# Feeding the Academic Appetite:

Price Dynamics and Dietary Trends of German Canteens

https://data-science-projekt.onrender.com/



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#### Data Sources

We sourced our data from https://openMensa.org, a comprehensive database for canteen menus, supplemented by a custom web scraper for SH canteens. This approach enabled us to enrich our dataset significantly. However, the dataset lacked dish category labels (vegan, vegetarian, omnivore), requiring us to manually classify these. This task proved challenging, as accurately identifying vegan dishes necessitates ruling out other categories, and many meals lacked sufficient information for clear classification. Wii successfully classified 83,41 % (584.674 out of 700,958) of our data with high confidence. Interpret results related to meal categories cautiously.

## How has the average price for a meal in Schleswig-Holstein changed since 2021?



Figure 1: Average price change by city in Schleswig-Holstein

Average price cha	nge (per year s	since 2021)		2022	2023
Kiel:	0.41 €/Year,	10.41 %/Year	Kiel:	8.7 %	12.4 %
Flensburg:	0.42 €/Year,	11.05 %/Year	Flensburg:	1.7 %	9.8 %
Lübeck:	0.16 €/Year,	8.67 %/Year	Lübeck:	15.8 %	6.8 %
Heide:	0.47 €/Year,	9.36 %/Year	Heide:	11.8 %	12.2 %
Schleswig-Holstein:	: 0.36 €/Year,	9.87 %/Year	SH:	9.5 %	10.3 %
Food Inflation = Germany-wide food inflation rate (https://destatis.de)			Food Inflation:	13.4 %	12,4 %

In 2022 and 2023, meal prices in Schleswig-Holstein (SH) rose significantly, yet remained below the German food inflation rate

#### How does the average price change for visitors in Germany since 2023?



Figure 2: Average meal prices over time for visitors

#### Average price change since 2023 (absolute)

**Student Price:** 0.13 €, or 5.60 % **Employee Price:** 0.19 €, or 6.30 % **Guest Price:** 0.33 €, or 9.30 %

► Since 2023, canteen prices in Germany have risen, with guests experiencing the highest increase, followed by employees and students

### Does the weekday influence the availability of dietary options in German canteens?

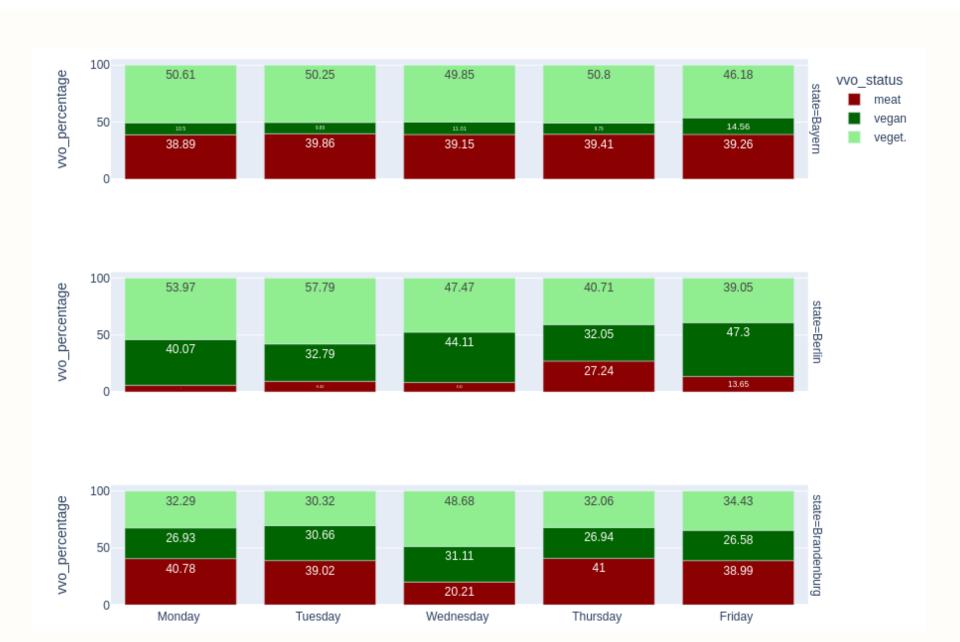


Figure 3: Percentage of vegan/vegetarian/omnivore meals available each weekday in Bavaria, Berlin, Brandenburg

- Weekdays impact meal category distribution in certain states
- Aggregate data may not fully capture this effect
- Variability in canteen policies (e.g., veggie days) could skew overall statistics

## Does a university's location influence the average price of meals for students?

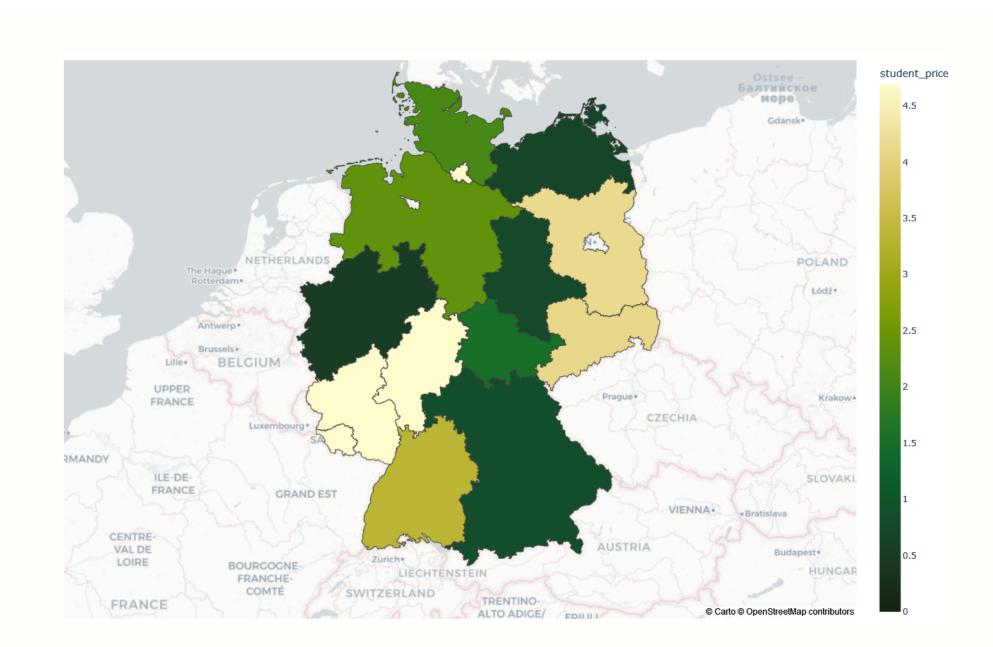


Figure 4: Price differences between German states

- Most expensive state: Saarland
- Least expensive state: North Rhine-Westphalia

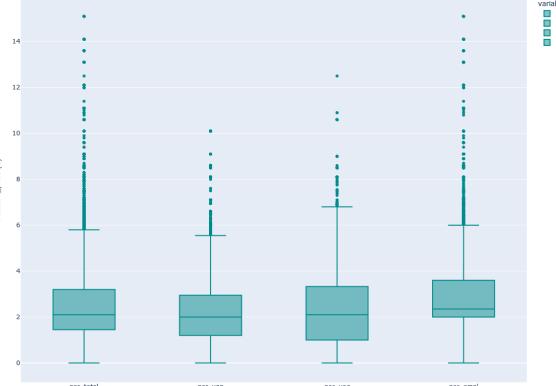
Category	Canteen name	<b>Average Price</b>
Cheapest	Heidelberg, zeughaus-Mensa im Marstall	1.09 €
Cheapest	Mensa Hochschule für Musik, Detmold	1.26 €
Cheapest	Künzelsau, Mensa Reinhold-Würth-Hochschule	1.29 €
Cheapest	Mensa HSBI, Minden	1.42 €
Cheapest	Mensa TH OWL, Höxter	1.45 €
Most Expensive	Mensa Trossingen	5.66 €
Most Expensive	Mannheim, Mensa Wagon	5.59 €
Most Expensive	Mensa Lörrach	5.54 €
Most Expensive	Mensagarten Saarbrücken	5.52 €
Most Expensive	Mensa HTW Saar Rotenbühl	5.45 €

Table 1: Comparison of the 5 cheapest and most expensive canteens

# How do average student meal prices compare according to their category?

#### Price deviation from national average by meal category median mean

**Vegetarian Omnivorous** Vegan Vegetarian Omnivorous Vegan **Germany:** -9.92 % -2.89 % +16.94 % -4.76 % 0.00 % +11.90 % Kiel: -6.59 % -7.74 % +12.03 % -14.71 % -2.94 % +17.65 %



#### Price:

- ► **Vegan:** Most affordable, with prices clustering in the lower range
- Vegetarian: Generally below the average, displaying the widest price variation
- Omnivorous: Priciest category, with the lowest spread and prices predominantly in the upper range

Figure 5: Median student prices of vegan, vegetarian, and omnivorous meals in Germany

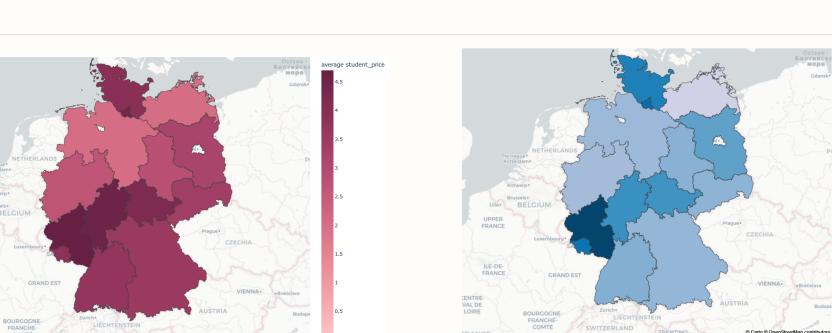


Figure 6: Average price omnivorous

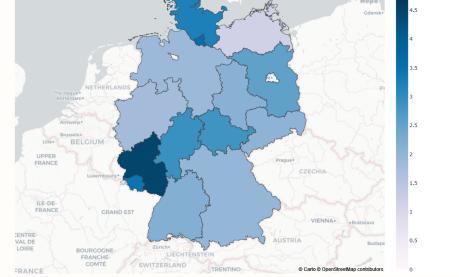


Figure 7: Average price vegetarian

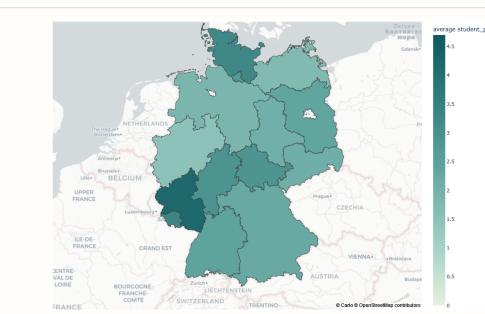


Figure 8: Average price vegan

#### Most expensive states (without Berlin, Bremen):

- ► Vegan: Rhineland-Palatinate, Saarland, Schleswig-Holstein
- ► **Vegetarian:** Rhineland-Palatinate, Hamburg, Saarland
- ► Omnivorous: Rhineland-Palatinate, Hesse, Hamburg