

DSA210 XGBoost Model Insights

Top 20 Features and Interpretations

1. **il_İstanbul** — importance: 0.276620
Metropolitan effect: Being located in Istanbul significantly impacts price per square meter due to high demand and liquidity.
2. **il_Muğla** — importance: 0.159040
Coastal premium: Tourist cities like Muğla often display elevated prices, especially in summer seasons.
3. **il_Antalya** — importance: 0.038616
Regional effect: Another popular coastal region contributing strongly to pricing predictions.
4. **kademe_1. Kademe** — importance: 0.038195
Municipal tier: Higher-tier zones usually reflect stronger infrastructure, driving prices up.
5. **isinma_tipi_Doğalgaz Sobası** — importance: 0.033357
Comfort indicator: Efficient heating correlates with better living standards and higher values.
6. **isinma_tipi_Kombi** — importance: 0.029530
Modern heating: Widespread use in new builds, often linked with higher valuation.
7. **il_İzmir** — importance: 0.024938
Metropolitan factor: A consistent contributor to high regional property values.
8. **kat_sayisi** — importance: 0.017903
Structural scale: More floors often reflect multi-unit or larger family residences.
9. **il_Kayseri** — importance: 0.017441
Regional reach: Even mid-tier cities exhibit patterns relevant for prediction.
10. **il_Aydın** — importance: 0.015425
Seasonal influence: Gaining attention as a rising second-home destination.
11. **isinma_tipi_Belirtilmemiş** — importance: 0.015051
Uncertainty factor: Missing heating type info reduces model confidence.
12. **banyo_sayisi** — importance: 0.014779
Utility space: More bathrooms = higher usability and value.
13. **isinma_tipi_Merkezi (Pay Ölçer)** — importance: 0.012511
Modern systems: Central heating with metering = better infrastructure signal.
14. **salon_sayisi** — importance: 0.011484
Lifestyle factor: More living room space often signals comfort and luxury.

15. **isinma_tipi_Yerden Isıtma** — importance: 0.011480
Premium signal: Underfloor heating is a desirable and modern feature.
16. **il_Ankara** — importance: 0.011037
Capital city effect: Institutional demand stabilizes prices in the capital.
17. **oda_sayisi_yeni** — importance: 0.010308
Total rooms: A fundamental driver of base property valuation.
18. **kademe_2. Kademe** — importance: 0.010232
Infrastructure depth: Still impactful, even if not top-tier.
19. **isinma_tipi_Kat Kaloriferi** — importance: 0.010076
Outdated systems: Linked with older buildings and lower comfort levels.
20. **il_Edirne** — importance: 0.009653
Peripheral influence: Border cities show measurable, if smaller, pricing signals.

Additional Comment

This XGBoost model's predictions are dominantly influenced by geographic location, followed by infrastructure indicators (like municipal tier) and structural property attributes (e.g., number of rooms, heating type). What's notable is how missing or unspecified data (such as "Belirtilmemiş" heating) consistently weakens feature strength-emphasizing the need for clean, complete datasets in real estate valuation models. Overall, the model reflects market logic well: it assigns weight to the most relevant factors just as a human expert would.



