Case Study 1 & 2

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DSC 550

CSP 1 & 2

Description:

A synthetic dataset that describes pizza sales for a pizza place somewhere in the US. While the contents are artificial, the ingredients used to make the pizzas are far from it. There are 32 different pizzas that fall into 4 different categories: *classic* (classic pizzas: 'You probably had one like it before, but never like this!'), *chicken* (pizzas with chicken as a major ingredient: 'Try the Southwest Chicken Pizza! You'll love it!'), *supreme* (pizzas that try a little harder: 'My Soppressata pizza uses only the finest salami from my personal salumist!'), and *veggie* (pizzas without any meats whatsoever: 'My Five Cheese pizza has so many cheeses, I can only offer it in Large Size!').

Usage:

pizzaplace

Format:

A tibble with 49574 rows and 7 variables:

id

> The ID for the order, which consists of one or more pizzas at a given **date** and **time**

date

> A character representation of the **order** date, expressed in the ISO 8601 date format (YYYY-MM-DD)

time

> A character representation of the **order** time, expressed as a 24-hour time the ISO 8601 extended time format (hh:mm:ss)

name

> The short name for the pizza

size

The size of the pizza, which can either be **S**, **M**, **L**, **XL** (rare!), or **XXL** (even rarer!); most pizzas are available in the **S**, **M**, and **L** sizes but exceptions apply

type

The category or type of pizza, which can either be **classic**, **chicken**, **supreme**, or **veggie**

price

The price of the pizza and the amount that it sold for (in USD)

Details:

Each pizza in the dataset is identified by a short name. The following listings provide the full names of each pizza and their main ingredients.

Classic Pizzas:

- *classic_dlx*: The Classic Deluxe Pizza (Pepperoni, Mushrooms, Red Onions, Red Peppers, Bacon)
- *big_meat*: The Big Meat Pizza (Bacon, Pepperoni, Italian Sausage, Chorizo Sausage)
- *pepperoni*: The Pepperoni Pizza (Mozzarella Cheese, Pepperoni)
- *hawaiian*: The Hawaiian Pizza (Sliced Ham, Pineapple, Mozzarella Cheese)
- *pep_msh_pep*: The Pepperoni, Mushroom, and Peppers Pizza (Pepperoni, Mushrooms, and Green Peppers)
- *ital_cpcllo*: The Italian Capocollo Pizza (Capocollo, Red Peppers, Tomatoes, Goat Cheese, Garlic, Oregano)
- *napolitana*: The Napolitana Pizza (Tomatoes, Anchovies, Green Olives, Red Onions, Garlic)
- *the_greek*: The Greek Pizza (Kalamata Olives, Feta Cheese, Tomatoes, Garlic, Beef Chuck Roast, Red Onions)

Chicken Pizzas:

- *thai_ckn*: The Thai Chicken Pizza (Chicken, Pineapple, Tomatoes, Red Peppers, Thai Sweet Chilli Sauce)
- *bbq_ckn*: The Barbecue Chicken Pizza (Barbecued Chicken, Red Peppers, Green Peppers, Tomatoes, Red Onions, Barbecue Sauce)
- *southw_ckn*: The Southwest Chicken Pizza (Chicken, Tomatoes, Red Peppers, Red Onions, Jalapeno Peppers, Corn, Cilantro, Chipotle Sauce)
- *cali_ckn*: The California Chicken Pizza (Chicken, Artichoke, Spinach, Garlic, Jalapeno Peppers, Fontina Cheese, Gouda Cheese)
- *ckn_pesto*: The Chicken Pesto Pizza (Chicken, Tomatoes, Red Peppers, Spinach, Garlic, Pesto Sauce)
- *ckn_alfredo*: The Chicken Alfredo Pizza (Chicken, Red Onions, Red Peppers, Mushrooms, Asiago Cheese, Alfredo Sauce)

Supreme Pizzas:

- *brie_carre*: The Brie Carre Pizza (Brie Carre Cheese, Prosciutto, Caramelized Onions, Pears, Thyme, Garlic)
- *calabrese*: The Calabrese Pizza ('Nduja Salami, Pancetta, Tomatoes, Red Onions, Friggitello Peppers, Garlic)
- *soppressata*: The Soppressata Pizza (Soppressata Salami, Fontina Cheese, Mozzarella Cheese, Mushrooms, Garlic)
- *sicilian*: The Sicilian Pizza (Coarse Sicilian Salami, Tomatoes, Green Olives, Luganega Sausage, Onions, Garlic)
- *ital_supr*: The Italian Supreme Pizza (Calabrese Salami, Capocollo, Tomatoes, Red Onions, Green Olives, Garlic)
- *peppr_salami:* The Pepper Salami Pizza (Genoa Salami, Capocollo, Pepperoni, Tomatoes, Asiago Cheese, Garlic)
- *prsc_argla*: The Prosciutto and Arugula Pizza (Prosciutto di San Daniele, Arugula, Mozzarella Cheese)
- *spinach_supr*: The Spinach Supreme Pizza (Spinach, Red Onions, Pepperoni, Tomatoes, Artichokes, Kalamata Olives, Garlic, Asiago Cheese)
- *spicy_ital*: The Spicy Italian Pizza (Capocollo, Tomatoes, Goat Cheese, Artichokes, Peperoncini verdi, Garlic)

Vegetable Pizzas

- *mexicana*: The Mexicana Pizza (Tomatoes, Red Peppers, Jalapeno Peppers, Red Onions, Cilantro, Corn, Chipotle Sauce, Garlic)
- *four_cheese*: The Four Cheese Pizza (Ricotta Cheese, Gorgonzola Piccante Cheese, Mozzarella Cheese, Parmigiano Reggiano Cheese, Garlic)
- *five_cheese*: The Five Cheese Pizza (Mozzarella Cheese, Provolone Cheese, Smoked Gouda Cheese, Romano Cheese, Blue Cheese, Garlic)
- *spin_pesto*: The Spinach Pesto Pizza (Spinach, Artichokes, Tomatoes, Sun-dried Tomatoes, Garlic, Pesto Sauce)
- *veggie_veg*: The Vegetables + Vegetables Pizza (Mushrooms, Tomatoes, Red Peppers, Green Peppers, Red Onions, Zucchini, Spinach, Garlic)
- *green_garden*: The Green Garden Pizza (Spinach, Mushrooms, Tomatoes, Green Olives, Feta Cheese)
- *mediterraneo*: The Mediterranean Pizza (Spinach, Artichokes, Kalamata Olives, Sun-dried Tomatoes, Feta Cheese, Plum Tomatoes, Red Onions)
- *spinach_fet*: The Spinach and Feta Pizza (Spinach, Mushrooms, Red Onions, Feta Cheese, Garlic)
- *ital_veggie*: The Italian Vegetables Pizza (Eggplant, Artichokes, Tomatoes, Zucchini, Red Peppers, Garlic, Pesto Sauce)
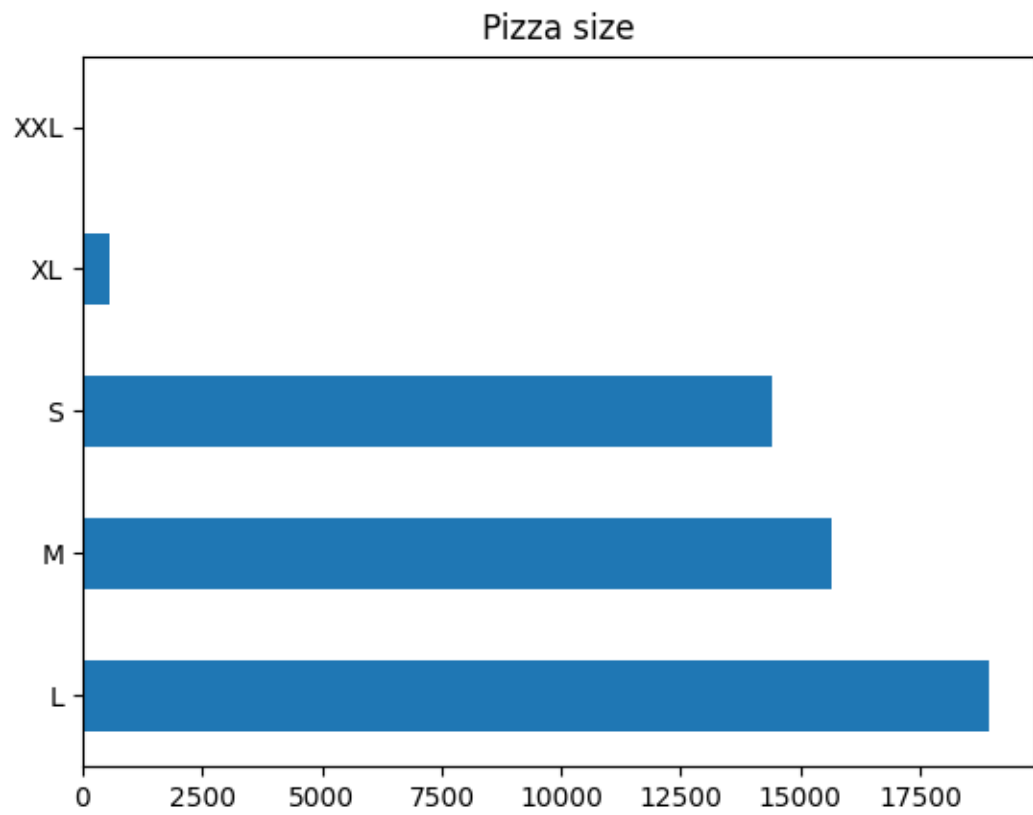
Original Pizza Place Data

	Unnamed: 0	id	date	...	size	type	price
0	1	2015-000001	2015-01-01	...	M	classic	13.25

1	2 2015-000002 2015-01-01 ...	M	classic	16.00
2	3 2015-000002 2015-01-01 ...	M	veggie	16.00
3	4 2015-000002 2015-01-01 ...	L	chicken	20.75
4	5 2015-000002 2015-01-01 ...	L	veggie	18.50

Pizza Name Bar Char
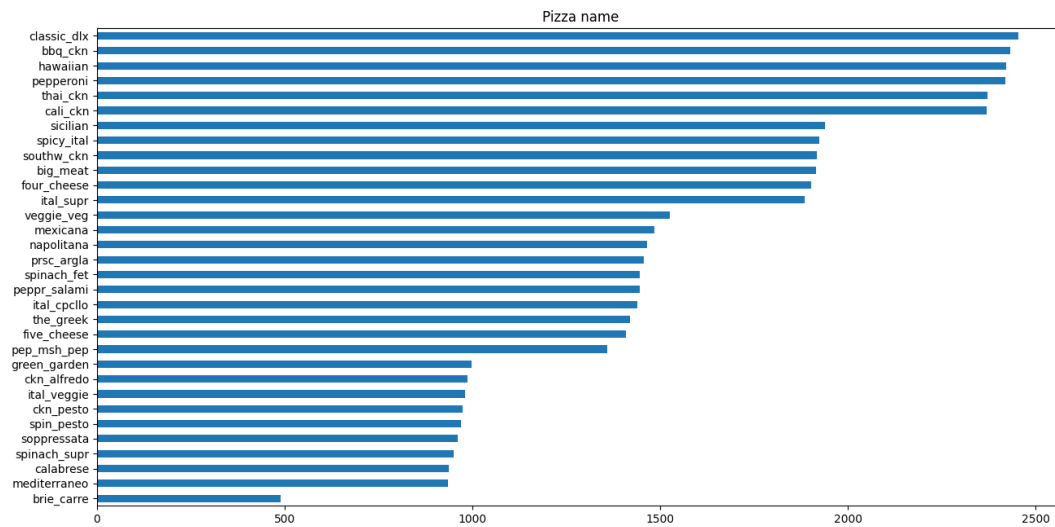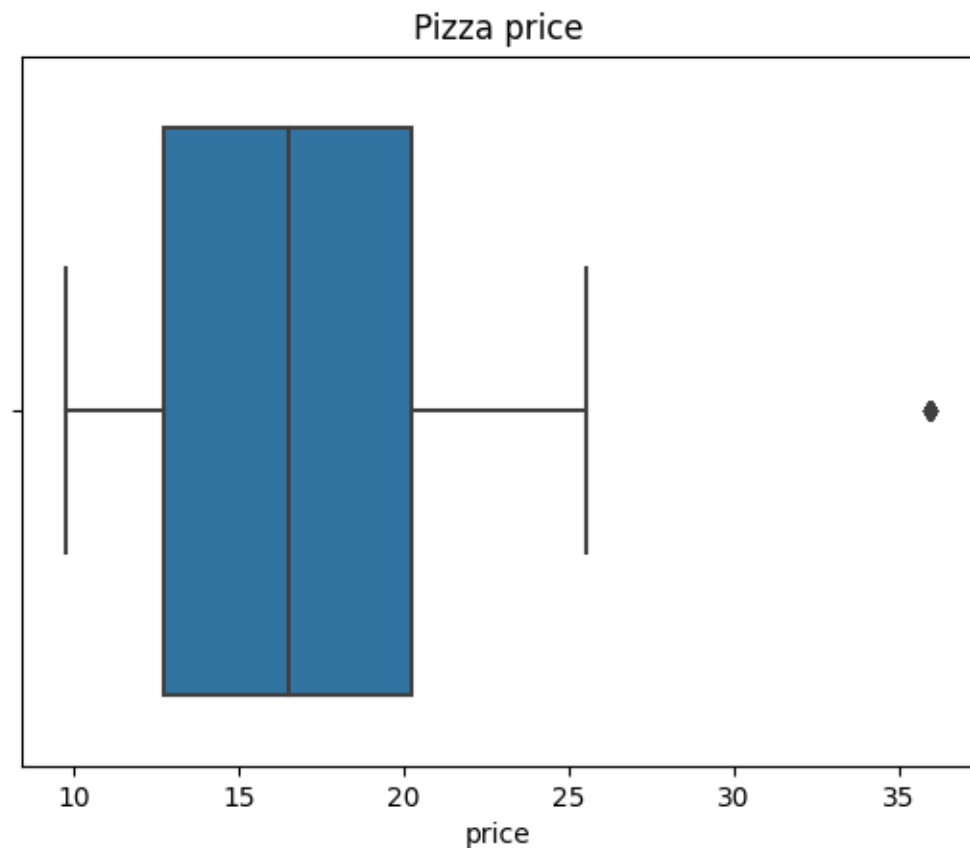

Pizza Size Bar Chart

Pizza size

Pizza Type Pie Chart

Pizza type
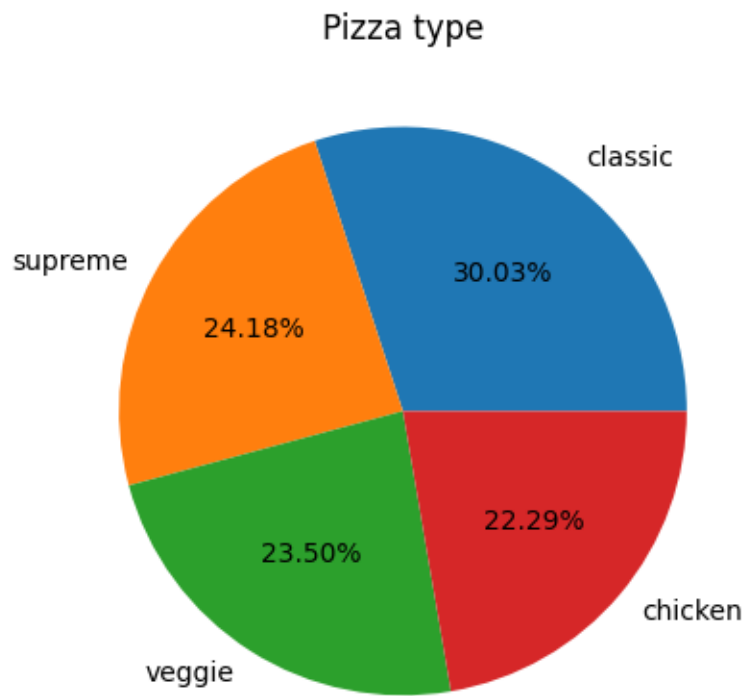
Pizza Price Boxplot

Pizza price

Updated Format:

A tibble with 49546 rows and 5 variables

EDA:

I dropped the unnamed, **id**, and **date** columns because they were irrelevant from the year of 2015. I also removed the rows of prices that ranged from $35 or greater because they were outliers.

Statistical questions:

1) Is there a relationship between the size of a pizza versus the type of pizza purchased?
2) Is there a relationship between the name of a pizza versus the price of pizza purchased?

Hypotheses:

1. There will be more large classic pizzas purchased.
2. There will be more classic dlx pizzas purchased at $12 or $16.

Updated Pizza Place Data

	time	name	size	type	price
0	11:38:36	hawaiian	M	classic	13.25
1	11:57:40	classic_dlx	M	classic	16.00
2	11:57:40	mexicana	M	veggie	16.00
3	11:57:40	thai_ckn	L	chicken	20.75
4	11:57:40	five_cheese	L	veggie	18.50
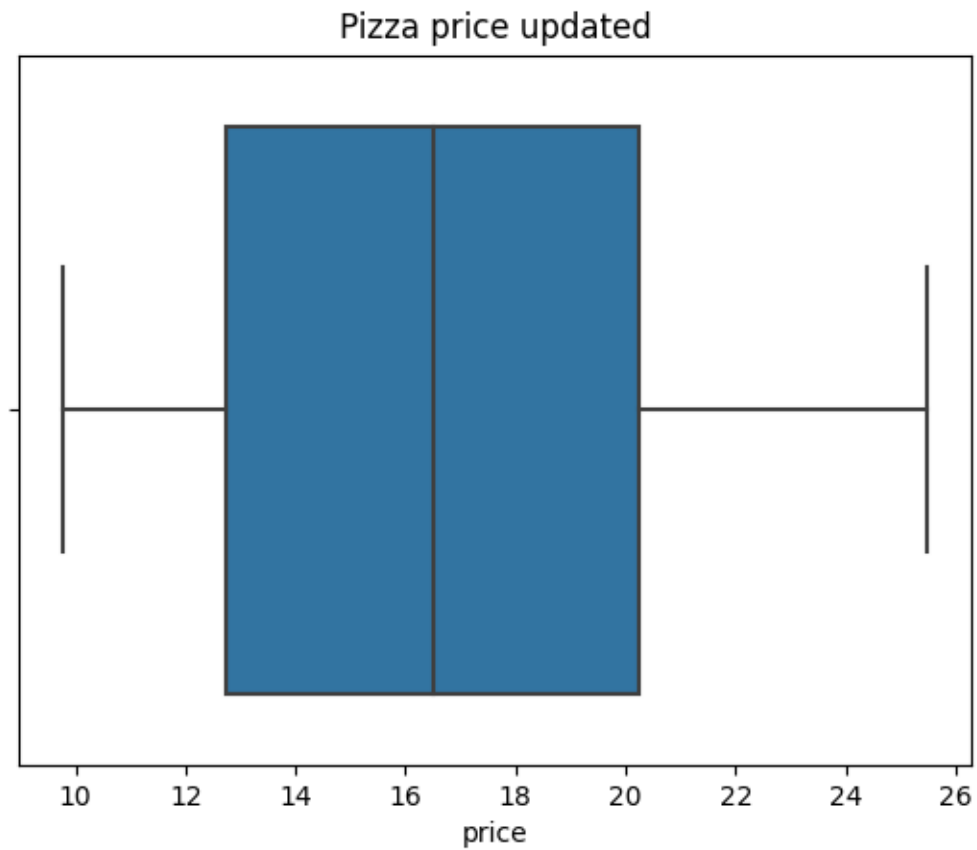
R: A year of pizza sales from a pizza place (vincentarelbundock.github.io)