How Does JD.com Unlock Value from Its High-Value Customers?

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CONTENTS

Part 01

Research Background

JD.com

The largest retailer in China

01 **Self-operated supply chain**

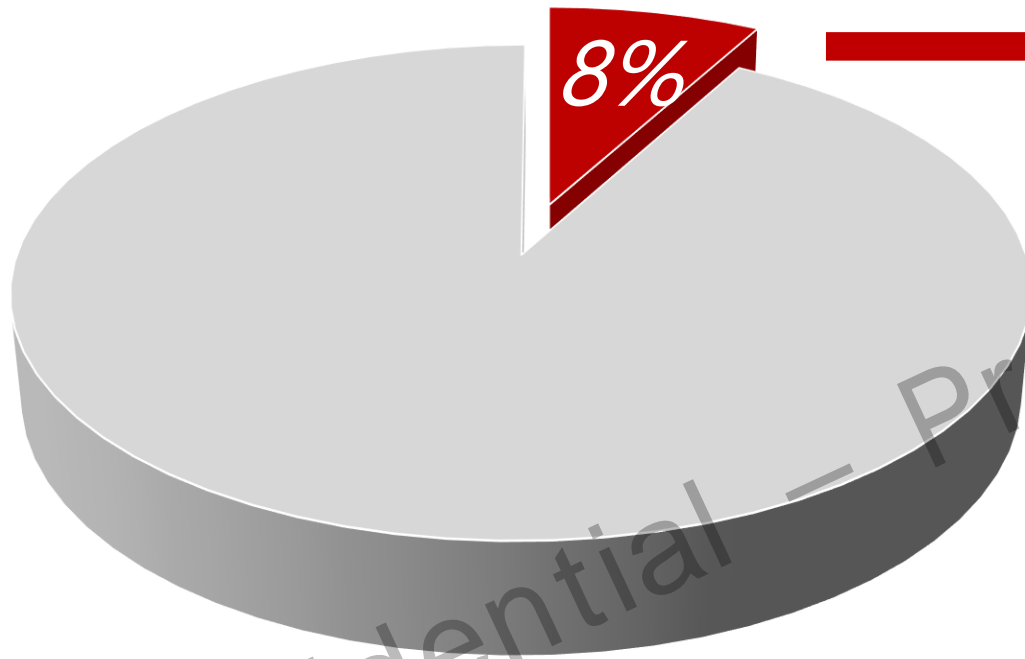**02** **Fast delivery**

03 **Guaranteed authentic products**

"Making Lives Better through Technology"

We Target High-value Customers (HVC)

8%

Contributed to ***60%+*** of GMV

High Frequency

High Consumption Level

588M active users per year

Focus on E-commerce Shopping Behaviors

Precise Marketing →

Demographics

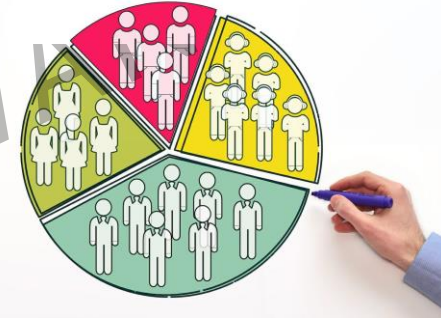**Shopping Preferences**

Product Bundles

Shopping Journey (Click / Channel/ Conversion?)

...

Algorithms used by JD.com

Recommendation, search ranking, ad targeting, price, promotion

...

Part 02

Research Motivation & Questions

Motivation

High profitability of high-value customer

Importance of bundle purchase

Research Sub-questions

1 - Who are HVCs? What are their typical demographic features?

2 - What are their most frequently bought product bundles? Do they greatly vary from NHVCs? Any preferences when choosing products?

3 - What are the features of their shopping journey on JD (click time, channel, purchase)?

Research Value

More precise recommendation function

"You may also like"

"Frequently bought together"

01

Better membership program design

02

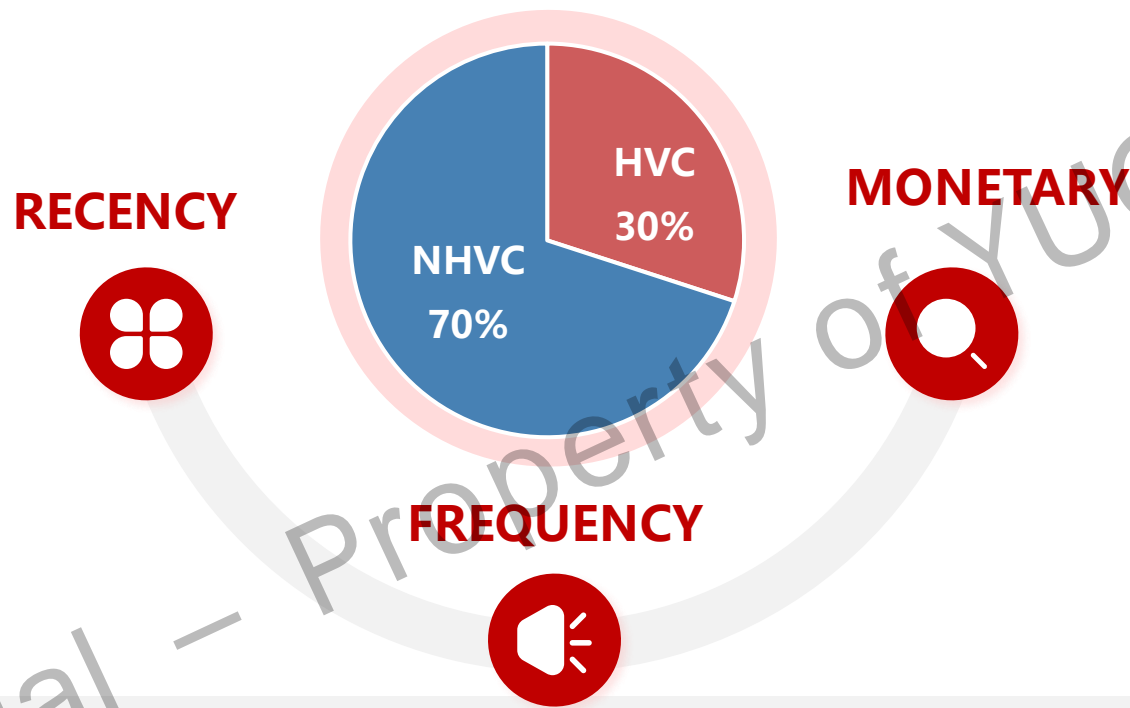## Capture greater value from HVCs

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Part 03

Research Strategy & Findings

HVC Selection - RFM

RECENCY

MONETARY

FREQUENCY

HVC
30%

NHVC
70%

Started by applying the **RFM model** to score around **460,000** users on the platform.

Classified the top **30%** as high-value customers (HVC) and the remaining **70%** as non-high-value customers (NHVC)

This classification helped us compare the two groups in both user **structure** and **behavior.**
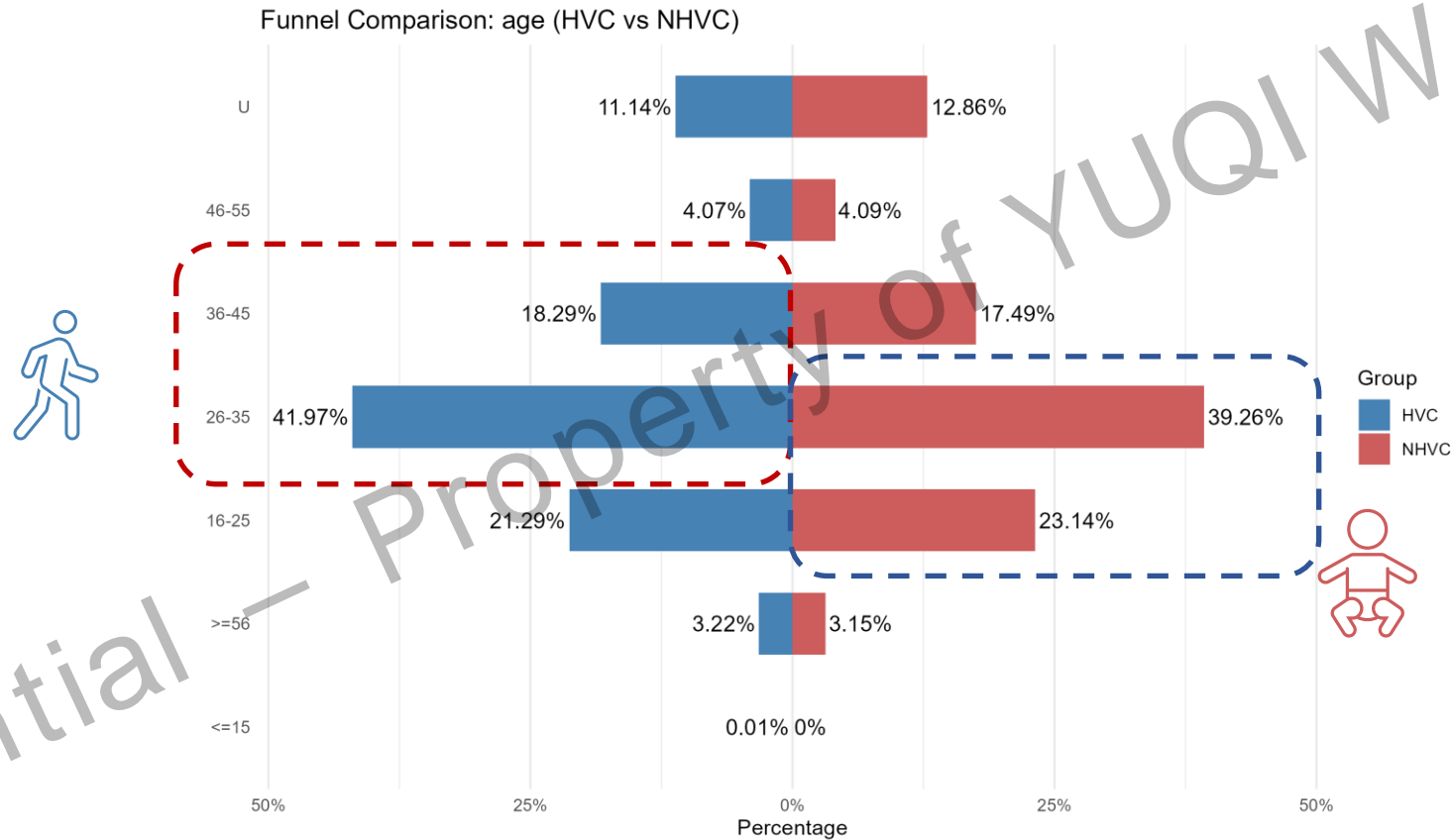
Demographic Comparison

Age

Education Level

Marital Status

Purchasing Power

Gender

City Tier

Membership Status

Funnel Comparison: age (HVC vs NHVC)

Age	HVC	NHVC
U	11.14%	12.86%
46-55	4.07%	4.09%
36-45	18.29%	17.49%
26-35	41.97%	39.26%
16-25	21.29%	23.14%
>=56	3.22%	3.15%
<=15	0.01%	0%

Group
HVC
NHVC

Percentage

The **26–35** age group is the **largest segment** in both group. However, **HVC users have a higher proportion in the 36–45 group**. This shows that HVCs tend to be **more mature and steadier** in their consumption.
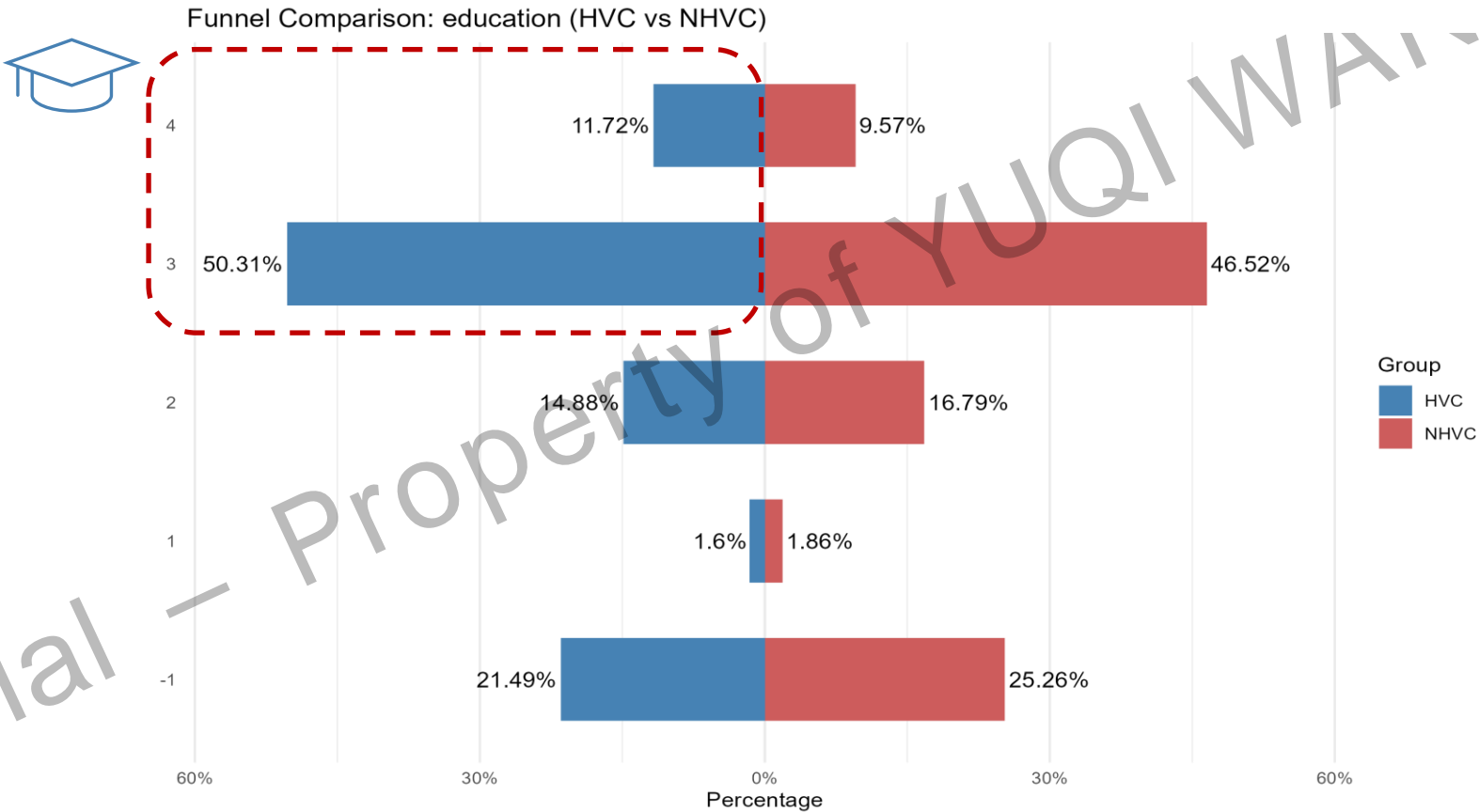
Demographic Comparison

Age

Education Level

Marital Status

Purchasing Power

Gender

City Tier

Membership Status

Funnel Comparison: education (HVC vs NHVC)

4 — 11.72% (HVC) | 9.57% (NHVC)

3 — 50.31% (HVC) | 46.52% (NHVC)

2 — 14.88% (HVC) | 16.79% (NHVC)

1 — 1.6% (HVC) | 1.86% (NHVC)

-1 — 21.49% (HVC) | 25.26% (NHVC)

Group
- HVC
- NHVC

60%   30%   0%   30%   60%
Percentage

HVCs are more concentrated in the **higher education** groups, while NHVCs dominate the lower levels. This suggests that users with better education are more likely to become high-value customers, possibly due to **stronger decision-making** and **more consistent spending habits**.
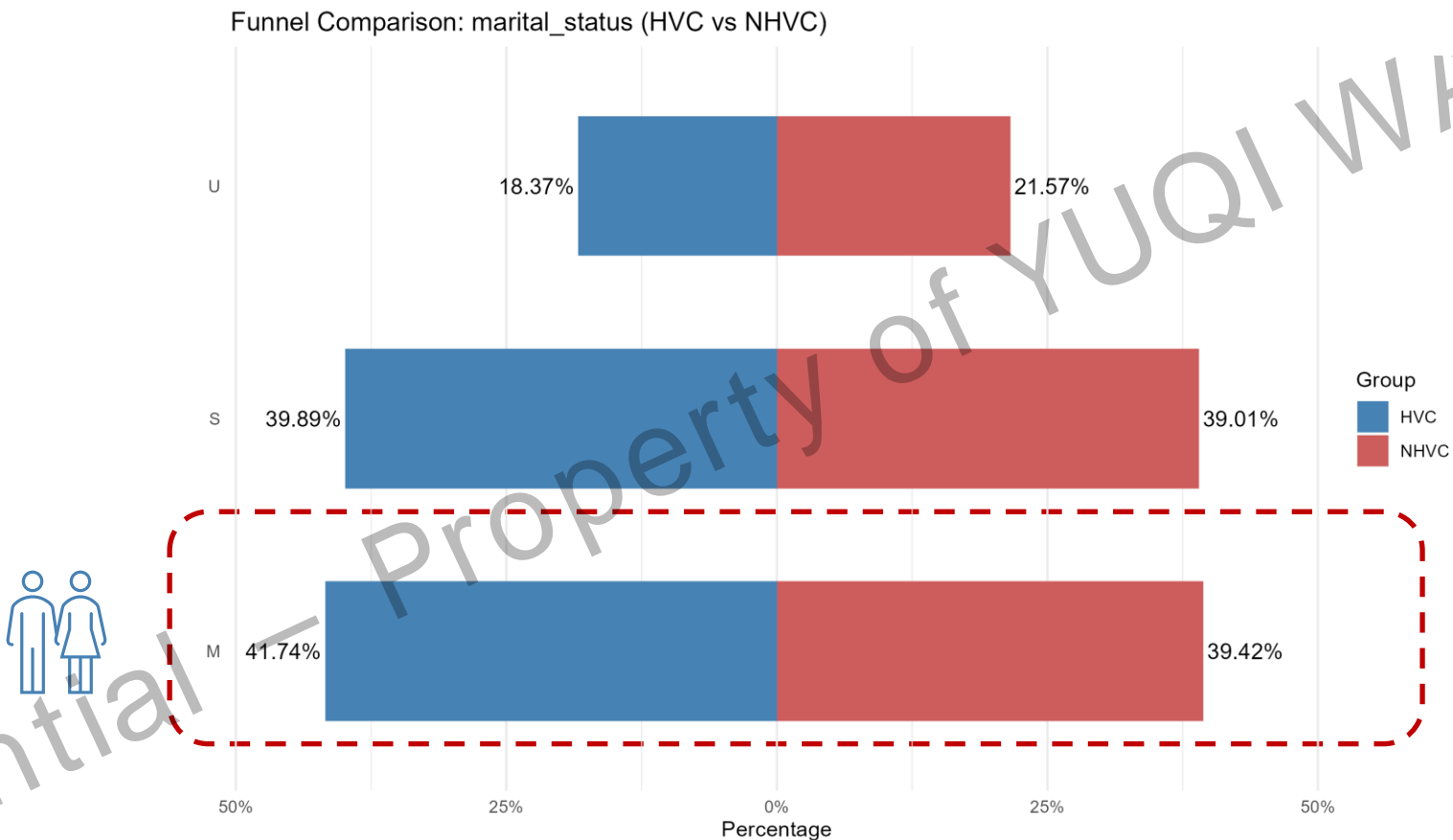
Demographic Comparison

Age

Education Level

Marital Status

Purchasing Power

Gender

City Tier

Membership Status

Funnel Comparison: marital_status (HVC vs NHVC)

U   18.37%   21.57%

Group
- HVC
- NHVC

S   39.89%   39.01%

M   41.74%   39.42%

50%   25%   0%   25%   50%

Percentage
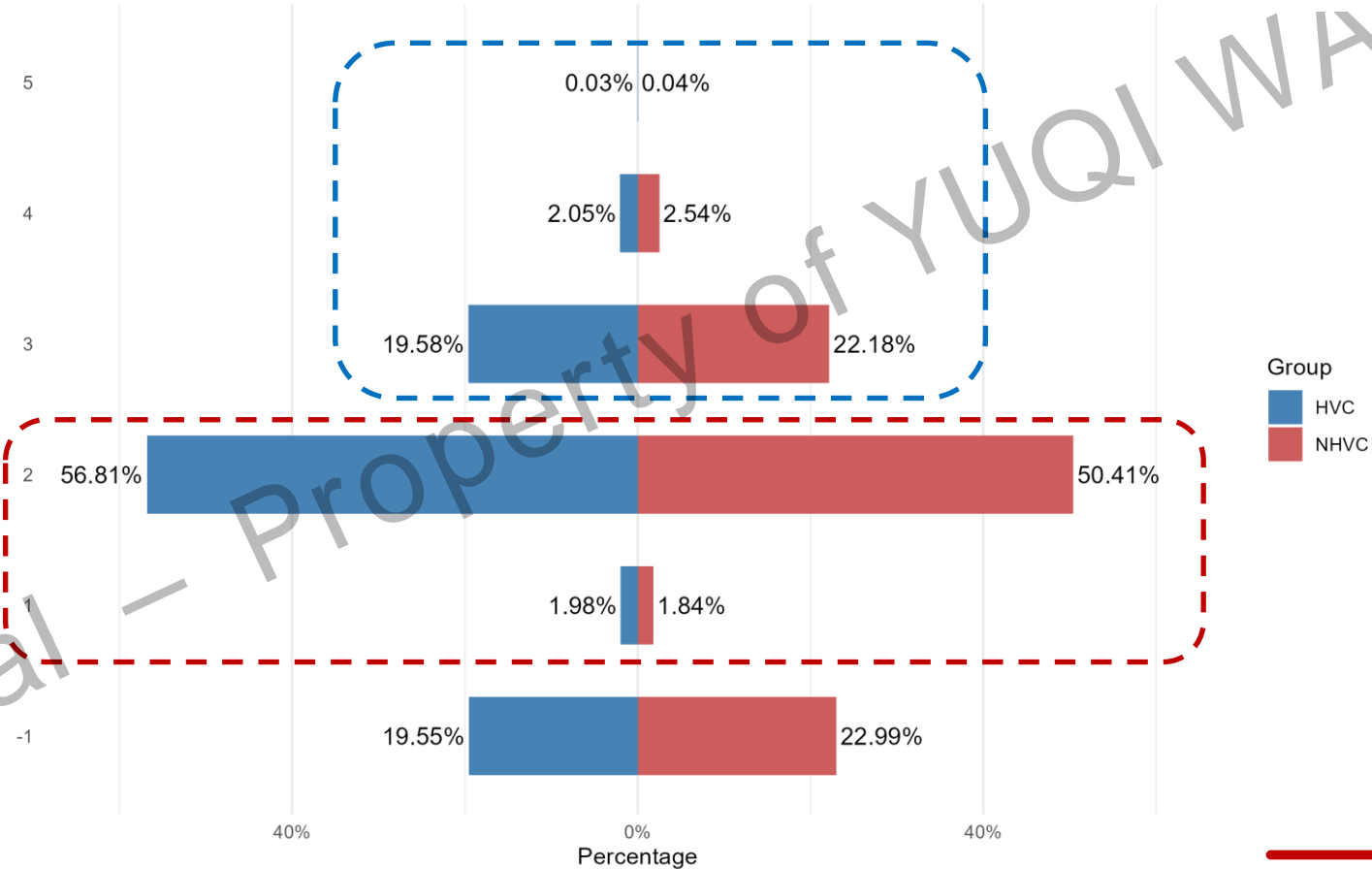
Married users are much more **common in the HVC** group. This implies that **family responsibility** and **income stability** may contribute to higher user value.

Demographic Comparison

Age

Education Level

Marital Status

Purchasing Power

Gender

City Tier

Membership Status

Funnel Comparison: purchase_power (HVC vs NHVC)

0.03% 0.04%

2.05% 2.54%

19.58% 22.18%

Group
HVC
NHVC

56.81% 50.41%

1.98% 1.84%

19.55% 22.99%

40% 0% 40%
Percentage

HVCs dominate the **middle level**, while NHVCs surprisingly appear more often in the high-level group. Strong **spending potential alone doesn't mean high customer value**.
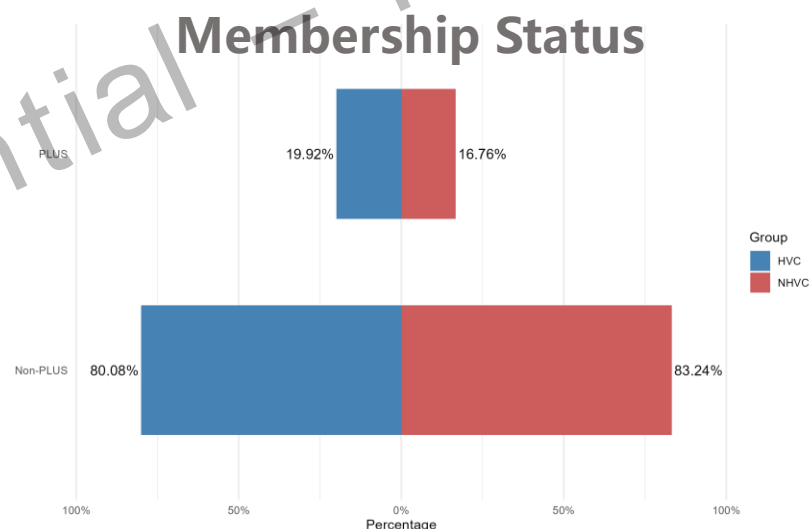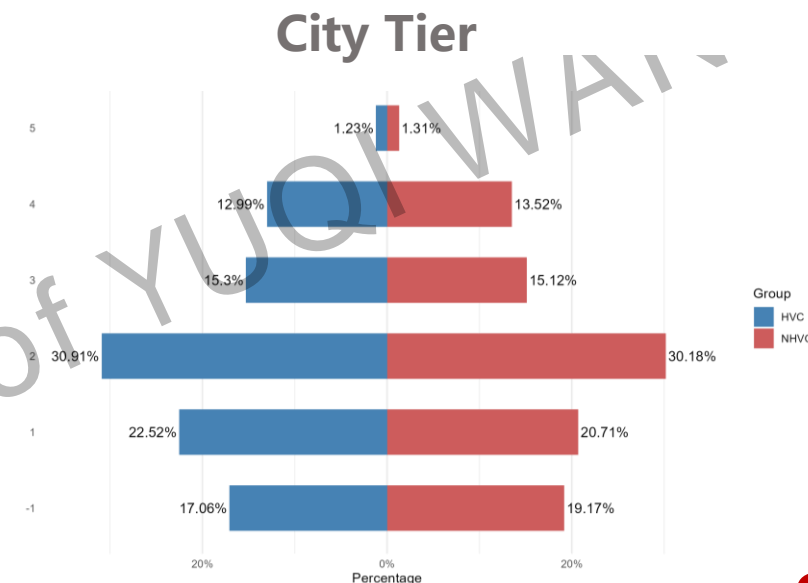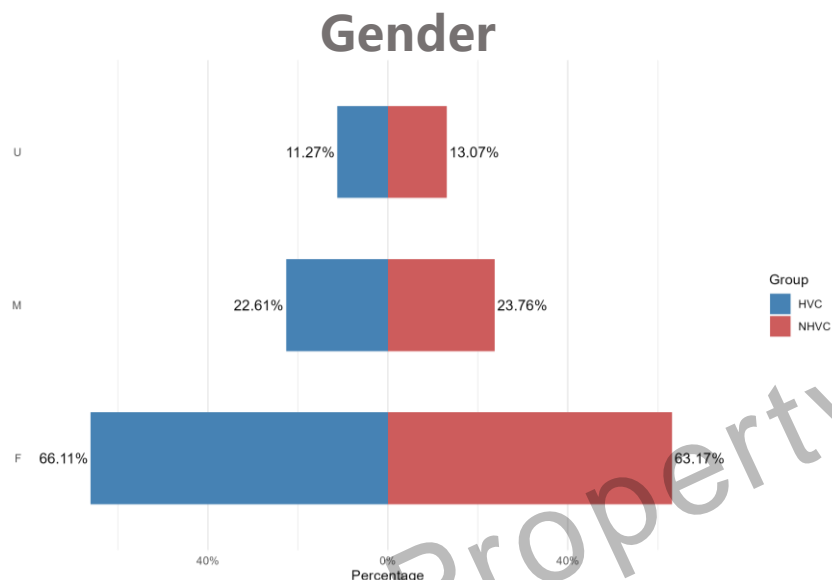
Demographic Comparison

Age

Education Level

Marital Status

Purchasing Power

Gender

City Tier

Membership status

Gender

	HVC	NHVC
U	11.27%	13.07%
M	22.61%	23.76%
F	66.11%	63.17%

Group: HVC, NHVC

City Tier

	HVC	NHVC
5	1.23%	1.31%
4	12.99%	13.52%
3	15.3%	15.12%
2	30.91%	30.18%
1	22.52%	20.71%
-1	17.06%	19.17%

Group: HVC, NHVC

Membership Status

	HVC	NHVC
PLUS	19.92%	16.76%
Non-PLUS	80.08%	83.24%

Group: HVC, NHVC

Other factors like **gender, city tier, and membership status** show smaller differences. These variables are **not strong indicators** of user value in our case.
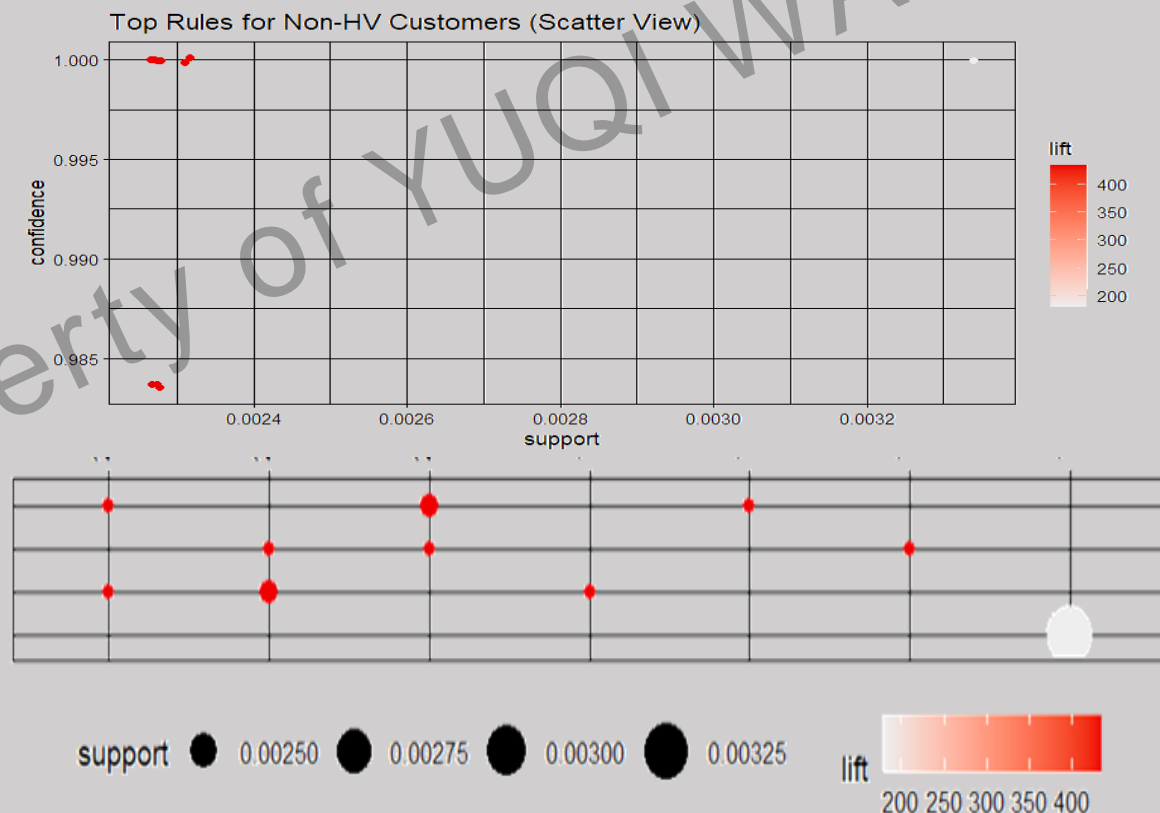
Market Basket Analysis

HVC

Top Rules (Scatter View)

NHVC

Top Rules for Non-HV Customers (Scatter View)
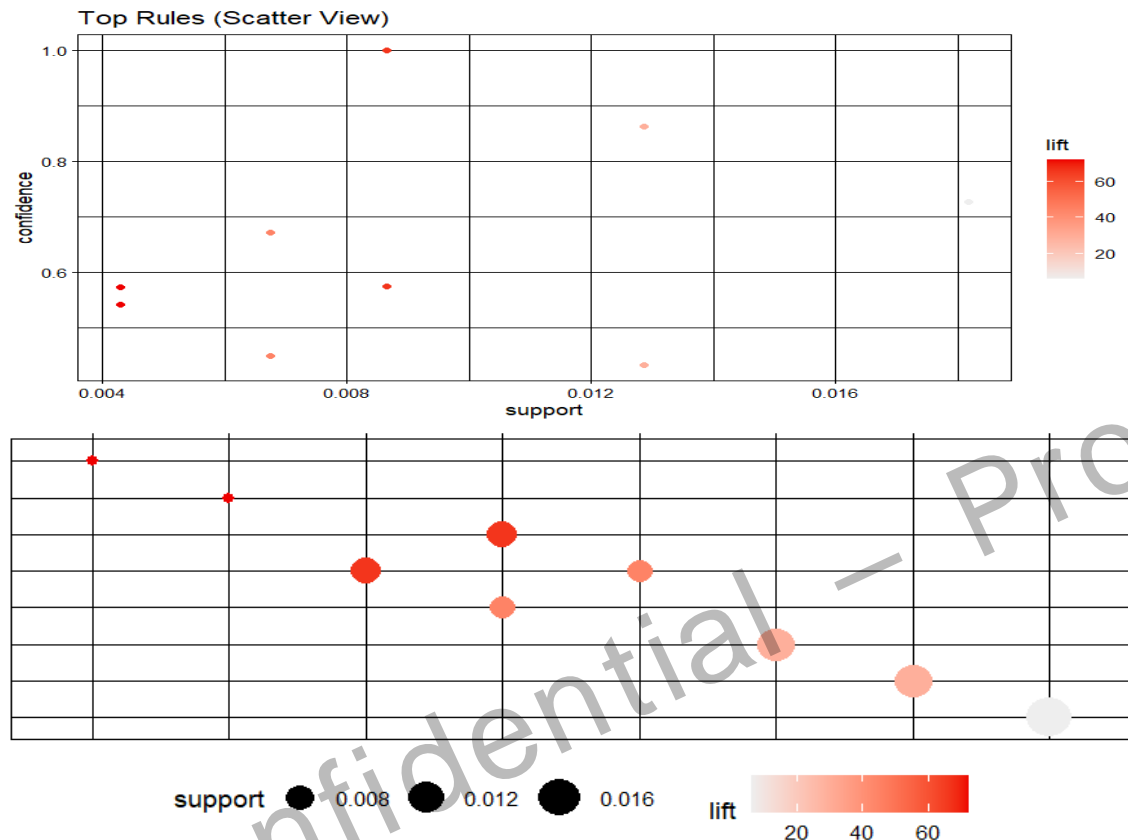
Among HVCs, the rules are more **diverse**, with **higher support** and **stable confidence** levels. Some bundles show clear two-way relationships, which reflect repeated and consistent purchase habits.

For NHVCs, the rules are **fewer** and **more concentrated**. Most combinations appear only among small user groups, with **lower support**. Their behavior is less structured.

Market Basket Analysis

rules	support	confidence	coverage	lift	count
{213fdcf150} => {be1809c946}	0.0043	0.5728	0.0075	72.2464	586
{be1809c946} => {213fdcf150}	0.0043	0.5416	0.0079	72.2464	586
{73af671ce8} => {84cf7e36da}	0.0086	1.0000	0.0086	66.3740	1179
{84cf7e36da} => {73af671ce8}	0.0086	0.5734	0.0151	66.3740	1179
{84cf7e36da} => {ed7a6a7cd7}	0.0067	0.4480	0.0151	44.5233	921
{ed7a6a7cd7} => {84cf7e36da}	0.0067	0.6708	0.0101	44.5233	921
{6717b7c979} => {38d636d2a6}	0.0129	0.8628	0.0149	29.0494	1754
{38d636d2a6} => {6717b7c979}	0.0129	0.4328	0.0297	29.0494	1754
{d3e31fdd6e} => {068f4481b3}	0.0182	0.7262	0.0250	5.9024	2480

| rules	support	confidence	coverage	lift	count
{681a29328b} => {e3e8d85965}	0.002271954	1.0000000	0.002271954	432.9441	721
{e3e8d85965} => {681a29328b}	0.002271954	0.9836289	0.002309767	432.9441	721
{681a29328b} => {844a43564c}	0.002271954	1.0000000	0.002271954	432.9441	721
{844a43564c} => {681a29328b}	0.002271954	0.9836289	0.002309767	432.9441	721
{e3e8d85965} => {844a43564c}	0.002309767	1.0000000	0.002309767	432.9441	733
{844a43564c} => {e3e8d85965}	0.002309767	1.0000000	0.002309767	432.9441	733
{681a29328b,e3e8d85965} => {844a43564c}	0.002271954	1.0000000	0.002271954	432.9441	721
{681a29328b,844a43564c} => {e3e8d85965}	0.002271954	1.0000000	0.002271954	432.9441	721
{844a43564c,e3e8d85965} => {681a29328b}	0.002271954	0.9836289	0.002309767	432.9441	721
{73af671ce8} => {84cf7e36da}	0.003349635	1.0000000	0.003349635	179.4955	1063

{73af671ce8} ⇒ {84cf7e36da}

One shared product bundle appeared in both groups with 100% confidence. This shows the combination is **widely accepted**, making it suitable as a default recommendation for all users, including new customers.
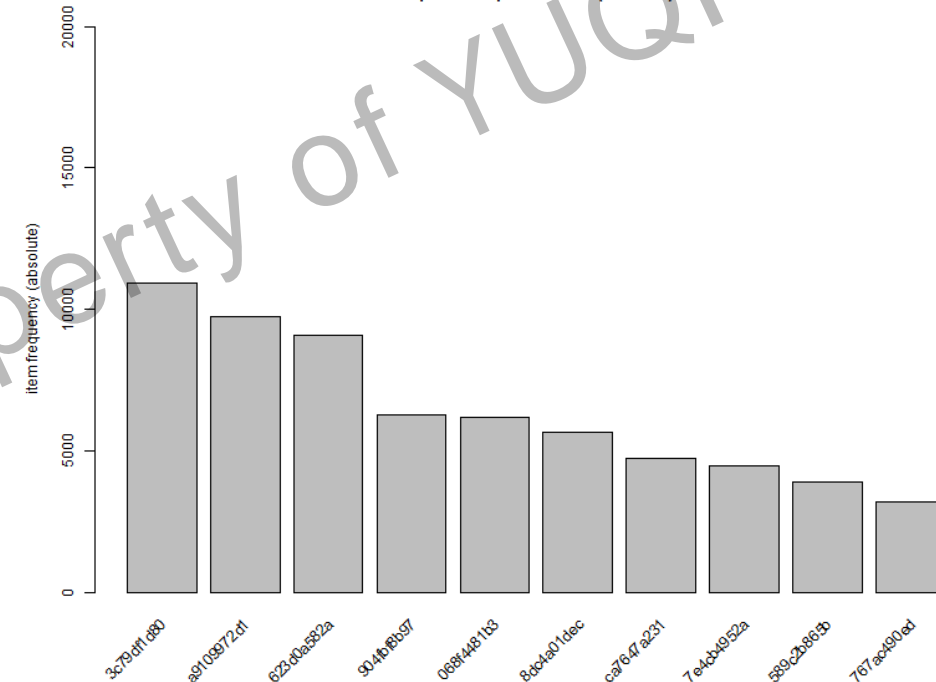
Market Basket Analysis
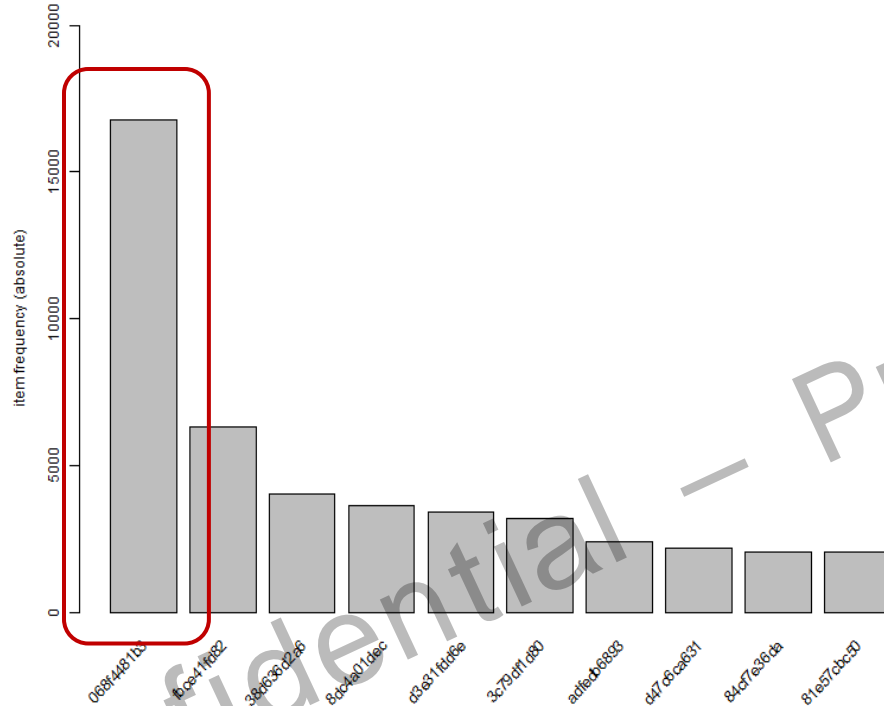
One product in the **HVC** group with nearly **18,000 purchases**, far ahead of the rest. In the **NHVC** group, purchases are more **evenly spread**, showing lower brand consistency.

Purchasing Behaviors

- We analyzed order_data for both HVC & NHVC, focusing on two key metrics, quantity & final_unit_price.
- Conducting statistical analysis to compare their purchasing behaviors.

Metrics	Statistical Measures	HVC	NHVC
Quantity	Min	1	1
	Max	1162	200
	Mean	2	1.24
	Var	45.03	1.5
	Sd	6.71	1.22
Final Unit Price	Min	0.1	0
	Max	12158	1100
	Mean	110.47	70.72
	Var	9400.57	2586.19
	Sd	96.96	50.85

Quantity

HVC showing much more active purchasing.

Unit Price

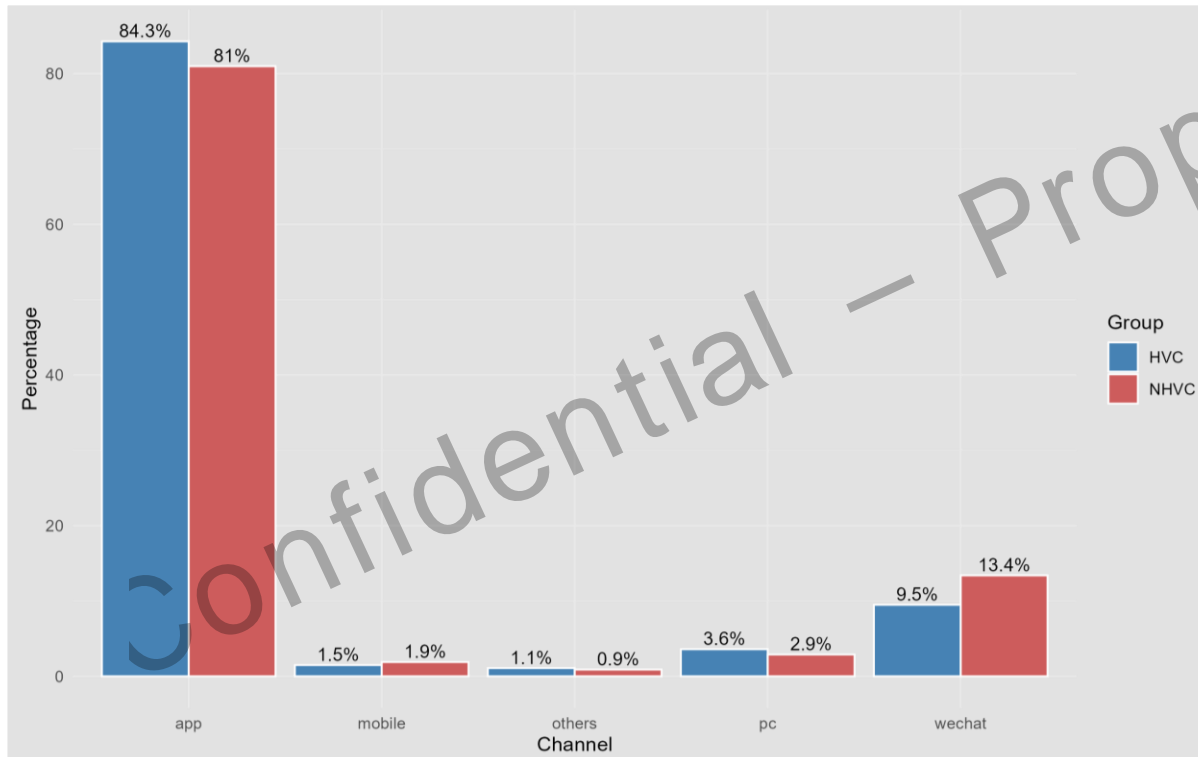HVC spent more expensive SKU.

Standard Deviation

Indicating a wider range of consumption volume & price variability.

Click & Conversion Channels
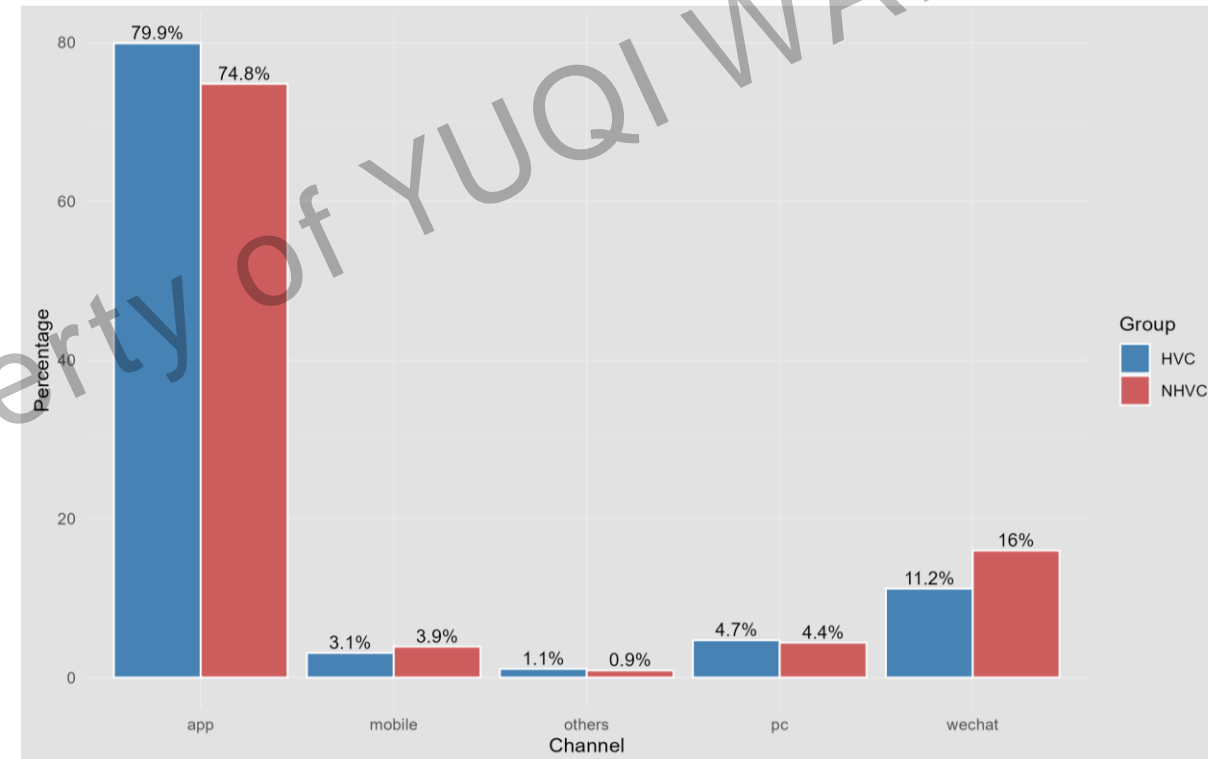
- We filtered out users who actually completed purchases, splitting them into HVC & NHVC groups,
- Examined how their click & conversion channels differ.

Click Stage

Conversion Stage

✓ **HVC are highly App-dependent throughout both the click & conversion stages.**

Click-to-purchase Conversion

How long it takes consumers to convert

- We calculated the time interval between the first request_time (JD_click_data) & the order_time (JD_order_data), in hours.

During which time periods conversions typically occur

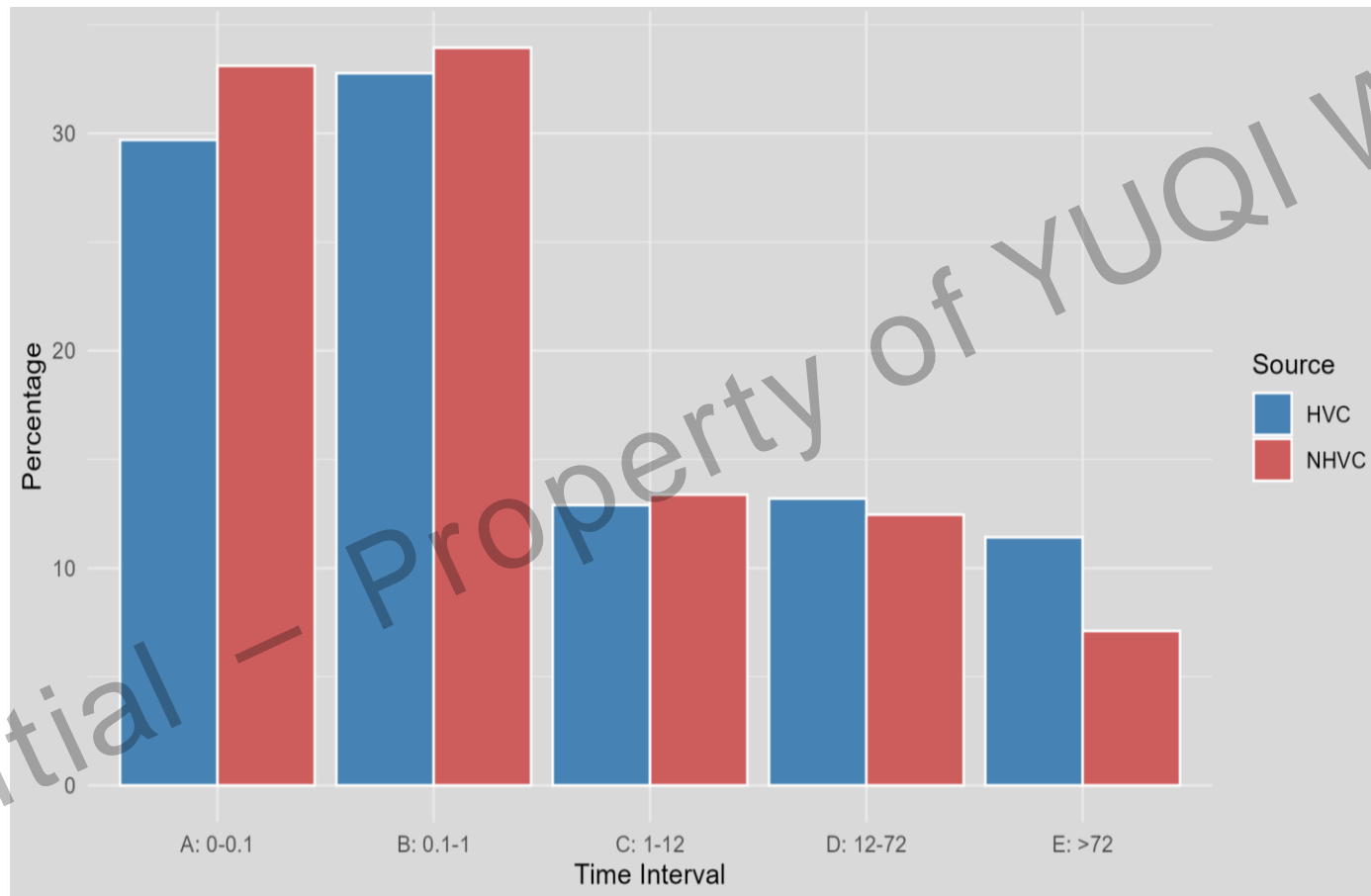- We also looked at the time slot when people tend to place orders.

Conversion Time Interval

	<6in	Within 1h
HVC	30%	33%
NHVC	33%	34%

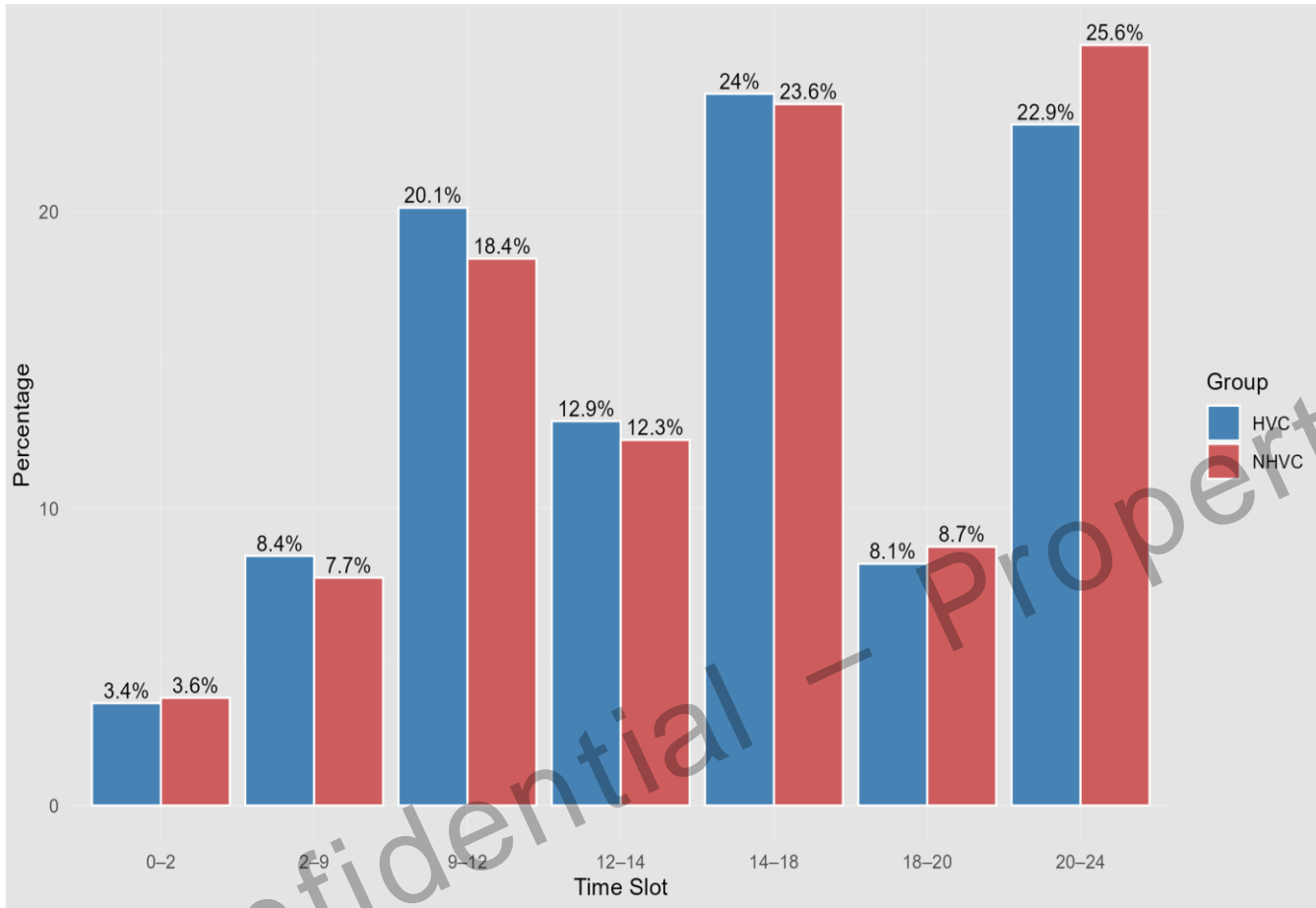**Showing similar real-time decision-making performance.**

11% of HVC took over 72 hours to convert, higher than NHVC's (7%).

This may suggest they are more likely to browse deeply & decide later.

Conversion Time Slot

✓ **HVC** demonstrated a **time-diverse shopping patterns**, likely due to more flexible work rhythms, stronger spending autonomy, or a higher degree of familiarity with the platform.

Both groups **peak during the 20 p.m. to 24 p.m..**

- **Post-work leisure time for most office workers**
- **When e-commerce platforms tend to run their most aggressive promotions.**

2 a.m. to 9 a.m., a low-traffic period, they remain relatively active - possibly due to early-morning repurchase behavior.

9 a.m. to 12 p.m. is likely a rational shopping window for them to make planned purchases.

12 p.m. to 14 p.m., which coincides with lunchtime breaks on weekdays. They frequently place orders, reflecting a strong ability to shop across multiple scenarios.

This behavior **continues to afternoon**, indicating **sustained day-time shopping motivation**.

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Part 04

**Recommendation &
Conclusion**

Conclusion & Insights

High-value Customer

- Prefer high-priced items
- Aged 35+
- Buy in larger quantities
- Highly educated
- More rational decision-making
- Moderate purchasing power
- Stable product portfolio

Non-high-value Customer

- Prefer low-priced items
- Aged 16-25
- Fewer & stable purchases
- Price-sensitive
- Quick decision-making
- Lower purchasing power
- Scattered product selection

- **User Segmentation:** HVC and NHVC differ in demographics & behavior, enabling **personalized recommendations**

- **Growth Potential:** HVC is JD's **core growth group**. NHVC has strong **conversion potential** for value enhancement

Customer Lifecycle Management

Retention

- Increase customer loyalty
- Reduce churn

Acquisition

- Attract new customers
- Expand the user base

Engagement & CLV

- Boost customer engagement
- Unlock customer lifetime value

Recommendations - Retention

Long-Term Incentives

- Implement a **point acceleration plan**
- Offer exclusive **coupons / gift cards for HVC** to encourage repurchases

Cross-Scene Reach

- Expand services to meet HVC needs **across different scenarios**, such as convenient office delivery

Personalized Services

- Optimize recommendations using purchasing patterns
- Provide annual consumption reports to HVC

Recommendations - Engagement

Optimize Product Bundle

- Create **appealing product bundles** based on HVC's bundle analysis
- Recommend **premium products** to support the pursuit of a higher quality lifestyle of HVC

Optimize Long-Cycle Decisions

- Offer **"decision tools + exclusive services" to** shorten conversion path
- Reduce the time cost of **price comparison**
- Provide **staged coupons** for unpurchased items

Recommendations - Acquisition

Target Potential Groups

- Identify non-HVC groups with **similar characteristics** as HVC
- Target them as **potential HVC** for focused marketing

Tailored Marketing Strategies

- Develop **specific strategies** for each group
- Example: promote lifestyle-driven products to young people; promote cost-effective products to middle-aged, family-oriented customers

Thanks