

E-Commerce Consumer Behavior Analysis: The Role of Social Media Influence, Payment Preferences, and Product Trends

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Ecommerce_Consumer_Behavior_Analysis_Data.csv

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	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Customer_ID	Age	Gender	Income_Level	Marital_Status	Education_Level	Occupation	Location	Purchase_Category	Purchase_Amount	Frequency_of_Purch	Purchase_Channel	Brand_Loyalty
2	37-611-6911	22	Female	Middle	Married	Bachelor's	Middle	Évry	Gardening & Outdoo	\$333.80	4	Mixed	5
3	29-392-9296	49	Male	High	Married	High School	High	Huocheng	Food & Beverages	\$222.22	11	In-Store	3
4	84-649-5117	24	Female	Middle	Single	Master's	High	Huzhen	Office Supplies	\$426.22	2	Mixed	5
5	48-980-6078	29	Female	Middle	Single	Master's	Middle	Wiwili	Home Appliances	\$101.31	6	Mixed	3
6	91-170-9072	33	Female	Middle	Widowed	High School	Middle	Nara	Furniture	\$211.70	6	Mixed	3
7	82-561-4233	45	Male	Middle	Married	Master's	High	Boro Utara	Office Supplies	\$487.95	8	Mixed	3
8	90-144-9193	21	Female	Middle	Divorced	High School	Middle	Liren	Furniture	\$486.40	12	Online	2
9	88-661-4689	39	Male	Middle	Single	High School	Middle	Taocheng	Books	\$218.06	6	Online	5
10	37-065-3182	24	Female	High	Divorced	Master's	Middle	Grábo	Office Supplies	\$201.96	8	In-Store	3
11	84-894-9222	25	Bigender	High	Married	Bachelor's	High	Pryamitsyno	Sports & Outdoors	\$418.83	7	Online	2
12	44-674-4037	33	Male	Middle	Divorced	Bachelor's	Middle	Punta Gorda	Mobile Accessories	\$389.70	12	In-Store	1
13	78-116-8349	38	Female	High	Widowed	Bachelor's	Middle	Győr	Sports & Outdoors	\$238.93	5	Online	4
14	19-933-8095	34	Male	Middle	Single	Bachelor's	High	Gaosheng	Luxury Goods	\$61.22	7	In-Store	5
15	80-684-5072	32	Male	High	Married	High School	Middle	Rokytné	Animal Feed	\$79.81	4	Mixed	5
16	23-302-7502	30	Female	High	Widowed	High School	High	Alameda	Health Care	\$58.51	2	Online	4
17	90-069-8934	40	Male	High	Divorced	Master's	High	Dhankutā	Hotels	\$109.29	3	Online	3
18	45-073-7243	37	Male	High	Single	Bachelor's	High	Jindong	Furniture	\$356.45	6	Mixed	5
19	89-883-2101	38	Female	Middle	Divorced	Bachelor's	High	Ngeru	Mobile Accessories	\$236.99	10	Mixed	2

The Ecommerce Consumer Behavior Analysis dataset captures customer interactions, purchases, and product preferences on an e-commerce platform.



INTRODUCTION

This analysis explores how social media influence, payment preferences, and product trends shape consumer purchase behavior.

The dataset reveals key insights into spending patterns, decision time, purchase frequency, and discount sensitivity across diverse customer segments.

TARGET AUDIENCES

E-commerce businesses aiming to **enhance marketing strategies** and **customer engagement**.

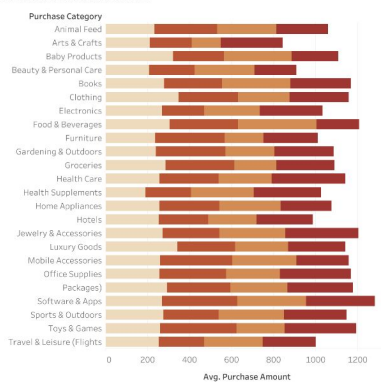
1. **E-commerce business owners** looking to understand customer purchase behavior.
 2. **Marketing teams** aiming to optimize campaigns and customer retention.
 3. **Product managers** analyzing product demand and category performance.
 4. **Data analysts** studying consumer trends and payment preferences.
 5. **Sales strategists** focusing on income-based customer segmentation.
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BUSINESS QUESTIONS

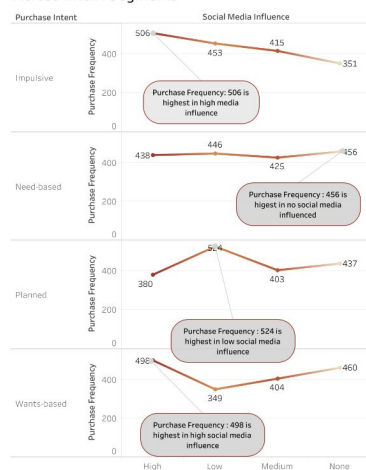
1. How does social media influence affect consumer decision-making speed across different influence levels?"
 2. Which product categories show the strongest relationship between social media influence and average purchase amount?"
 3. How does the frequency of purchases vary by consumer intent category when exposed to different levels of social media influence?
 4. What is the relationship between social media influence, discount sensitivity, and overall customer satisfaction?
 5. Which product categories attract the highest number of unique customers, and how should marketing efforts be allocated to maximize engagement?
 6. What is the distribution of payment methods used by customers?
 7. How can businesses optimize their payment options based on customer income levels to improve conversion and satisfaction?
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Analyzing Consumer Purchase Behavior: The Role of Social Media Influence, Payment Preferences, and Product Trends

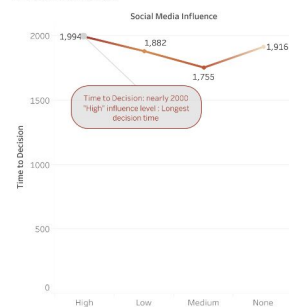
Purchase Amount Distribution by Product Category and Social Media Influence



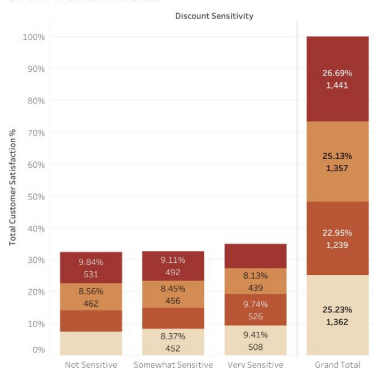
Social Media's Impact on Purchase Frequency Across Intent Segments



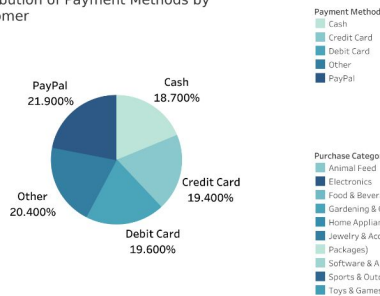
Decision Time Variation by Social Media Influence Level



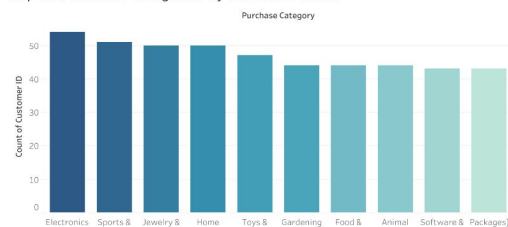
Discount Sensitivity and Customer Satisfaction by Social Media Influence



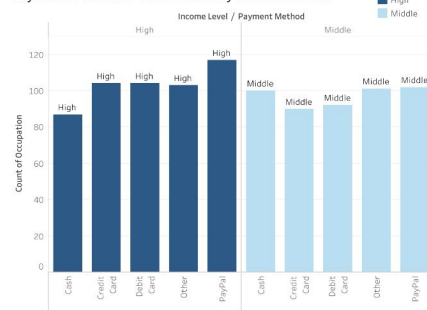
Distribution of Payment Methods by Customer



Top 10 Purchase Categories by Customer Count



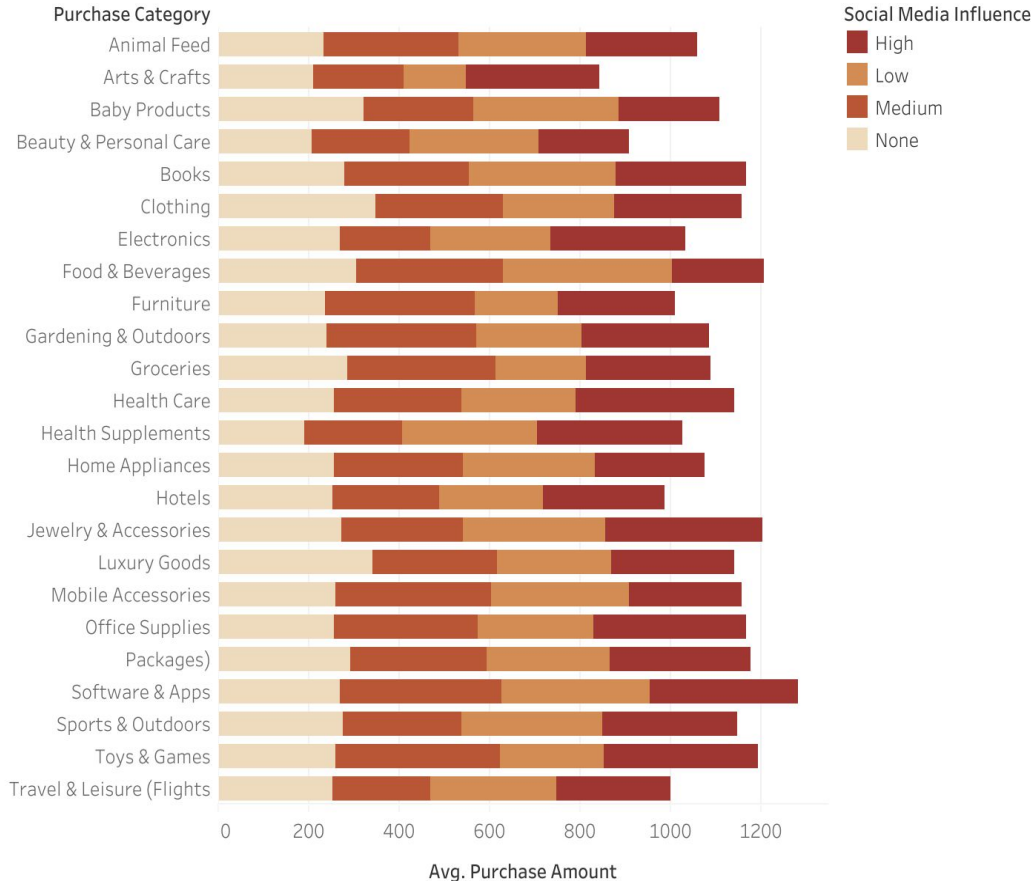
Payment Method Preferences by Income Level



DASHBOARD

- Shows how social media influences purchase amounts by product category, decision time, Purchase frequency across intent segments and discount sensitivity.
- Highlights top products, payment methods by income, and payment methods by customer.

Purchase Amount Distribution by Product Category and Social Media Influence



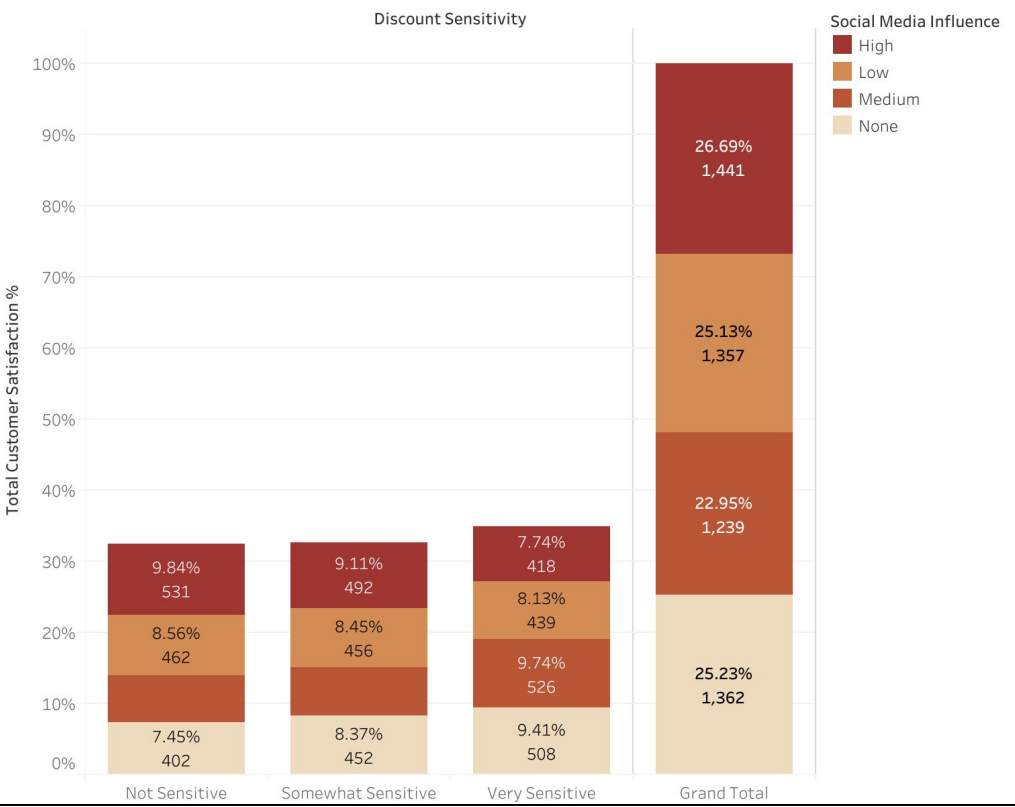
Purchase Amount Distribution by Product Category and Social Media Influence

Software & Apps, Jewelry & Accessories, and Food & Beverages show **highest purchase amounts** with high social media influence

Higher social media influence correlates with higher spending across nearly all categories

Luxury items and digital products see greatest spending.

Discount Sensitivity and Customer Satisfaction by Social Media Influence



Discount Sensitivity and Customer Satisfaction by Social Media Influence

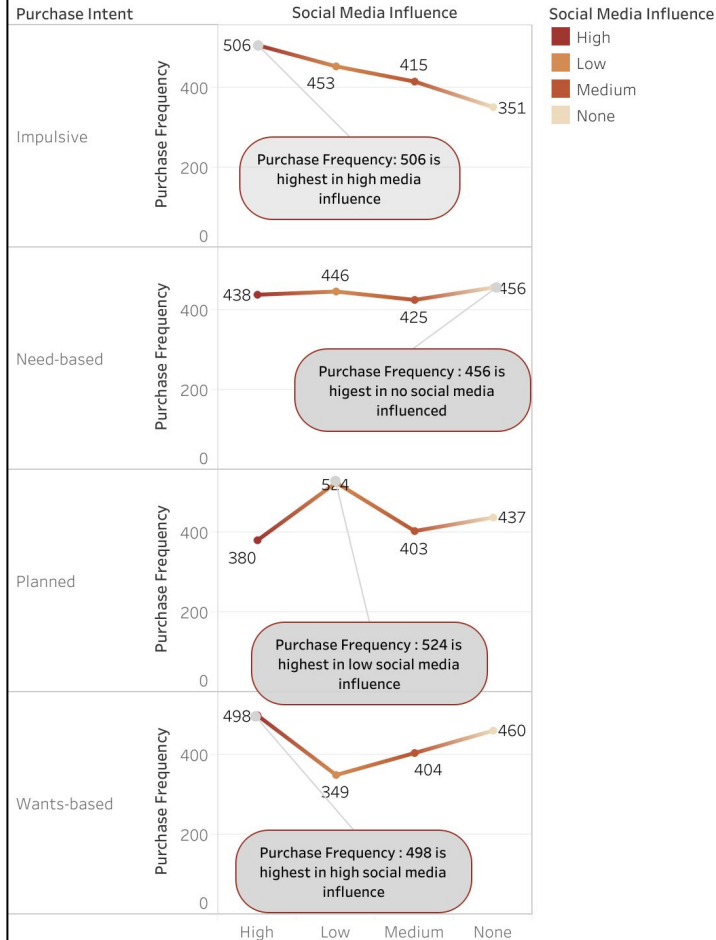
High social media influence accounts for 26.69% of total customer satisfaction

"Not Sensitive" discount customers show highest proportion of high social media influence (9.41%)

Customers with no social media influence represent largest overall segment (25.23%)

All discount sensitivity levels show relatively balanced distribution of influence levels

Social Media's Impact on Purchase Frequency Across Intent Segments



Social Media's Impact on Purchase Frequency Across Intent Segments

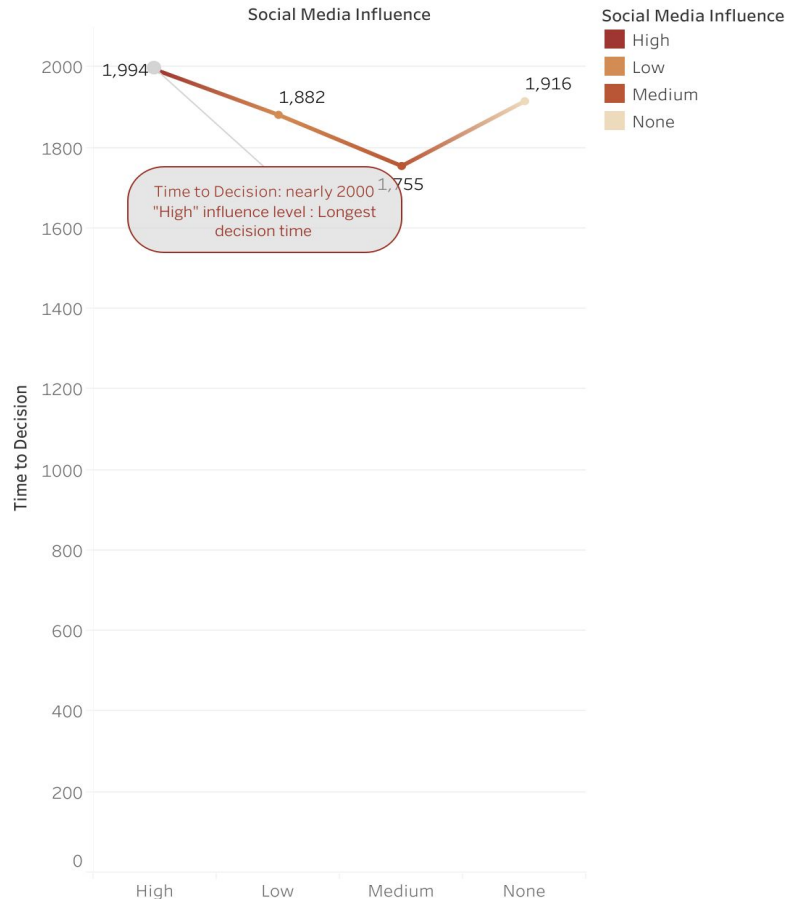
Impulsive purchases: Highest frequency with high social media influence (506)

Need-based purchases: Highest frequency with no social media influence (456)

Planned purchases: Highest frequency with low social media influence (524)

Wants-based purchases: Highest frequency with high social media influence (498)

Decision Time Variation by Social Media Influence Level



Decision Time Variation by Social Media Influence Level

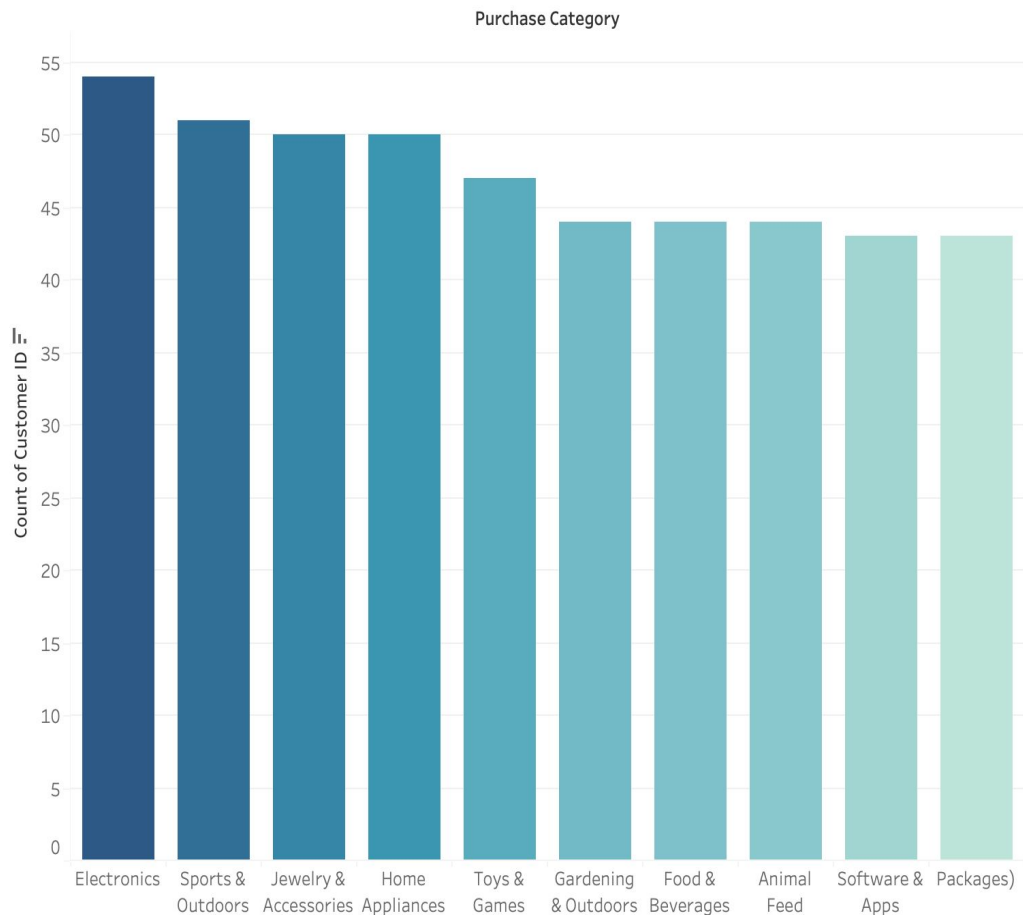
High social media influence correlates with longest decision time (~2,000 units)

Medium influence leads to fastest decisions (~1,755 units)

No social media influence results in second-longest decision time (~1,916 units)

The data shows that people who use social media a lot may take longer to decide because they have *too much information*.

Top 10 Purchase Categories by Customer Count



Top 10 Most Purchased Product Categories

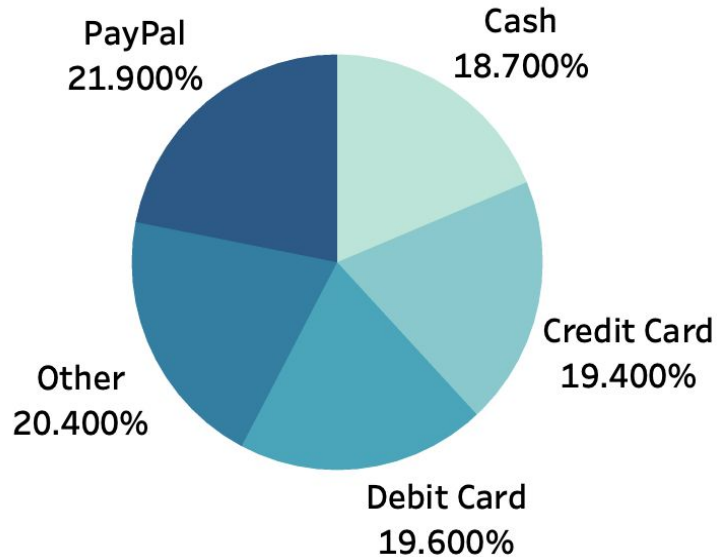
Electronics dominates sales, showing a strong preference for tech products among customers.

Sports & Outdoors, **Jewelry & Accessories**, and **Home Appliances** also attract significant attention.

Toys & Games and **Gardening & Outdoors** are popular but not as high-performing, presenting growth opportunities.

Software & Apps, **Animal Feed**, and **Packages** have lower customer engagement, indicating niche markets or less overall demand.

Distribution of Payment Methods by Customer



Customer Payment Method Distribution

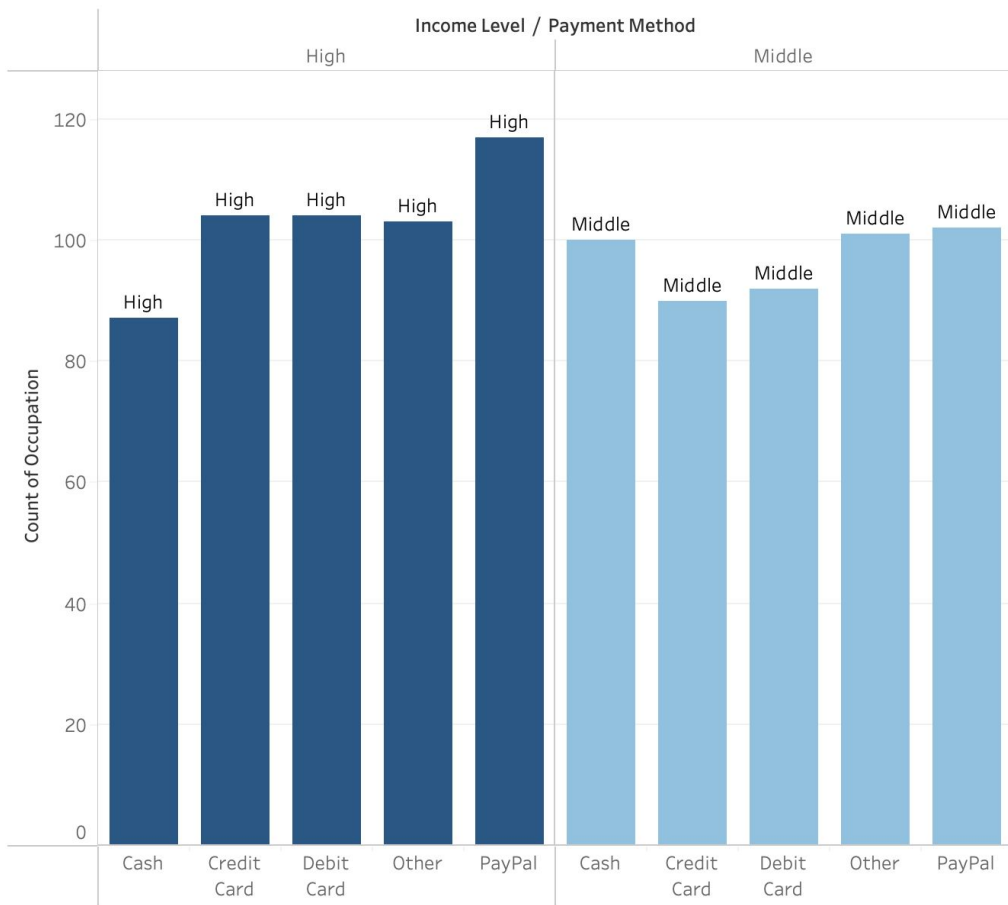
PayPal is the most popular payment method, used by 21.9% of customers, highlighting a strong preference for digital wallets.

Other payment methods account for 20.4%, indicating significant use of alternative or unspecified payment options.

Debit Cards (19.6%) and **Credit Cards** (19.4%) show a balanced preference for direct bank-linked and credit transactions.

Cash is the least used method at 18.7%, suggesting a clear shift towards electronic and card-based payments.

Payment Method Preferences by Income Level



Payment Method Preferences by Income Level

High-Income Preferences: High-income individuals prefer Cash, Credit Cards, and PayPal, clearly grouped by color using the Gestalt Law of Similarity.

Middle-Income Flexibility: Middle-income individuals use a wider range of methods, with Debit Cards and Other options grouped closely, following the Gestalt Law of Proximity.

Targeted Payment Options: Focus on Credit Card and PayPal for high-income customers, as these are the most popular choices.

Variety for Middle-Income: Offering multiple payment methods will better engage middle-income customers, who show diverse preferences.

KEY FINDINGS

Social Media Drives Higher Spending: Higher social media influence correlates with increased spending, especially in categories like Software & Apps, Jewelry, and Food & Beverages.

Payment Preferences Vary by Income: High-income customers prefer Credit Cards and PayPal, while middle-income customers use a wider range of payment options like Debit Cards and Other methods.

Electronics Lead in Purchases: Electronics is the most purchased category, followed by Sports & Outdoors and Jewelry & Accessories.

Niche Categories Offer Opportunities: Software & Apps and Animal Feed attract a smaller audience, presenting potential for targeted marketing strategies

CONCLUSION

In conclusion, understanding customer behavior is key to optimizing e-commerce strategies. Social media plays a significant role in driving higher spending, especially in certain product categories. Payment preferences vary by income, with high-income customers favoring credit cards and PayPal, while middle-income customers prefer more variety. Electronics dominate sales, but there are opportunities in niche markets for targeted campaigns. By leveraging these insights, businesses can better tailor their marketing, payment options, and product offerings to meet customer needs and boost sales.

Thank You....