

# Luke bike shop Analysis

Project created using SQL and Powerbi

# Project Requirements

- ▶ Hourly Revenue Analysis: This feature tracks revenue on an hourly basis, providing a granular view of the business's performance throughout the day.
- ▶ Profit and Revenue Trends: This section displays trends in profit and revenue over specific periods, thereby helping to identify growth patterns and areas needing improvement.
- ▶ Seasonal Revenue: Analysis of revenue fluctuations across different seasons was included to understand the impact of seasonal variations on the business.
- ▶ Rider Demographics: Detailed demography on riders was incorporated to better understand the customer base and tailor marketing strategies accordingly.

# Dataset

► Data set consists of:

1. dteday: The specific day of the data recording.
2. season: The season in which the data was recorded, with numerical representation.
3. yr: The year of the data, represented as a numerical value.
4. hr: The hour of the day when the data was recorded.
5. rider\_type: The type of rider ( casual or registered riders).
6. riders: The number of riders during the specified hour.
7. price: The price charged per ride.
8. COGS (Cost of Goods Sold): The direct costs attributable to the rides.
9. revenue: The total revenue generated from the rides.
10. Profit: The net profit

# Data Processing

Database was loaded into the SQL platform and data was combined from two yearly bike share tables (bike\_share\_yr\_0 and bike\_share\_yr\_1) into a common table expression (CTE). Various fields were selected, and the revenue and profit were computed. This combined data was later joined with the cost\_table on the yr field to integrate cost-related information.

```
with cte as(  
  select * from bike_share_yr_0  
  union all  
  select * from bike_share_yr_1)
```

```
select  
  dteday,  
  season,  
  a.yr,  
  weekday,  
  hr,  
  rider_type,  
  riders,  
  price,  
  COGS,  
  riders*price as Revenue,  
  riders*price-COGS as profit  
from cte a  
left join cost_table b  
on a.yr=b.yr
```



# Luke Bike Shop

2021

2022

Profit Margin

0.45

Sum of riders

3M



season

All



## When we are Making Money?

This table shows hourly sales across the week, with higher earnings in midday and early evening hours, particularly around 10 to 15 hours suggesting that these are the most profitable times. Days like Wednesday and Friday show notably higher sales, indicating variable profitability across the week.

hr	0	1	2	3	4	5	6
8	\$194	\$952	\$1,087	\$1,131	\$1,132	\$1,068	\$265
9	\$360	\$503	\$546	\$552	\$556	\$598	\$433
10	\$594	\$319	\$297	\$306	\$306	\$365	\$610
11	\$725	\$376	\$338	\$353	\$367	\$434	\$761
12	\$857	\$477	\$422	\$449	\$461	\$549	\$868
13	\$860	\$472	\$422	\$431	\$455	\$558	\$892
14	\$835	\$443	\$388	\$395	\$410	\$530	\$882
15	\$812	\$466	\$431	\$422	\$456	\$584	\$883
16	\$816	\$654	\$662	\$632	\$664	\$765	\$844
17	\$732	\$1,153	\$1,254	\$1,185	\$1,222	\$1,136	\$771
18	\$625	\$1,105	\$1,192	\$1,144	\$1,165	\$971	\$671
19	\$516	\$791	\$815	\$827	\$832	\$698	\$551
20	\$385	\$555	\$582	\$595	\$622	\$492	\$415

Revenue

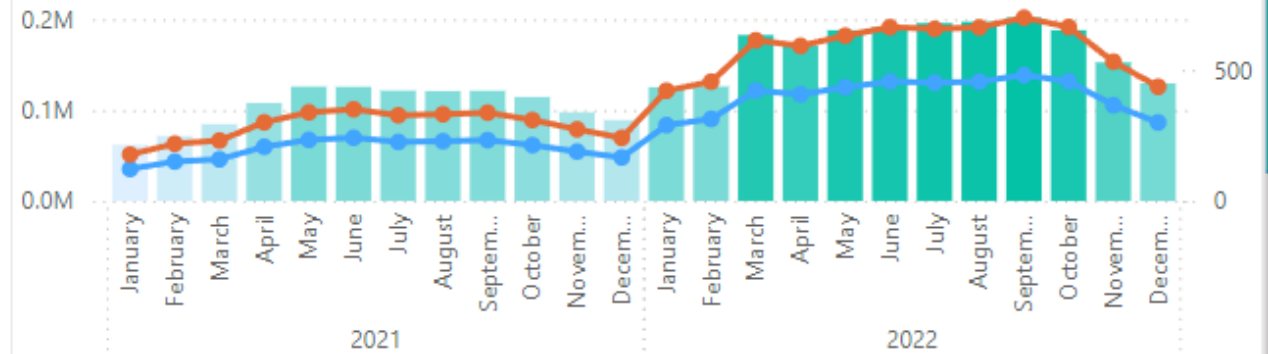
\$15M

Profit

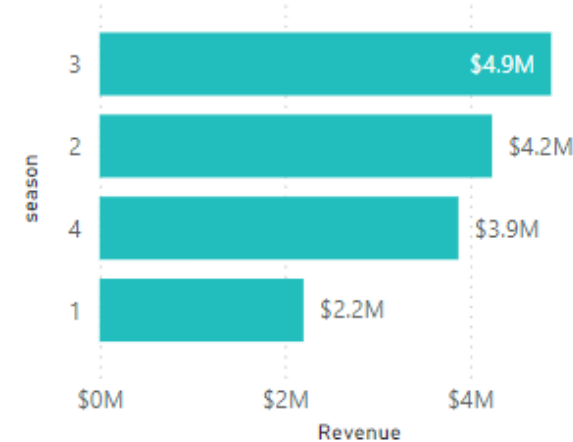
10.45M

## KPI over Time

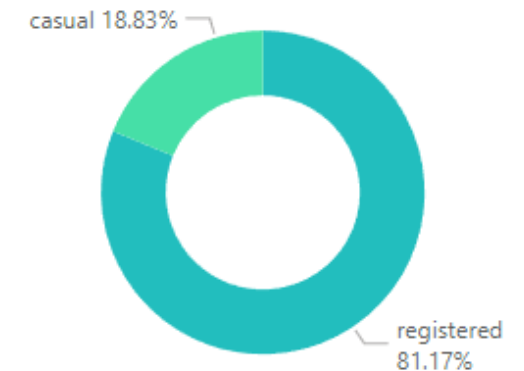
Riders Average of profit Average of Revenue



## Revenue by season



## Rider Demographic





# Luke Bike Shop

2021

2022

Profit Margin

0.45



Sum of riders

1M



season

All



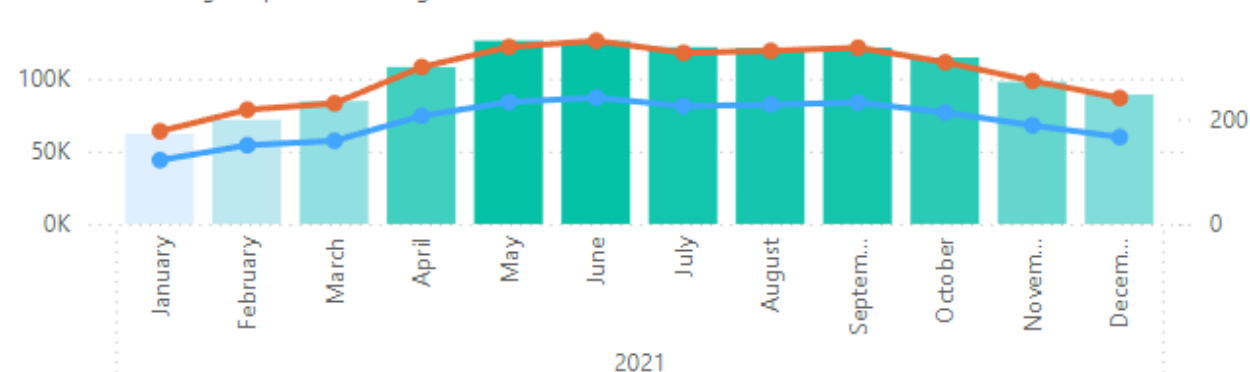
## When we are Making Money?

This table shows hourly sales across the week, with higher earnings in midday and early evening hours, particularly around 10 to 15 hours suggesting that these are the most profitable times. Days like Wednesday and Friday show notably higher sales, indicating variable profitability across the week.

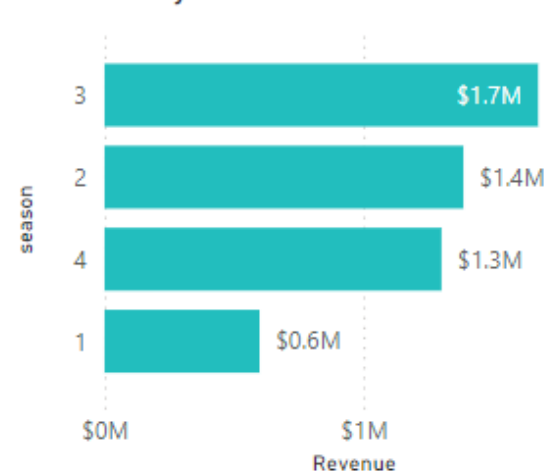
hr	0	1	2	3	4	5	6
8	\$125	\$610	\$716	\$695	\$701	\$678	\$161
9	\$244	\$334	\$354	\$348	\$361	\$388	\$262
10	\$409	\$223	\$200	\$187	\$196	\$231	\$377
11	\$502	\$262	\$214	\$217	\$235	\$279	\$464
12	\$592	\$329	\$269	\$274	\$294	\$348	\$545
13	\$609	\$325	\$272	\$261	\$286	\$355	\$547
14	\$585	\$303	\$259	\$242	\$266	\$339	\$551
15	\$569	\$312	\$285	\$246	\$278	\$370	\$566
16	\$572	\$445	\$426	\$388	\$403	\$488	\$553
17	\$509	\$802	\$828	\$758	\$746	\$742	\$503
18	\$441	\$762	\$792	\$716	\$701	\$630	\$460
19	\$373	\$546	\$541	\$522	\$500	\$441	\$378
20	\$274	\$387	\$395	\$364	\$388	\$317	\$291

## KPI over Time

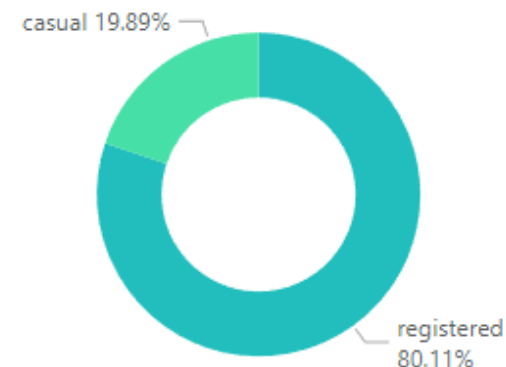
Riders Average of profit Average of Revenue



## Revenue by season



## Rider Demographic





# Luke Bike Shop

2021

2022

Profit Margin

0.45

Sum of riders

2M

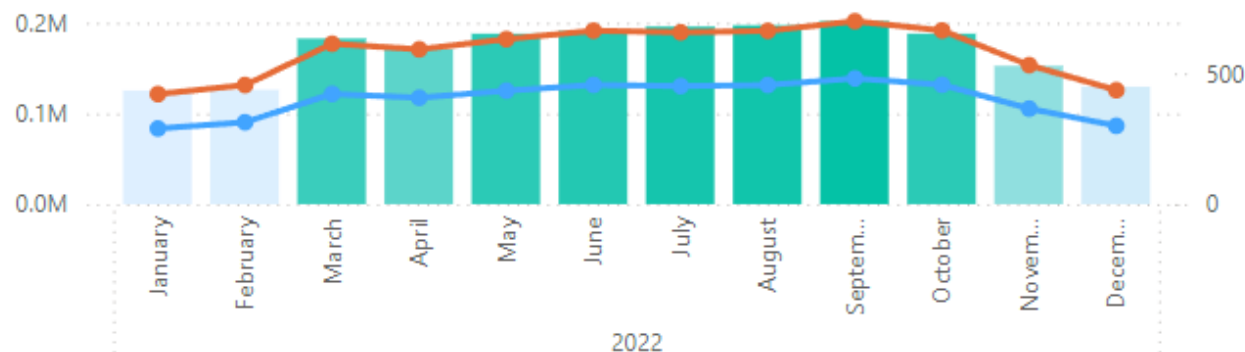


season

All

## KPI over Time

Riders Average of profit Average of Revenue



Revenue

\$10M

Profit

7.03M

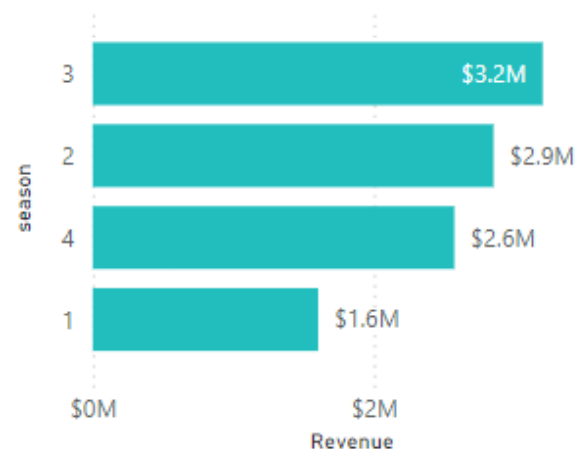
## When we are Making Money?



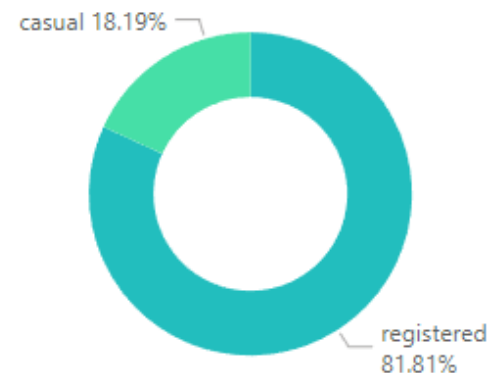
This table shows hourly sales across the week, with higher earnings in midday and early evening hours, particularly around 10 to 15 hours suggesting that these are the most profitable times. Days like Wednesday and Friday show notably higher sales, indicating variable profitability across the week.

hr	0	1	2	3	4	5	6
8	\$261	\$1,293	\$1,459	\$1,568	\$1,554	\$1,459	\$371
9	\$474	\$672	\$738	\$755	\$747	\$807	\$607
10	\$777	\$414	\$395	\$425	\$414	\$498	\$848
11	\$943	\$490	\$463	\$488	\$497	\$590	\$1,064
12	\$1,117	\$624	\$579	\$625	\$626	\$750	\$1,197
13	\$1,106	\$620	\$573	\$600	\$620	\$761	\$1,244
14	\$1,080	\$583	\$516	\$548	\$551	\$720	\$1,219
15	\$1,051	\$620	\$576	\$598	\$630	\$797	\$1,205
16	\$1,055	\$863	\$898	\$877	\$925	\$1,041	\$1,140
17	\$952	\$1,504	\$1,681	\$1,613	\$1,699	\$1,530	\$1,043
18	\$806	\$1,449	\$1,592	\$1,563	\$1,629	\$1,313	\$882
19	\$657	\$1,036	\$1,090	\$1,126	\$1,163	\$956	\$724
20	\$495	\$723	\$769	\$822	\$857	\$668	\$538

## Revenue by season



## Rider Demographic



# Analysis and Insight

## Hourly Revenue Insights

Our analysis shows that revenue peaks significantly during the morning hours (8-9 AM) and again in the late afternoon to early evening (4-6 PM) on weekdays. This pattern suggests higher ridership during rush hours. Overall, weekdays consistently generate more revenue than weekends, with Friday and mid-week days (Tuesday to Thursday) being the most profitable. This indicates that these days are crucial for maximizing business performance.

## Recommendation

To boost revenue, we should focus our marketing and operational strategies on weekday mornings and late afternoons. Additionally, we should concentrate promotional activities on mid-week days to capitalize on the higher average revenues during these times. This approach will help us make the most of the peak periods and enhance overall business efficiency.



## Profit and Revenue Trends

Analysis shows a steady increase in ridership and average revenue from January 2021 to September 2022, with notable peaks during the summer months, especially in June, July, and August. Profit margins have remained consistently high, closely following revenue trends. This indicates effective cost management and a strong link between increased ridership and profitability.

### Recommendation

To maximize profitability, Concentrate resources and marketing efforts during the peak summer months when ridership and revenue are highest. Additionally, maintaining cost efficiency will help sustain the high profit margins.

## Seasonal Revenue

Analysis shows that revenue is highest in Season 3 and progressively decreases, with Season 1 having the lowest revenue. This pattern is likely because Season 1 coincides with the winter months (December to February). Thus, Season 3 is our peak period for revenue generation, while Season 1 is the least profitable.

### Recommendation

To maximize revenue, focus on optimizing operations and marketing efforts during Season 3. Additionally, to boost revenue during the less profitable Season 1, run campaigns promoting safer routes and offer sales on effective bike gear. These initiatives can encourage more bike rides during the winter months, helping to increase revenue during this period.

## Rider Demographics

The chart shows that registered riders significantly outnumber casual riders, with registered users taking more than four times as many rides as casual users.

### Recommendation

To retain and grow the base of registered riders, we should implement value-added bike services, such as connecting GPS trackers and integrating bike-related programs into the app, to enhance the riding experience. Additionally, targeted campaigns aimed at converting casual riders into registered users should be considered to foster long-term engagement and revenue growth.

## Business Growth and Insights

Based on data from 2021 and 2022, Luke Bike Shop has seen significant growth in riders, revenue, and profit. The number of riders increased by 64.88%, leading to a 106.20% rise in revenue and a 105.65% increase in profit. This growth shows that the shop's strategies to attract more riders are highly effective. Notably, revenue and profit were unaffected by a 25.06% increase in average price, suggesting that customers are willing to pay more due to perceived value or improved service delivery.

# Price Strategy

- **Avoid Substantial Price Increases:** To maintain demand, avoid significant price hikes. Instead, consider small, incremental price adjustments (preferably 10-15%) while focusing on enhancing value through improved services or bundled offers.
- **Value Addition:** Introduce added benefits or improved services alongside the price increase, such as better bike maintenance, enhanced safety features, or exclusive discounts for frequent riders. This will justify the price hike and retain customer loyalty.
- **Targeted Communication:** Clearly communicate the reasons for the price increase to riders, highlighting improvements in services and infrastructure. Transparency can help mitigate negative reactions.
- **Seasonal Adjustments:** Implement higher price increases during peak seasons (such as Season 3) when demand is higher, while keeping prices relatively stable during the low-demand Season 1.

By adopting these strategies, Luke Bike Shop can continue to grow while maintaining customer satisfaction and loyalty.

# Thank you

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