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Pizza Resto

Intro | Problem Statement | Data Set Description | Analysis | Insights | Recommendations

PIZZA HUT ANALYSIS

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Intro

INTRODUCTION

In today’s data-driven business landscape, leveraging data to understand customer behavior and preferences is crucial for sustained growth. This project focuses on analyzing Pizza Hut's sales data using SQL to uncover meaningful insights related to customer ordering patterns, revenue generation, and product popularity. By translating raw data into actionable intelligence, this analysis supports data-informed decision-making and strategic planning.

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PROBLEM STATEMENT

Pizza Hut aims to gain deeper insights into its customers' ordering habits and product preferences to enhance customer satisfaction and drive sales. However, without thorough data analysis, identifying peak ordering times, top-selling pizzas, and high-revenue categories remains challenging. This project seeks to solve this problem by using SQL queries to extract, summarize, and interpret key data points, ultimately guiding business strategies and operational improvements.

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DataSet

DATA SET DESCRIPTION

The dataset consists of four CSV files forming a relational database:

- orders.csv
- order_details.csv
- pizzas.csv
- pizza_types.csv

1. ORDERS.CSV – GENERAL ORDER INFORMATION

- Each row represents a unique customer order.
- Key fields:
  - order_id: Identifier of each order and a unique identifier for each order.
  - date and time: Timestamp of when the order was placed.
- Useful for:
  - Time-based analysis (e.g., peak hours, daily trends, etc).

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DataSet

DATA SET DESCRIPTION

2. ORDER_DETAILS.CSV – LINE ITEMS IN EACH ORDER

- Contains the specific items included in each order.
- Key fields:
  - order_details_id: Unique identifier for each order line item.
  - order_id: Identifier of each order and a foreign key linking to orders.csv.
  - pizza_id: Identifier of each pizza and a foreign key linking to pizzas.csv Identifier for each pizza
  - quantity: Number of pizzas ordered.
- Enables:
  - Analysis of order composition and item-level sales frequency.

3. PIZZAS.CSV – PIZZA VARIANTS AND PRICING

- Describes each pizza variant, including its size and price.
- Key fields:
- pizza_id: Unique ID combining pizza type and size (e.g., bbq_chicken_l).
- pizza_type_id: Identifier of each pizza type and a foreign key linking to pizza_types.csv.
- size: Size of the pizza (e.g., S, M, L, XL).
- price: Price of that pizza variant.

Useful for :

- Revenue calculation, pricing strategy analysis, and size-based trends.
  -

DATA SET DESCRIPTION

4. PIZZA_TYPES.CSV – PIZZA TYPE METADATA

- Contains descriptive details about each base pizza type.
- Key fields:
- pizza_type_id: Identifier of each pizza type and a unique identifier (e.g., bbq_chicken).
- name: pizza name.
- category: Type of pizza (e.g., Classic, Veggie, Meat).
- ingredients: List of ingredients in the pizza.
- Enables:
- Category-based segmentation, ingredient popularity insights, and preference trends.

ANALYSIS

1. TOTAL ORDERS COUNT

```
select count(order_id) as 'Order_Count'
from orders
```

	Order_Count
▶	21350

2. REVENUE CALCULATION

```
select round(sum(quantity*price)) as 'Total_Revenue'
from order_details o join pizzas p
on o.pizza_id = p.pizza_id
```

	Total_Revenue
▶	817860

ANALYSIS

3. TOP 5 POPULAR PIZZAS

```
select pt.pizza_type_id, sum(quantity) as 'Top_5_Pizzas_Ordered'
from pizza_types pt join pizzas p
on pt.pizza_type_id = p.pizza_type_id join order_details od
on p.pizza_id = od.pizza_id
group by pt.pizza_type_id
order by 2 desc
limit 5
```

pizza_type_id	Top_5_Pizzas_Ordered
classic_dlx	2453
bbq_ckn	2432
hawaiian	2422
pepperoni	2418
thai_ckn	2371

ANALYSIS

4. PIZZA QUANTITY BY CATEGORY

```
select category, sum(quantity) as 'Total_Quantity_Ordered_by_Category'
from pizza_types pt join pizzas p
on pt.pizza_type_id = p.pizza_type_id join order_details od
on p.pizza_id = od.pizza_id
group by category
order by 2
```

	category	Total_Quantity_Ordered_by_Category
▶	Chicken	11050
	Veggie	11649
	Supreme	11987
	Classic	14888

ANALYSIS

5. TOP PIZZA TYPES BY REVENUE.

```
with cte as
(
select o.pizza_id as e, name,  quantity * price as Total
from order_details o join pizzas p
on o.pizza_id = p.pizza_id join pizza_types pt
on p.pizza_type_id = pt.pizza_type_id
)
select e, name, round(sum(Total), 0) as Revenue
from cte
group by e, name
order by Revenue desc
limit 3
```

e	name	Revenue
thai_ckn_l	The Thai Chicken Pizza	29258
five_cheese_l	The Five Cheese Pizza	26066
four_cheese_l	The Four Cheese Pizza	23622

6. CUMMULATIVE REVENUE OVER TIME

```
select
    order_date,
    round(sum(quantity * price), 2)as Daily_Revenue,
    sum(sum(quantity * price)) over (order by order_date) as Cummulative_Revenue
from order_details od join pizzas p
on od.pizza_id = p.pizza_id join orders o
on od.order_id = o.order_id
group by order_date
order by order_date
```

order_date	Daily_Revenue	Cummulative_Revenue
2015-01-01	2713.85	2713.8500000000004
2015-01-02	2731.9	5445.75
2015-01-03	2662.4	8108.15
2015-01-04	1755.45	9863.6
2015-01-05	2065.95	11929.55
2015-01-06	2428.95	14358.5
2015-01-07	2202.2	16560.7
2015-01-08	2838.35	19399.05
2015-01-09	2127.35	21526.4
2015-01-10	2463.95	23990.350000000002
2015-01-11	1872.3	25862.65

ANALYSIS

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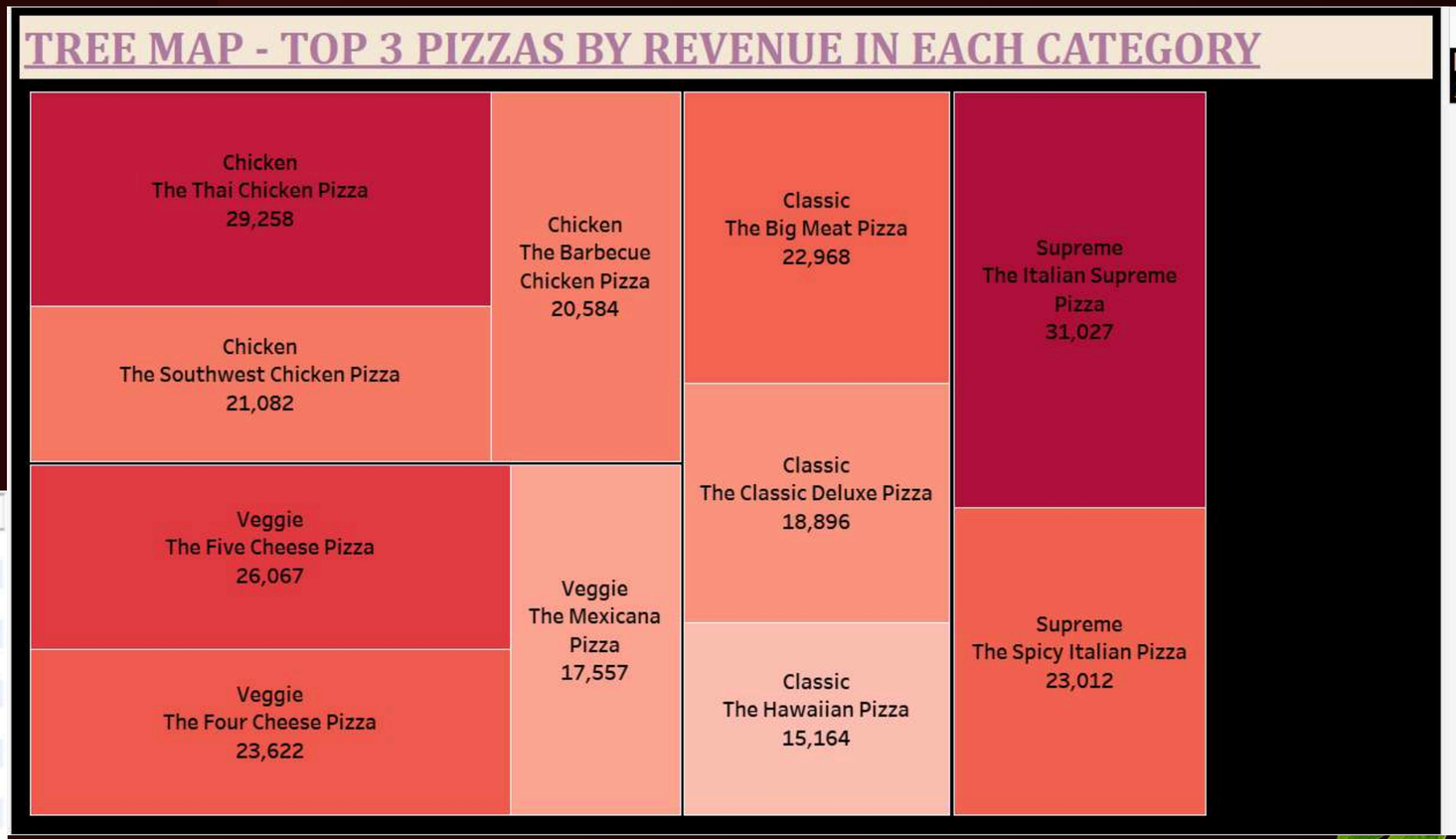
Analysis

7. TOP 3 PIZZA TYPES BY REVENUE IN EACH CATEGORY

```sql
select *
from
(with cte as
(
select
    p.pizza_id,
    pt.name,
    category,
    sum(quantity * price) as Pizza_Revenue,
    dense_rank() over(partition by category order by sum(quantity * price) desc) as rn
from pizzas p join order_details o
on p.pizza_id = o.pizza_id join pizza_types pt
on p.pizza_type_id = pt.pizza_type_id
group by p.pizza_id, category, pt.name
order by Pizza_Revenue desc
)
select *
from cte
where rn <= 3
) as utututu
```

pizza_id	name	category	Pizza_Revenue	rn
thai_ckn_l	The Thai Chicken Pizza	Chicken	29257.5	1
five_cheese_l	The Five Cheese Pizza	Veggie	26066.5	1
four_cheese_l	The Four Cheese Pizza	Veggie	23622.200000000554	2
spicy_ital_l	The Spicy Italian Pizza	Supreme	23011.75	1
big_meat_s	The Big Meat Pizza	Classic	22968	1
southw_ckn_l	The Southwest Chicken Pizza	Chicken	21082	2
bbq_ckn_l	The Barbecue Chicken Pizza	Chicken	20584	3
classic_dlx_m	The Classic Deluxe Pizza	Classic	18896	2
mexicana_l	The Mexicana Pizza	Veggie	17556.75	3
ital_supr_m	The Italian Supreme Pizza	Supreme	15526.5	2
ital_supr_l	The Italian Supreme Pizza	Supreme	15500.25	3
hawaiian_l	The Hawaiian Pizza	Classic	15163.5	3



ANALYSIS

8. PIZZA DISTRIBUTION BY CATEGORY (ORDERS)

```
select category, count(order_id) as 'No.of_Orders_by_Category'
from pizza_types pt join pizzas p
on pt.pizza_type_id = p.pizza_type_id join order_details od
on p.pizza_id = od.pizza_id
group by category
```

category	No.of_Orders_by_Category
Classic	14579
Veggie	11449
Supreme	11777
Chicken	10815

TABLEAU ANALYSIS

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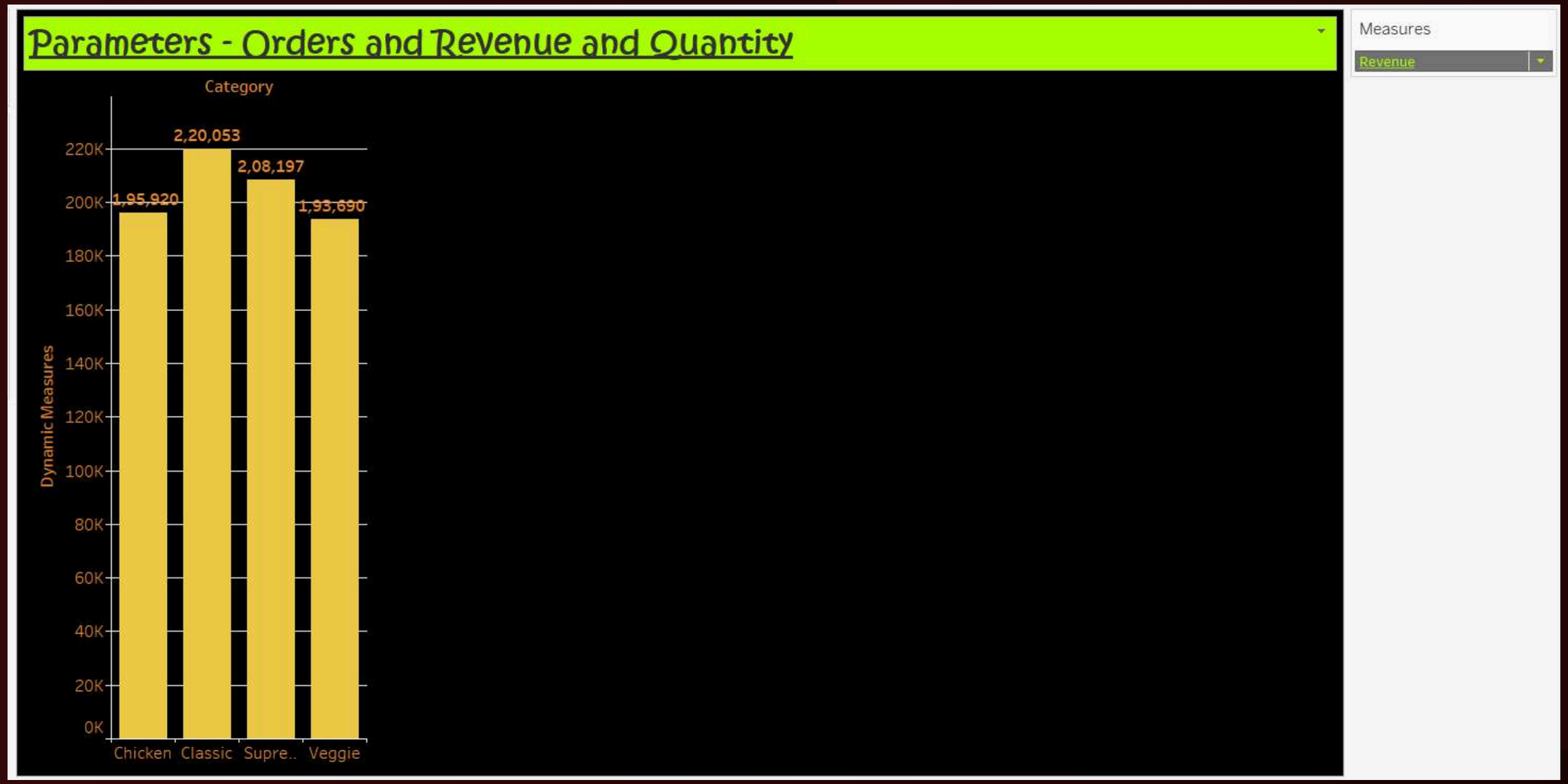
Tableau

8. PIZZA DISTRIBUTION BY CATEGORY (REVENUE)



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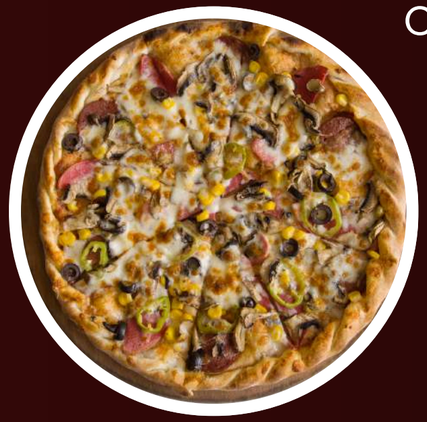
Best-Sellers

OUR BEST-SELLERS



CLASSIC DELUXE PIZZA

Toppings:

- Pepperoni slices
- Italian sausage (crumbled or sliced)
- Green bell peppers (sliced)
- Onions (sliced)
- Mushrooms (sliced)
- Black olives (sliced)

BARBECUE CHICKEN

Toppings:

- Cooked chicken breast (grilled or roasted, shredded or cubed) tossed in BBQ sauce
- Red onions (thinly sliced)
- Cilantro (chopped, added after baking)
- Smoked gouda or cheddar cheese (optional, for extra smokiness)
- Bacon bits (optional, for added crunch and flavor)

INSIGHTS

1. High demand is clustered around a few specific variants, showing clear customer favourites.
2. Customers prefer value-for-money options or are likely ordering for sharing.
3. Smaller sizes (S/M) trail behind, while XL may be limited by pricing or portion preference.
4. Traditional flavours resonate more with customers.
5. Vegetarian options might be under-promoted or less appealing in current form.
6. Focus not just on popularity — high-value items even with low sales are crucial to profitability.
7. There’s room to phase out underperformers or cross-promote top items within each category.
8. Use the Top 3 Pizzas during promotions, in deals, flagship branding (menu highlights, combos, etc).

RECOMMENDATIONS

1. **Promote Top Performers**

- Use the top 3–5 pizzas as anchors in meal deals and combo offers.
- Feature them prominently in marketing campaigns like social media, flyers, banners.

2. **Focus on Large Size**

- Given the popularity of large pizzas, offer value bundles and family packs centered on the L size.
- Consider adding a loyalty incentive for repeat large-size orders.

3. **Rethink Underperforming Categories**

- Veggie and Chicken categories may benefit from:

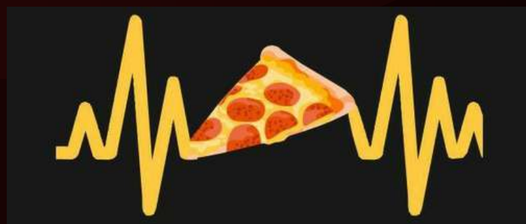
Menu revamp

Creative ingredient combinations

Special discounts or awareness campaigns

4. **Capitalize on High-Revenue Pizzas**

- Highlight pizzas with high revenue-per-order even if they are not most ordered. These can boost profit margins when upsold effectively.



RECOMMENDATIONS

1. **Category-Specific Promotions**

- Run rotating “Category of the Week” campaigns to test engagement with different groups.
- Helps test if lower-demand categories simply suffer from visibility or price resistance.

2. **Inventory and Supply Chain Optimization**

- Use insights to stock ingredients for high-demand items more efficiently.
- Reduce waste by lowering inventory for low-selling pizzas.

3. **Customer Targeting & Promotions - Segmented Campaigns:**

- Target meat-lovers and classic fans with loyalty programs.
- Offer limited-time offers for low-performing categories to test engagement.

Occasion-Based Bundles:

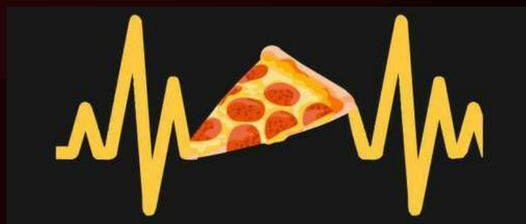
- Large-size preference = group ordering → target game nights, parties, weekends.
- Create seasonal/holiday bundles centered on large, classic pizzas.

4. **Sales & Marketing Strategy**

- Highlight High-Revenue Pizzas:
- Use premium pizzas in upselling scripts, online ordering, and combo deals.

Size-Based Campaigns:

- Offer tiered bundles (e.g., Buy 2 Large, Get 1 Medium Free).
- Test price elasticity on XL pizzas — slight price drops could unlock new demand.



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THANK YOU

FOR ATTENTION

2025 PIZZA RESTO PRESENTATION

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ANY QUESTIONS ?

LIKE TO HEAR