots, strategically aligning campaigns with their proven peak months (January & September) to maximize ROI and sales volume.

Driving Engagement: Social Media Performance

Social media is a powerful catalyst for engagement and conversion. Our detailed dashboard reveals nuanced insights into its effectiveness across products and content types

- Product-level engagement:** Identifying which specific products resonate most strongly on social channels, driving attention and interest
- Monthly activity heatmap:** Revealing periods of heightened social media buzz, notably around **Ice Skates** and **Cycling Helmet**
- Views vs. Clicks vs. Likes trends:** Dissecting the full engagement lifecycle to understand audience interaction patterns



Analyzing the performance of various content types is key to optimizing social media strategy:

Videos

Consistently **outperform blogs** in driving conversions and overall engagement metrics, indicating high audience preference.

Blogs

Effective for awareness and providing in-depth information, but show less direct conversion impact compared to videos.

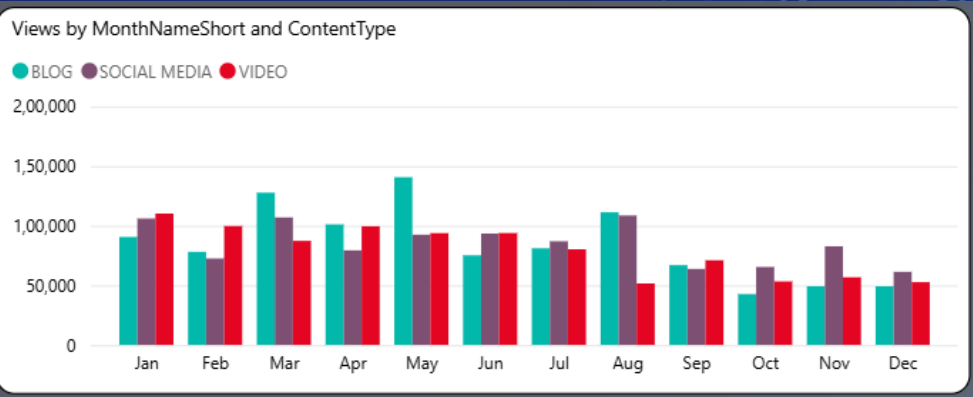
Social Posts

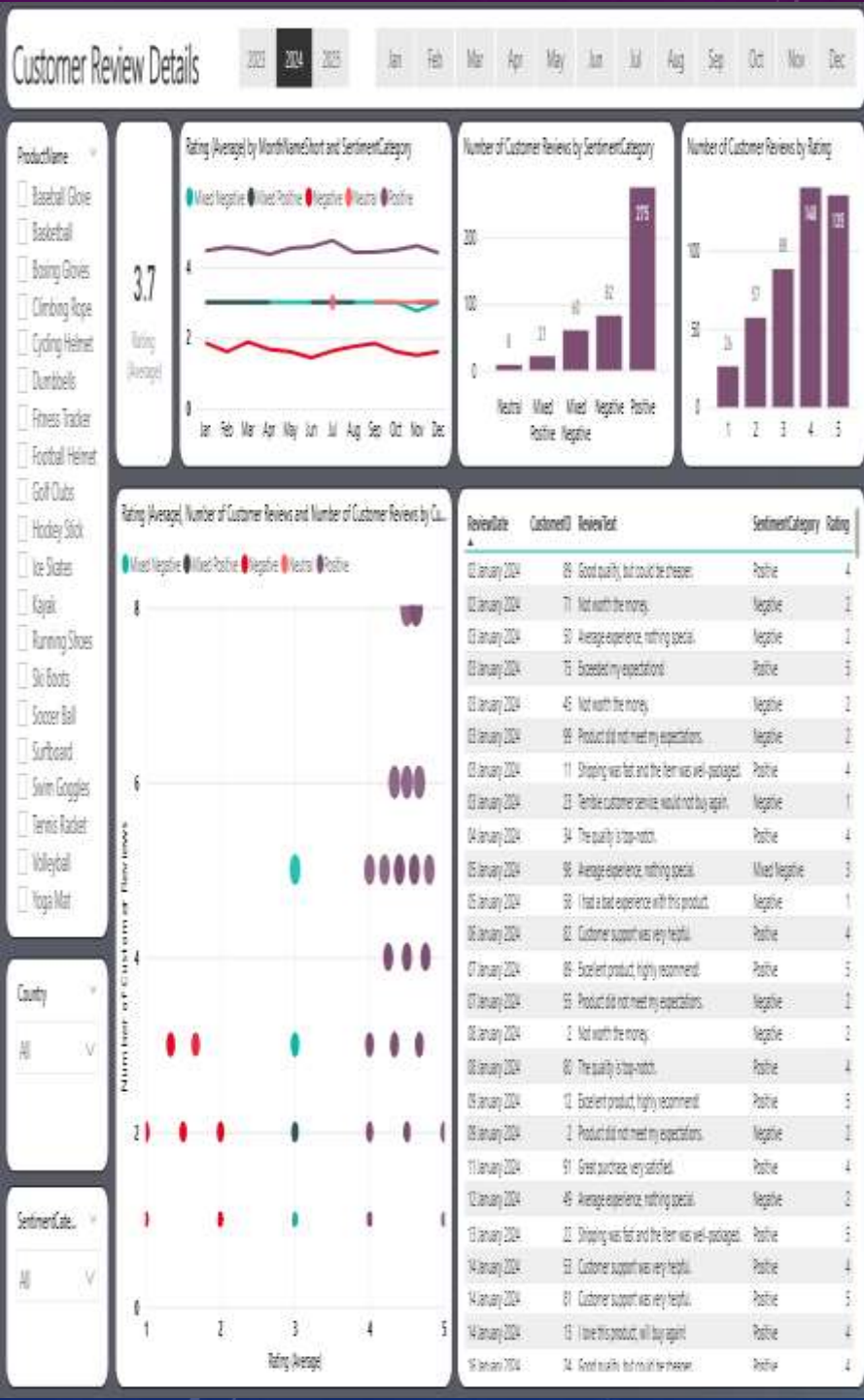
Ideal for quick updates, community interaction, and driving traffic to specific product pages or promotions.

✓

Key Insight:

Invest heavily in video content production and promotion for maximum social media conversion impact and sustained audience growth, leveraging its superior engagement capabilities.





Unpacking Customer Review Insights

Sentiment Breakdown

While positive sentiment dominates our customer reviews, approximately 30% of feedback falls into negative or mixed categories, indicating areas for focused improvement.

Ratings Distribution

The average product rating stands at 3.7 stars, with a significant number of products clustered in the 3-4 star range. This suggests general satisfaction but also room for distinction.

Correlation Insight

Analysis reveals a clear correlation: products with lower star ratings frequently exhibit clusters of negative sentiment in their reviews, highlighting specific pain points.

"Exceeded my expectations!" vs. "Not worth the money." - These direct customer voices drive our product enhancement priorities.

Data Engineering: The Foundation of Insights

Our robust analytics are built upon meticulous data engineering. This involves preparing and refining raw data to ensure accuracy and relevance for comprehensive analysis.

Key Backend Processes

Data Cleaning

Implementing techniques like
`ROW_NUMBER()` in SQL for efficient
duplicate removal, ensuring data integrity.

Data Preparation

Filtering and structuring diverse journey
data specifically for consumption by
Power BI dashboards.

Complex Joins

Executing intricate joins across product
inventories, customer reviews, and
engagement data for a holistic view.

SQL Query Example: Duplicate Removal

```
1 import pandas as pd
2 import pyodbc
3 import nltk
4 from nltk.sentiment.vader import SentimentIntensityAnalyzer
5
6 nltk.download('vader_lexicon')
7
8 def fetch_data_from_sql():
9
10     conn_str = {
11         "Driver={SQL Server};",
12         "Server=ALI-LT2024\\SQLEXPRESS;",
13         "Database=PortfolioProject_MarketingAnalytics;",
14         "Trusted_Connection=yes;"
15     }
16
17     conn = pyodbc.connect(conn_str)
18
19     query = "SELECT ReviewID, CustomerID, ProductID, ReviewDate, Rating, ReviewText FROM fact_customer_reviews"
20
21     df = pd.read_sql(query, conn)
22
23     conn.close()
24
25     return df
26
27 customer_reviews_df = fetch_data_from_sql()
28
29 sia = SentimentIntensityAnalyzer()
30
31 def calculate_sentiment(review):
32
33     sentiment = sia.polarity_scores(review)
34
35     return sentiment['compound']
36
37 def categorize_sentiment(score, rating):
38
39     if score > 0.05:
40         if rating >= 4:
41             return 'Positive'
42         elif rating == 3:
43             return 'Mixed Positive'
44         else:
45             return 'Mixed Negative'
```

This demonstrates the technical rigor applied to ensure clean, actionable data.

Strategic Insights & Interpretation

Translating data into actionable strategies is crucial. Here are key insights derived from our analysis, guiding future business decisions.

Conversion Efficiency

Outdoor and adventure products, such as Kayaks and Ski Boots, consistently outperform general fitness gear in conversion rates.

Social Media Impact

While our social media campaigns achieve high reach, the like-to-view ratio stands at a low ~4.5%, indicating potential content quality gaps.

Customer Sentiment Nuances

Overall sentiment is positive, but a significant segment of our customer base is price-sensitive. Negative reviews often highlight a mismatch between cost and perceived quality.

Strategic Actions Driven by Data

Targeted Ad Boost

Increase advertising spend on high-performing outdoor/adventure products to capitalize on proven success.

Product Quality Review

Prioritize enhancing product quality for items receiving consistent low ratings and negative feedback.

Video Content Enhancement

Revamp social media video strategy to improve engagement and like-to-view ratios.

Actionable Business Recommendations

Based on our comprehensive analysis, we propose the following strategic recommendations to optimize operations and enhance customer satisfaction.



Marketing

Implement seasonal targeting campaigns, focusing on peak periods such as January-February and September for optimal impact.



Customer Engagement

Develop personalized campaigns for customers who frequently purchase specific items, fostering loyalty and repeat business.



Product Development

Systematically address negative reviews through targeted product quality improvements, enhancing overall customer experience.



Future Enhancements

Integrate predictive modeling capabilities for enhanced demand forecasting, ensuring inventory optimization and reduced waste.

Acknowledged Limitations

Transparency is key to effective analysis. We acknowledge certain limitations inherent in our current dataset and analytical approach.

Simulated Data

The dataset used for this analysis is simulated, meaning it may not fully capture the complete diversity or nuances of actual customer behavior.

No Demographic Segmentation

Our current analysis does not include demographic segmentation, limiting insights into how different customer groups might behave or feel.

Keyword-Based Sentiment

Sentiment analysis relies primarily on keyword matching, which may not capture the full complexity of human emotion compared to advanced Natural Language Processing (NLP).

Limited Geographic Granularity

The analysis lacks detailed geographic granularity, preventing region-specific insights or localized strategic recommendations.

Date	Latitude	Lat	Longitude	Lon	Month	Day	Week	DayOfWeek	Quarter	Year
01-01-2024	0.0000	32.4071	32.407	32.40	Jan	1	1	Monday	Q1	2024
02-01-2024	0.0000	32.4072	32.407	32.40	Jan	2	2	Tuesday	Q1	2024
03-01-2024	0.0000	32.4073	32.407	32.40	Jan	3	3	Wednesday	Q1	2024
04-01-2024	0.0000	32.4074	32.407	32.40	Jan	4	4	Thursday	Q1	2024
05-01-2024	0.0000	32.4075	32.407	32.40	Jan	5	5	Friday	Q1	2024
06-01-2024	0.0000	32.4076	32.407	32.40	Jan	6	6	Saturday	Q1	2024
07-01-2024	0.0000	32.4077	32.407	32.40	Jan	7	7	Sunday	Q1	2024
08-01-2024	0.0000	32.4078	32.407	32.40	Jan	8	8	Monday	Q1	2024
09-01-2024	0.0000	32.4079	32.407	32.40	Jan	9	9	Tuesday	Q1	2024
10-01-2024	0.0000	32.4080	32.407	32.40	Jan	10	10	Wednesday	Q1	2024
11-01-2024	0.0000	32.4081	32.407	32.40	Jan	11	11	Thursday	Q1	2024
12-01-2024	0.0000	32.4082	32.407	32.40	Jan	12	12	Friday	Q1	2024
13-01-2024	0.0000	32.4083	32.407	32.40	Jan	13	13	Saturday	Q1	2024
14-01-2024	0.0000	32.4084	32.407	32.40	Jan	14	14	Sunday	Q1	2024
15-01-2024	0.0000	32.4085	32.407	32.40	Jan	15	15	Monday	Q1	2024
16-01-2024	0.0000	32.4086	32.407	32.40	Jan	16	16	Tuesday	Q1	2024
17-01-2024	0.0000	32.4087	32.407	32.40	Jan	17	17	Wednesday	Q1	2024
18-01-2024	0.0000	32.4088	32.407	32.40	Jan	18	18	Thursday	Q1	2024
19-01-2024	0.0000	32.4089	32.407	32.40	Jan	19	19	Friday	Q1	2024
20-01-2024	0.0000	32.4090	32.407	32.40	Jan	20	20	Saturday	Q1	2024
21-01-2024	0.0000	32.4091	32.407	32.40	Jan	21	21	Sunday	Q1	2024
22-01-2024	0.0000	32.4092	32.407	32.40	Jan	22	22	Monday	Q1	2024
23-01-2024	0.0000	32.4093	32.407	32.40	Jan	23	23	Tuesday	Q1	2024
24-01-2024	0.0000	32.4094	32.407	32.40	Jan	24	24	Wednesday	Q1	2024
25-01-2024	0.0000	32.4095	32.407	32.40	Jan	25	25	Thursday	Q1	2024
26-01-2024	0.0000	32.4096	32.407	32.40	Jan	26	26	Friday	Q1	2024
27-01-2024	0.0000	32.4097	32.407	32.40	Jan	27	27	Saturday	Q1	2024
28-01-2024	0.0000	32.4098	32.407	32.40	Jan	28	28	Sunday	Q1	2024
29-01-2024	0.0000	32.4099	32.407	32.40	Jan	29	29	Monday	Q1	2024
30-01-2024	0.0000	32.4100	32.407	32.40	Jan	30	30	Tuesday	Q1	2024
31-01-2024	0.0000	32.4101	32.407	32.40	Jan	31	31	Wednesday	Q1	2024
01-02-2024	0.0000	32.4102	32.410	32.41	Feb	1	1	Thursday	Q2	2024
02-02-2024	0.0000	32.4103	32.410	32.41	Feb	2	2	Friday	Q2	2024
03-02-2024	0.0000	32.4104	32.410	32.41	Feb	3	3	Saturday	Q2	2024
04-02-2024	0.0000	32.4105	32.410	32.41	Feb	4	4	Sunday	Q2	2024
05-02-2024	0.0000	32.4106	32.410	32.41	Feb	5	5	Monday	Q2	2024
06-02-2024	0.0000	32.4107	32.410	32.41	Feb	6	6	Tuesday	Q2	2024

Conclusion: Driving Growth Through Data

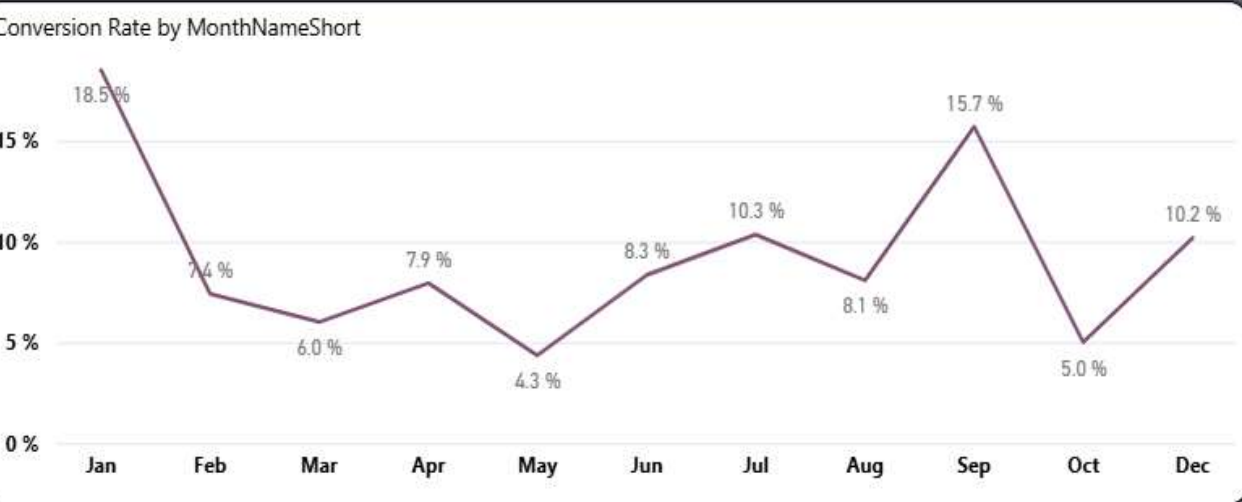
This project demonstrates the powerful synergy between robust data analytics and strategic business outcomes. From defining objectives to delivering actionable recommendations, our process is designed to optimize performance.



Key Takeaway: Data analytics is not just about numbers; it's about empowering informed decisions that optimize product performance, enhance marketing effectiveness, and ultimately elevate customer satisfaction.

Unlocking E-commerce Growth: Conversion Insights

Understanding customer behavior is paramount for sustainable e-commerce growth. By meticulously analyzing conversion trends, we can identify opportunities, mitigate risks, and optimize pathways from homepage to checkout. This deep dive into conversion data reveals critical insights into user journeys and transactional success.



ProductName	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Kayak	0.0 %			40.0 %		100.0 %	100.0 %		33.3 %			100.0 %	21.4
Ski Boots	150.0 %	33.3 %	100.0 %					0.0 %					20.0
Surfboard		50.0 %	25.0 %	33.3 %	0.0 %				50.0 %				13.9
Volleyball	40.0 %					100.0 %		50.0 %		0.0 %			12.8
Fitness Tracker	50.0 %				50.0 %				33.3 %			33.3 %	11.8
Golf Clubs	33.3 %							33.3 %	25.0 %	0.0 %		25.0 %	11.4
Baseball Glove	33.3 %		20.0 %							200.0 %			11.1
Football Helmet	100.0 %	100.0 %		0.0 %				25.0 %					9.7
Yoga Mat	0.0 %					100.0 %	33.3 %						7.7
Soccer Ball	0.0 %								100.0 %		0.0 %		7.4
Swim Goggles									25.0 %			33.3 %	6.7
Basketball			0.0 %	50.0 %								100.0 %	6.5
Hockey Stick		33.3 %						33.3 %					5.4
Tennis Racket									50.0 %	20.0 %			5.4
Dumbbells			0.0 %			33.3 %						16.7 %	5.3
Running Shoes					16.7 %				100.0 %				5.1
Ice Skates							66.7 %						4.8
Cycling Helmet				20.0 %			0.0 %				0.0 %		2.9
Climbing Rope							50.0 %						2.7
Total	18.5 %	7.4 %	6.0 %	7.9 %	4.3 %	8.3 %	10.3 %	8.1 %	15.7 %	5.0 %		10.2 %	8.5

Conversion Rate Trends

Track monthly and quarterly conversion rates to understand performance over time and identify underlying patterns. This reveals the true health of our sales funnel.

Seasonal Spikes & Promotions

Pinpoint periods of increased activity driven by festivals, holidays, or marketing campaigns. Leveraging these insights optimizes inventory and promotional strategies.

Drop-off Rate Analysis

Analyze user drop-off points from homepage to checkout. Identifying bottlenecks helps streamline the purchase journey and reduce abandonment rates.

GitHub Link :

https://github.com/Soumyaditya24/Marketing_Analysis_of_Sports_Equipments

Thank You.