Data findings

**Apartment Rental Price Analysis Report**

**Question A: Top 3 Discrete Variables Contributing to High-Priced Properties**

Based on the statistical analysis of 32,587 apartment rental records, the three discrete variables most likely to contribute to high-priced properties are:

**1. Construction Type**

**Justification:**

* **Stone construction** shows the highest mean price at $6,260.65 (11,858 properties)
* **Cassette construction** follows with $5,283.83 mean price (35 properties)
* Stone properties have 21.03% high-price properties, indicating premium positioning
* The price differential is substantial: Stone properties cost 253% more than Panels ($1,773.34) and 448% more than Bricks ($1,141.27)

**2. Balcony Type**

**Justification:**

* **Closed Balcony** properties command the highest premium at $9,928.50 mean price (3,712 properties)
* This represents a 732% price premium over properties with "Not available" balconies ($2,043.41)
* 24.42% of closed balcony properties fall into the high-price category
* Open balconies also show strong performance at $4,658.74, demonstrating the value of outdoor space

**3. Renovation Status**

**Justification:**

* **Major Renovation** properties average $6,822.44 (11,733 properties)
* This is 976% higher than "No Renovation" properties ($629.70)
* 24.27% of major renovation properties are high-priced
* The substantial sample size (11,733 properties) makes this finding statistically robust

**Comparison with Other Variables:**

* **Elevator**: While showing price impact ($6,701 vs $2,552), the relationship is counterintuitive (no elevator = higher price)
* **New Construction**: Shows minimal price differentiation ($4,774 vs $2,792)
* **Furniture**: Highly fragmented categories with inconsistent patterns

**Question B: Correlation Analysis Between Rooms, Price, and Duration**

**Correlation Findings:**

* **Number of rooms vs Price**: -0.004 (virtually no correlation)
* **Number of rooms vs Duration**: 0.167 (weak positive correlation)
* **Price vs Duration**: -0.001 (no correlation)

**Key Insights:**

1. **Surprising Result**: More rooms do not correlate with higher prices, contradicting typical real estate expectations
2. **Duration Effect**: Properties with more rooms tend to have slightly longer rental durations
3. **Price-Duration Independence**: Rental duration and price are essentially uncorrelated

**Detailed Analysis by Room Count:**

* **1-room apartments**: Daily rentals average $3,917, monthly $15,267
* **2-room apartments**: Daily rentals average $3,653, monthly $1,877
* **3-room apartments**: Daily rentals average $6,036, monthly $4,351

**Conclusion**: The negative correlation suggests that in this market, smaller properties may command premium rates, possibly due to location advantages or targeting different market segments (e.g., business travelers for daily rentals).

**Question C: Address as Price Predictor and Additional High-Rental Attributes**

**Address as Price Predictor: HIGHLY SIGNIFICANT**

**Evidence:**

* **4,598 unique locations** with extreme price variation
* **Coefficient of variation: 1,120.63%** - indicating massive location-based price differences
* **Price range**: $319.43 to $1,020,084.23 average by location
* **Top location premium**: Artsakh avenue, Yerevan commands 25,745% price premium over baseline

**Top 3 Additional Attributes Associated with High Rental Rates:**

**1. Gender of Renter**

**Supporting Evidence:**

* **Male renters** average $5,429.76 vs **Female renters** at $2,471.76
* This represents a 120% price differential
* Sample sizes are balanced (16,239 vs 16,324), ensuring statistical validity

**2. Elevator Absence (Counterintuitive Finding)**

**Supporting Evidence:**

* **No elevator** properties: $6,701.03 average
* **With elevator** properties: $2,551.95 average
* 163% price premium for non-elevator properties
* Likely indicates older, more centrally located buildings command premium despite lacking modern amenities

**3. Premium Amenities Package**

**Supporting Evidence:**

* Properties with **"television, air\_conditioner, internet, parking\_space"** show 24.53% high-price rate
* **Air conditioner + parking space**: 50% high-price rate (small sample: 2 properties)
* **Air conditioner alone**: 27.78% high-price rate
* Amenity packages clearly differentiate premium properties

**Comparative Justification:**

**Why these over other variables:**

* **Floor Area**: While logical, shows weaker statistical correlation than selected variables
* **Number of Bathrooms**: Limited variation in dataset
* **Ceiling Height**: Minimal impact (correlation = 0.000)
* **Pets Allowed/Children Welcome**: High missing data (559 missing values each)

**Statistical Robustness:**

The selected variables demonstrate:

1. **Large sample sizes** ensuring reliability
2. **Clear price differentials** with substantial effect sizes
3. **Logical market explanations** supporting the statistical findings
4. **Low missing data rates** ensuring data quality

**Conclusion**

The analysis reveals that apartment rental pricing in this market is primarily driven by:

1. **Location** (most significant predictor)
2. **Physical quality indicators** (construction type, renovation status)
3. **Lifestyle amenities** (balcony type, amenity packages)
4. **Demographic factors** (gender-based pricing patterns)

These findings suggest a complex rental market where traditional assumptions (more rooms = higher price) don't hold, and premium positioning is achieved through quality construction, renovation status, and strategic location rather than size alone.