

京东



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

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# Part 01

## Research Background





JD.com



The largest retailer in China

01

**Self-operated supply chain**

02

**Fast delivery**

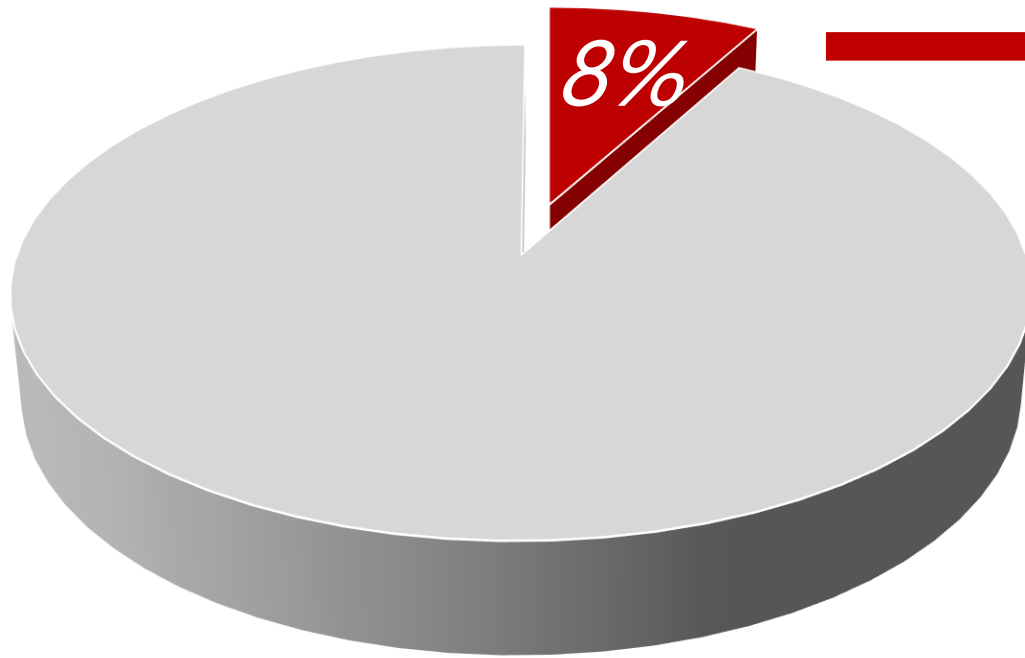
03

**Guaranteed authentic products**



"Making Lives Better through Technology"

## We Target High-value Customers (HVC)



Contributed to **60%+** of GMV

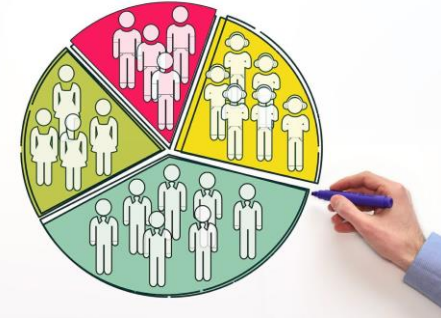
High Frequency

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**

03



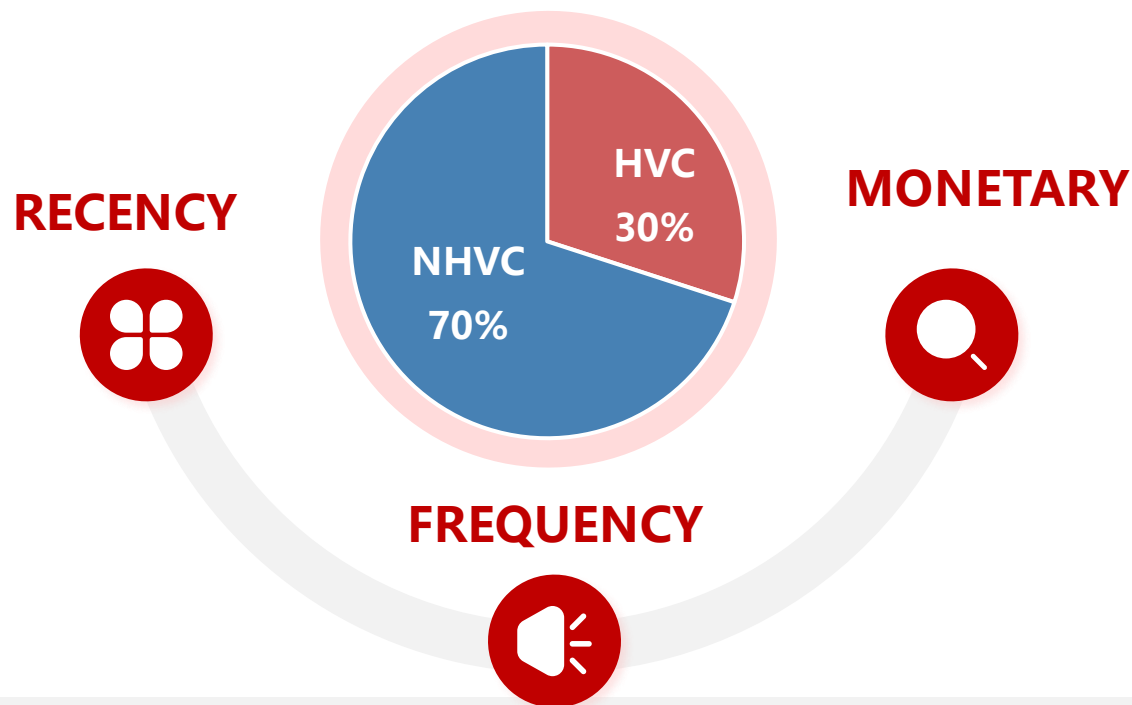
# Part 03

## Research Strategy & Findings





## HVC Selection - RFM



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

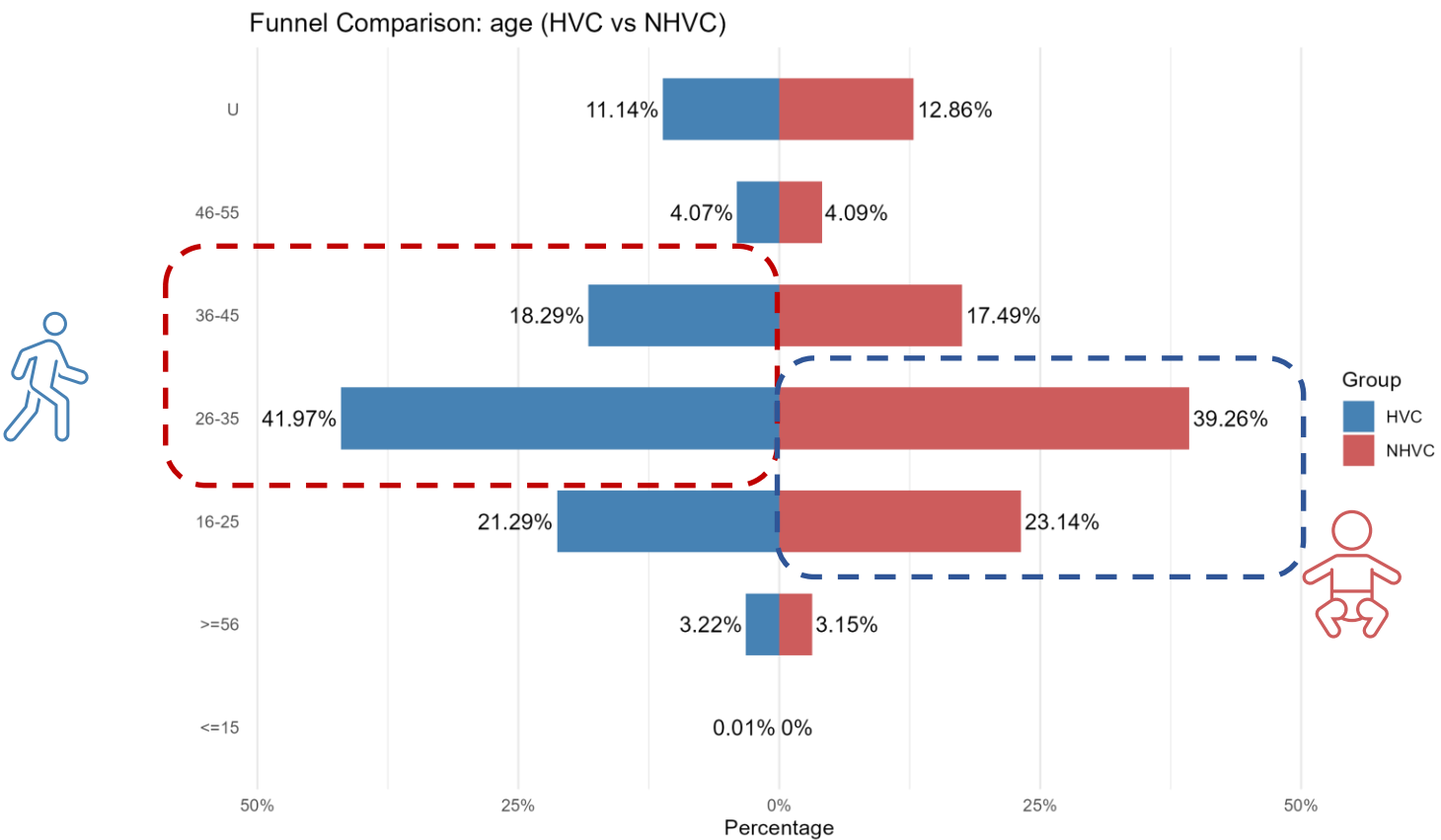
Marital Status

Purchasing Power

Gender

City Tier

Membership Status



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

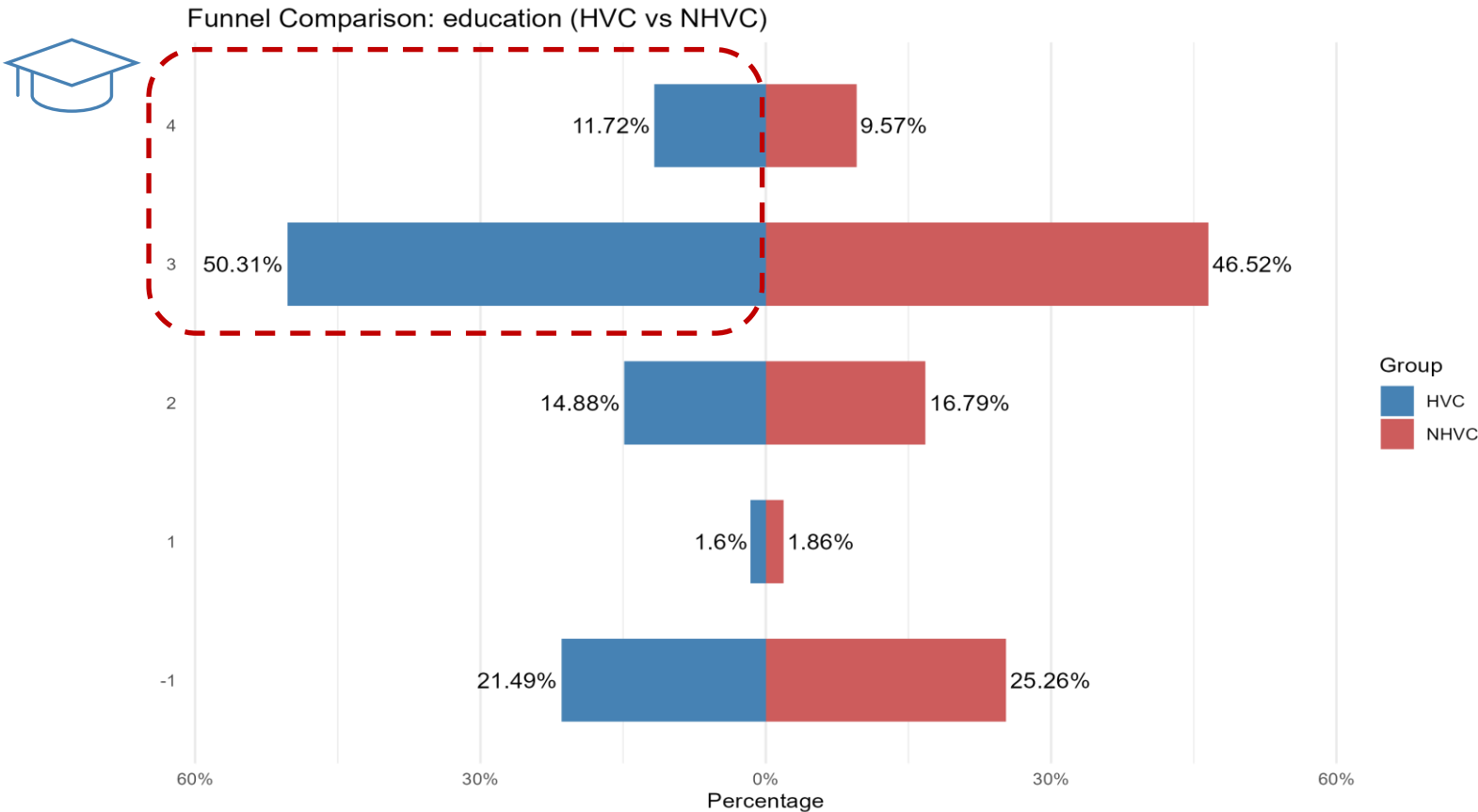
Marital Status

Purchasing Power

Gender

City Tier

Membership Status



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

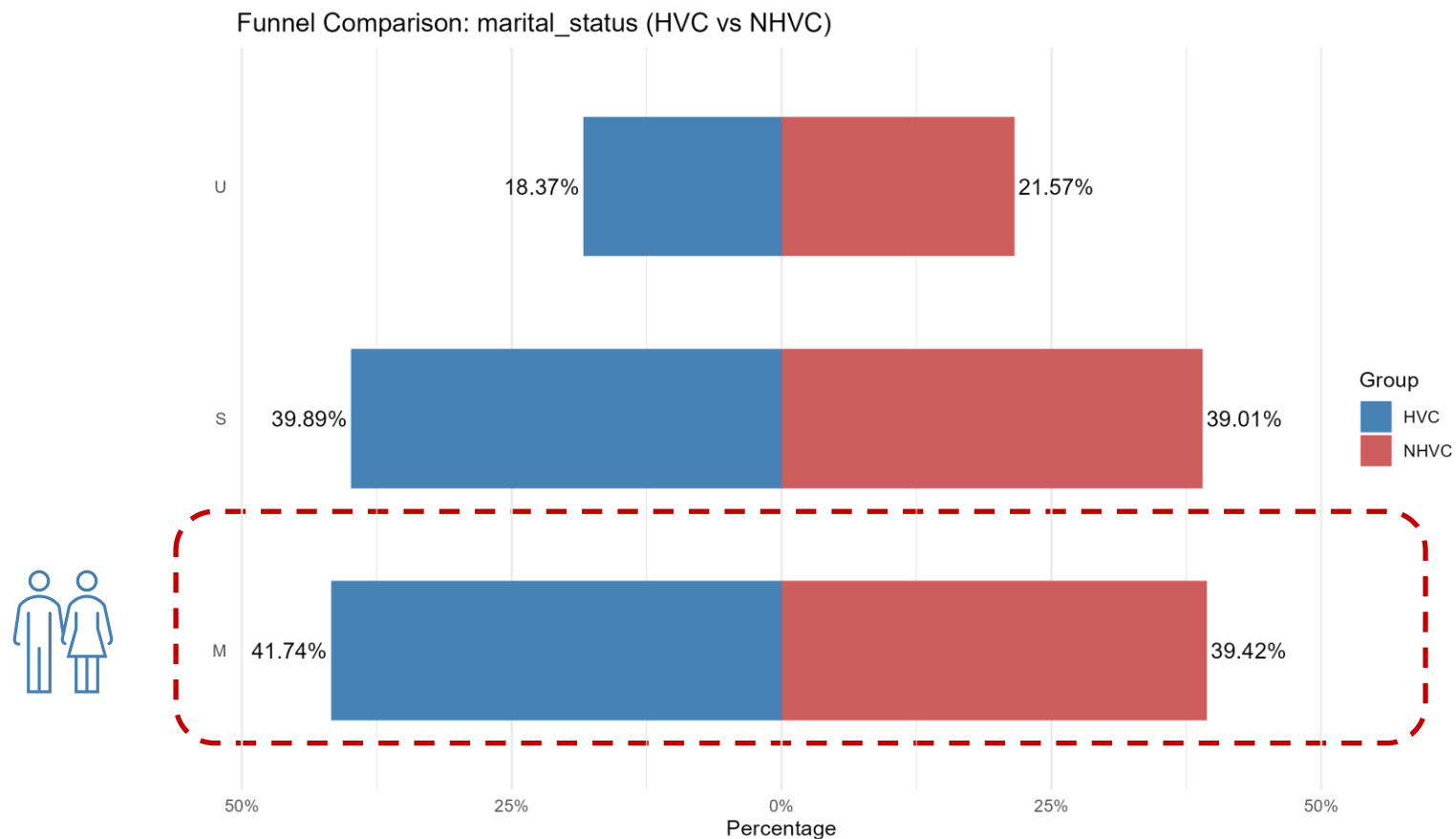
Marital Status

Purchasing Power

Gender

City Tier

Membership Status



**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

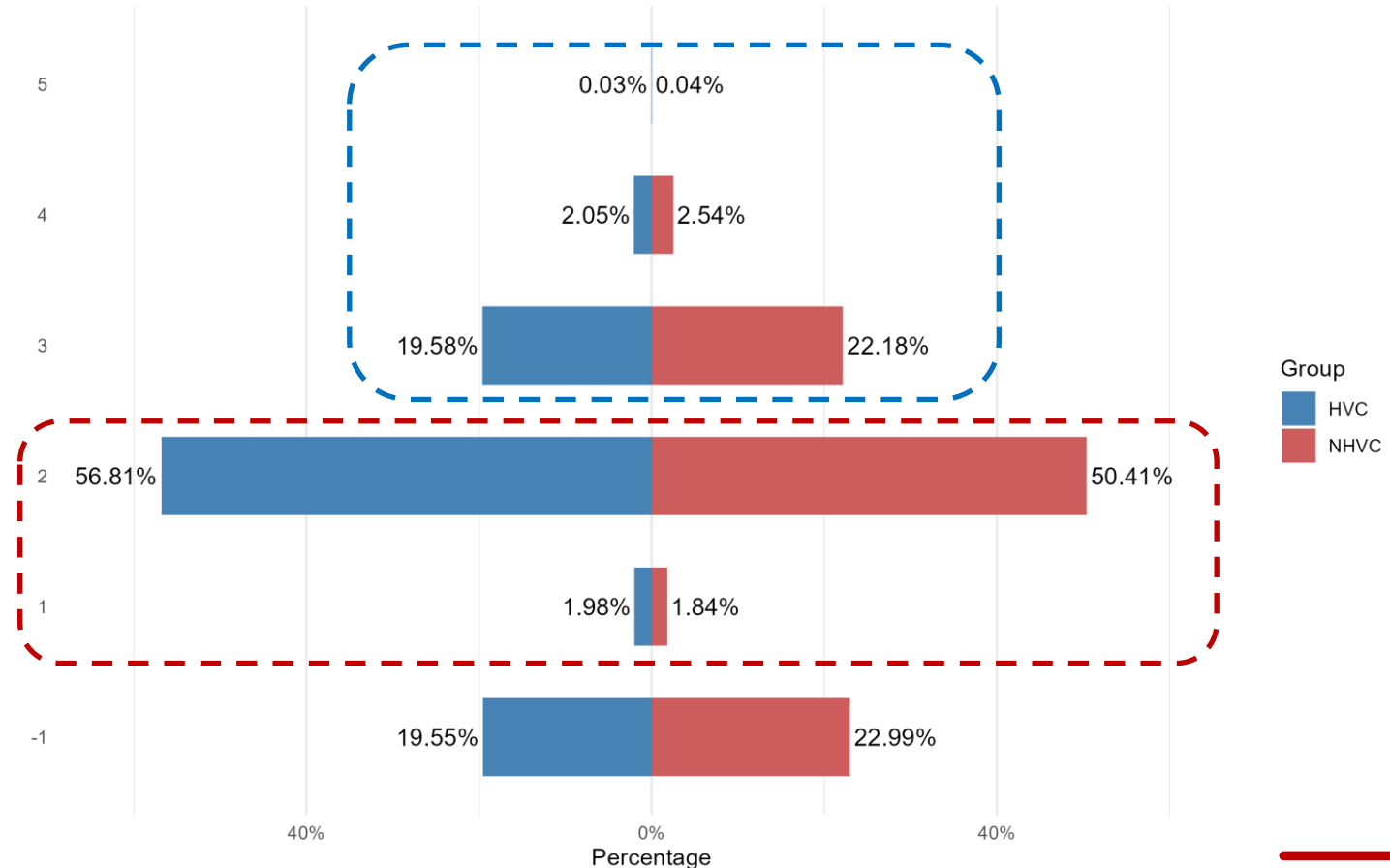
Purchasing Power

Gender

City Tier

Membership Status

Funnel Comparison: purchase\_power (HVC vs NHVC)



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

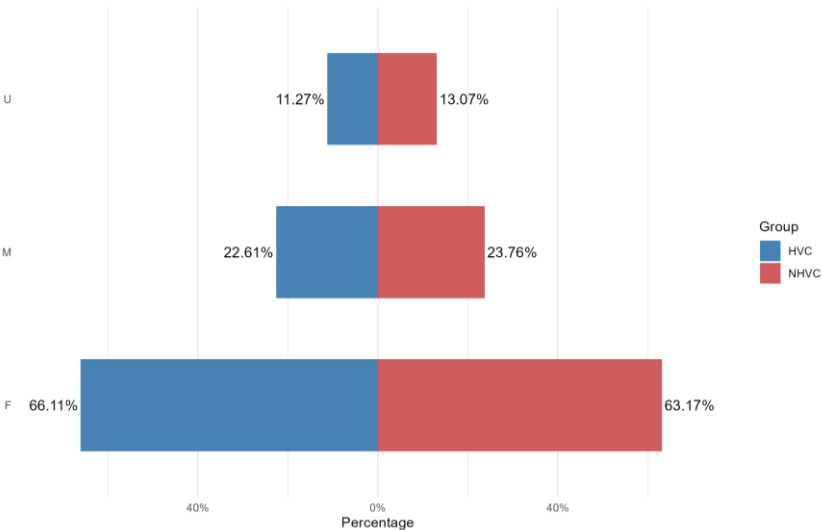
Purchasing Power

Gender

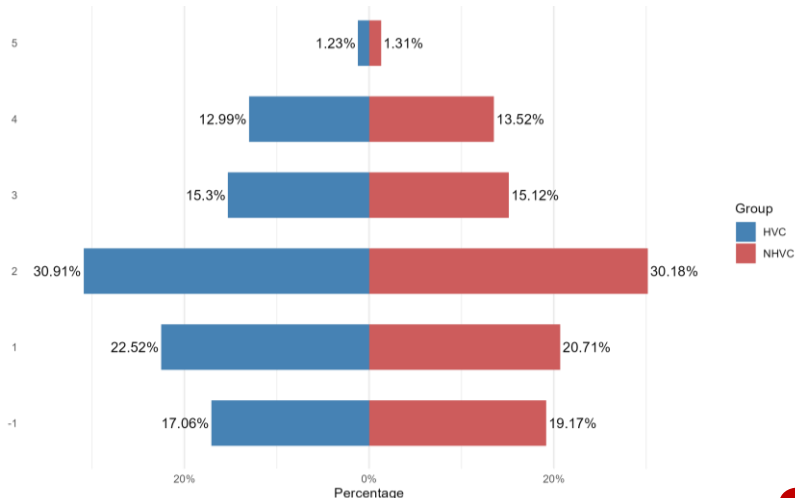
City Tier

Membership status

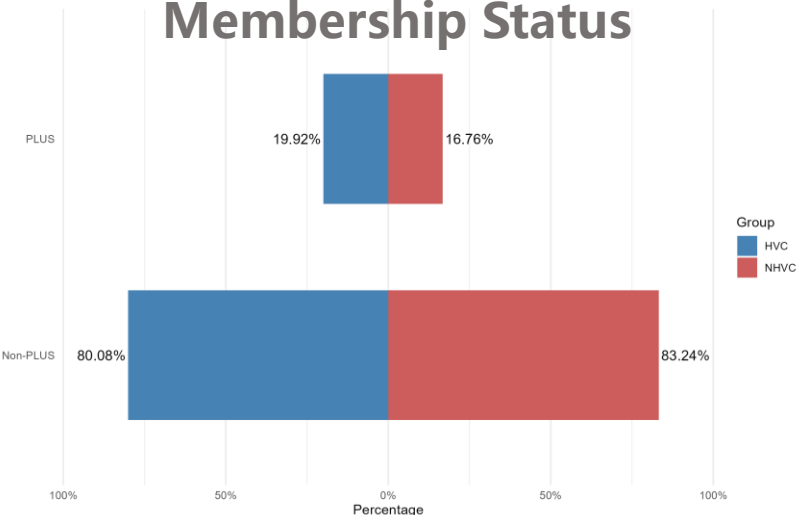
Gender



City Tier



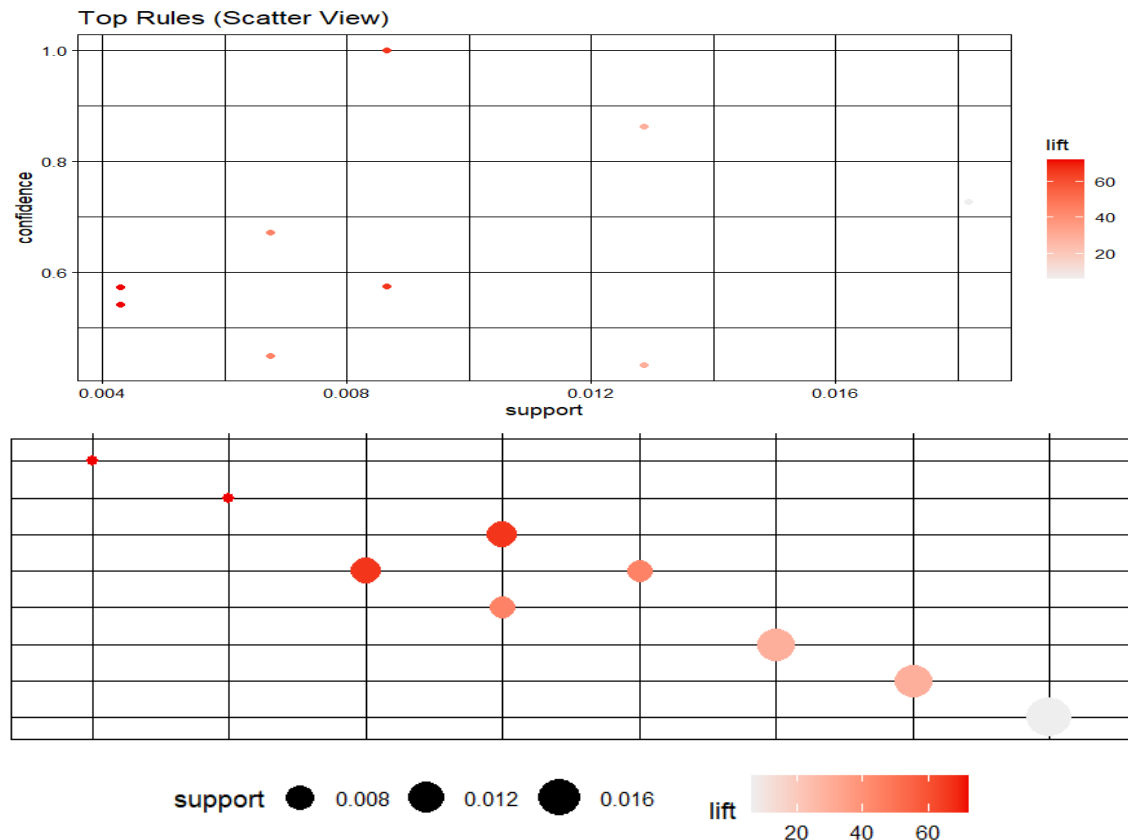
Membership Status



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

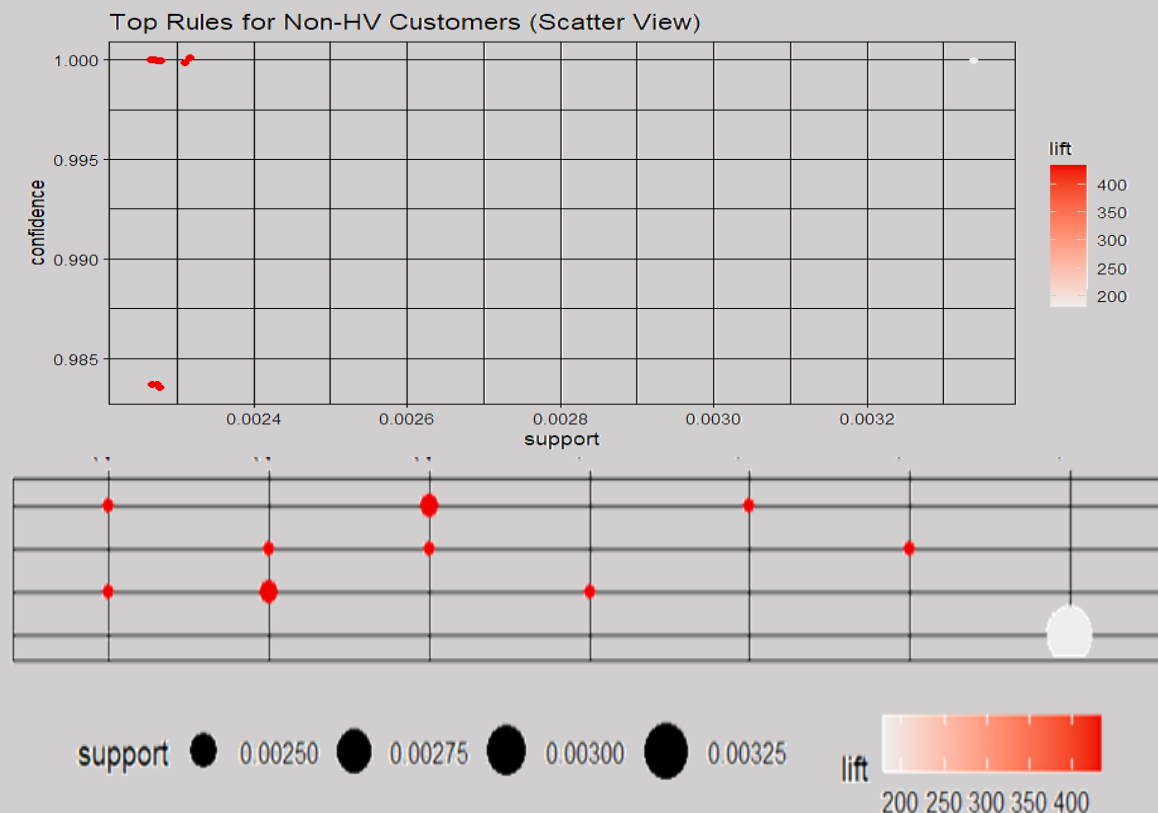
# Market Basket Analysis

## HVC



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.

## NHVC



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
{213fdef150} => {be1809c946}	0.0043	0.5728	0.0075	72.2464	586
{be1809c946} => {213fdef150}	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

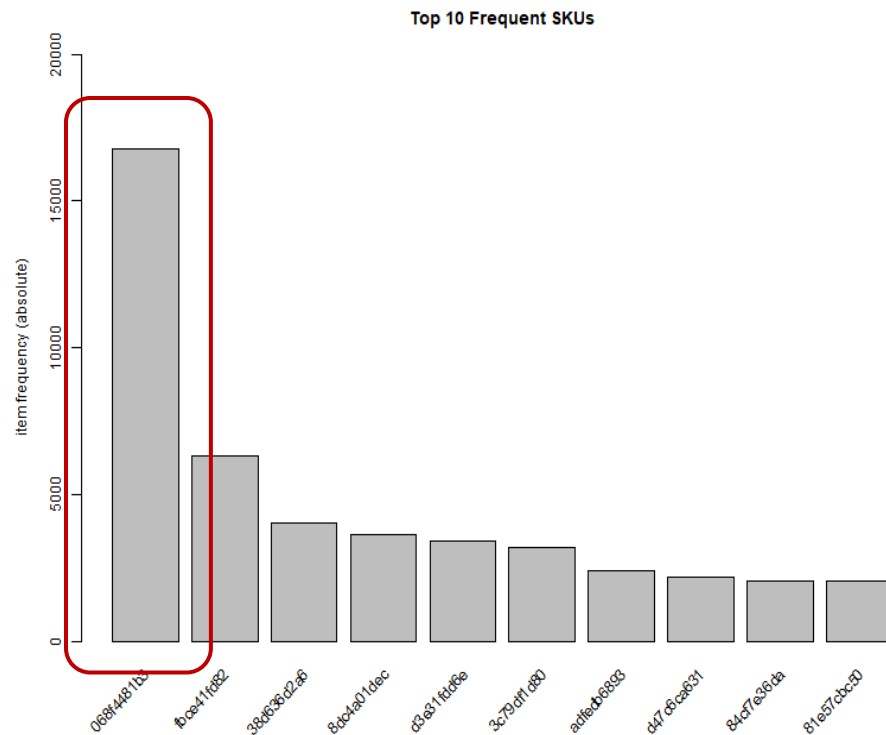
rules	support	confidence	coverage	lift	count
{681a29328b} => {e3e8d85965}	0.002271954	1.0000000	0.002271954	432.9441	721
{e3e8d85965} => {681a29328b}	0.002271954	0.9836289	0.002309767	432.9441	721
{681a29328b} => {844a43564c}	0.002271954	1.0000000	0.002271954	432.9441	721
{844a43564c} => {681a29328b}	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}**

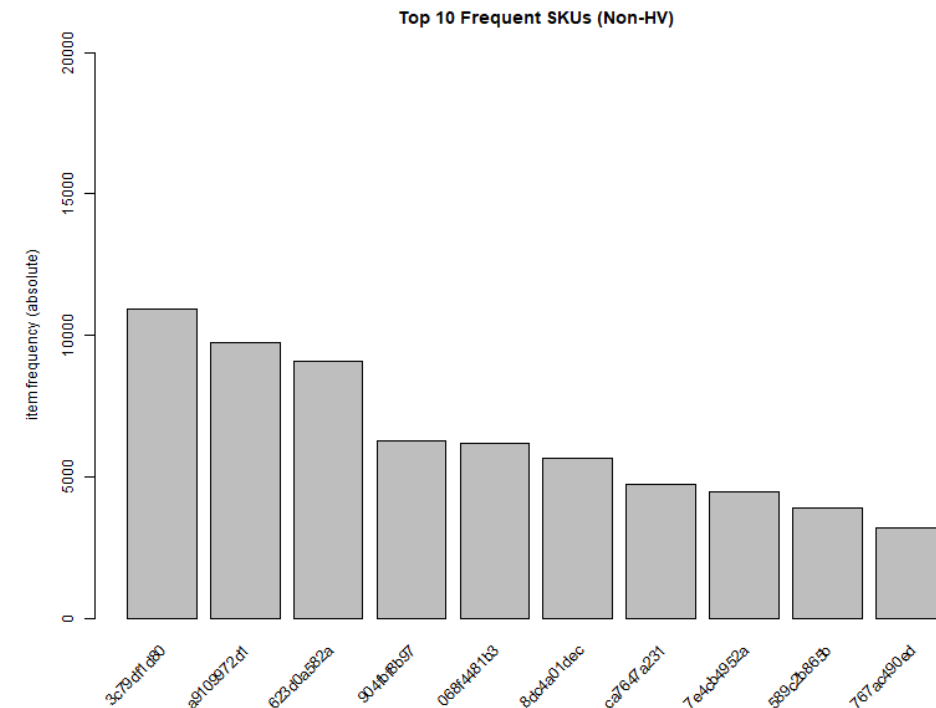
**One shared product bundle** appeared in both groups with 100% confidence. This shows the combination is **widely accepted**, making it suitable as a default recommendation for all users, including new customers.

# Market Basket Analysis

## HVC



## NHVC



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

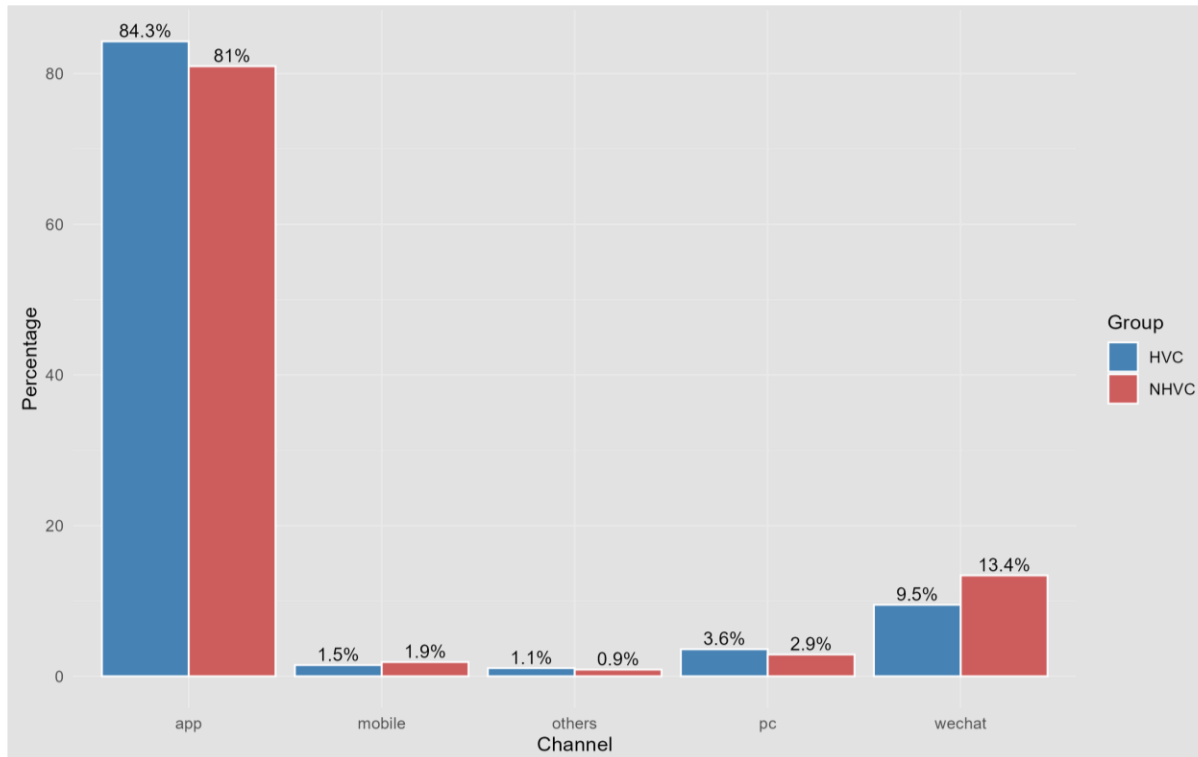
Indicating a wider range of consumption volume & price variability.

# Click & Conversion Channels

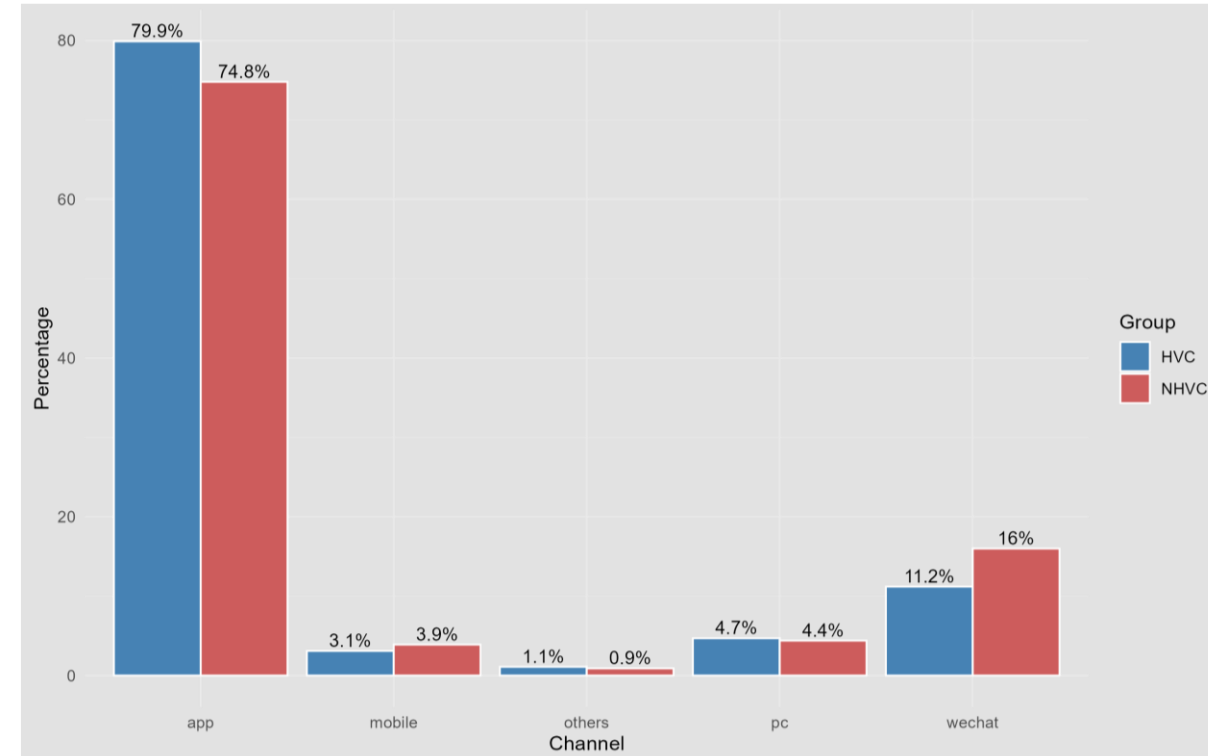
- We filtered out users who actually completed purchases, splitting them into HVC & NHVC groups,
- Examined how their **click & conversion channels** differ.



## 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.





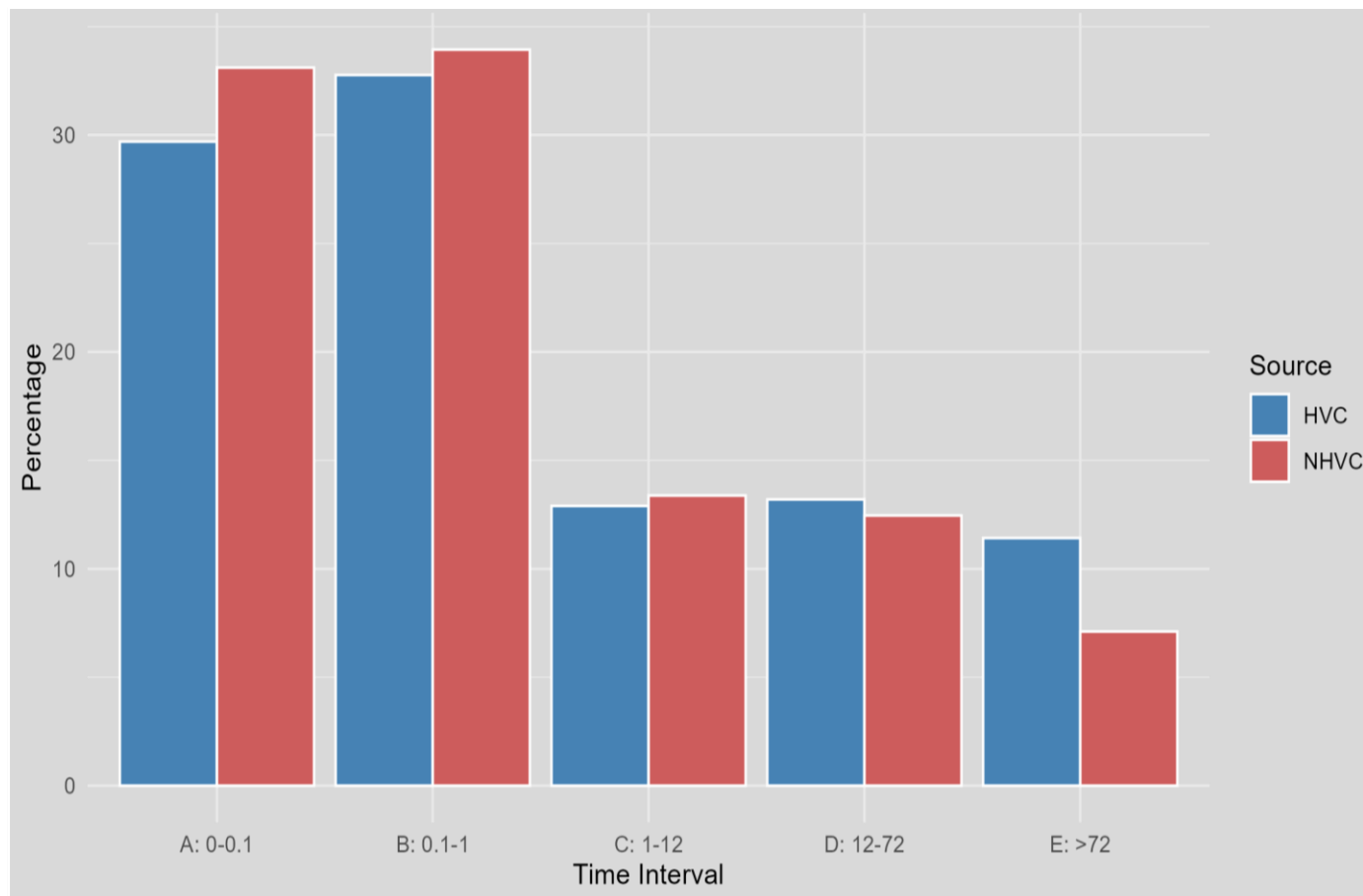


## Conversion Time Interval



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

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

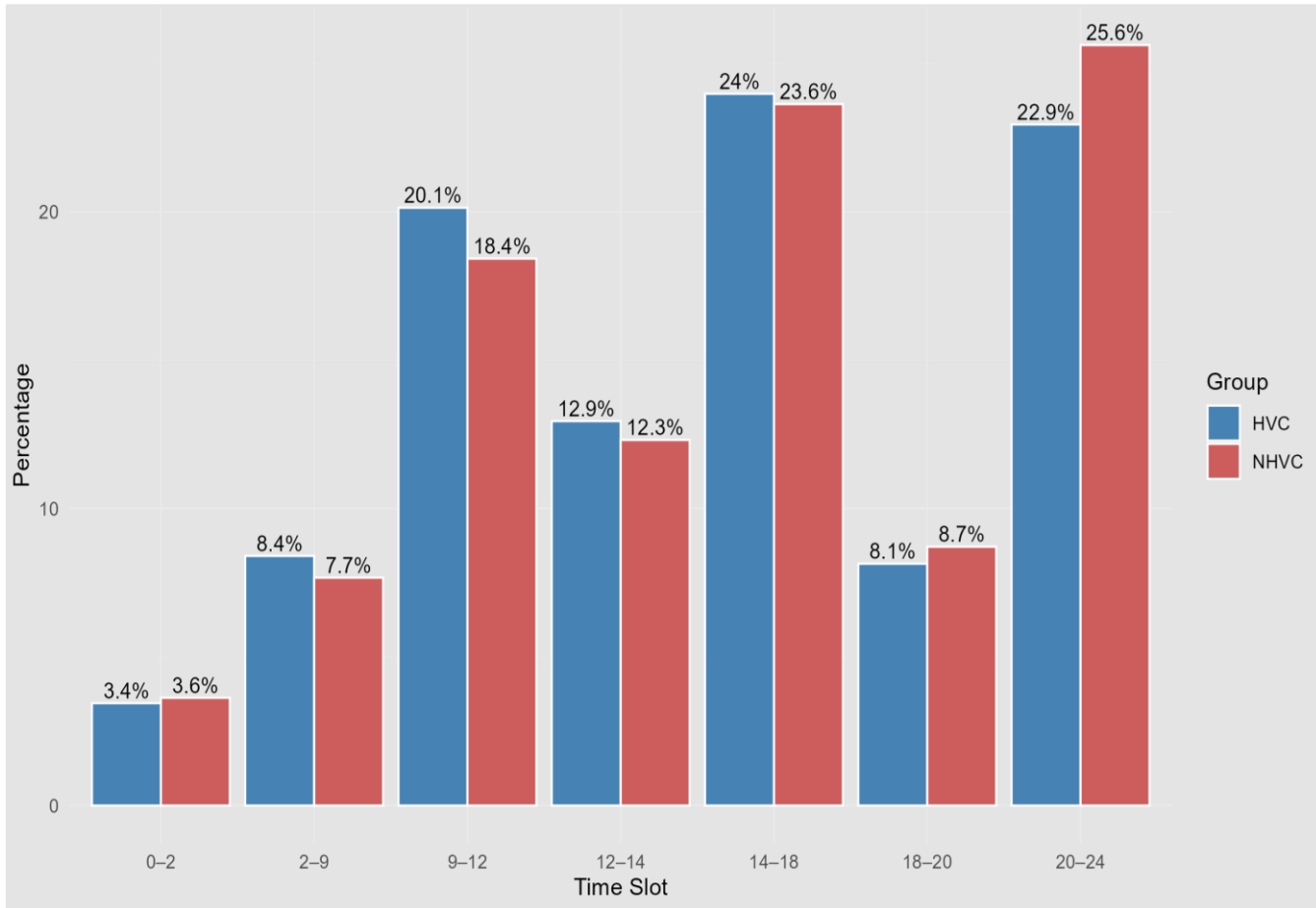


**11% of HVC took over 72 hours to convert, higher than NHVC's (7%).**



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**.



# Part 04

## Recommendation & Conclusion



## Conclusion & Insights

### High-value Customer

Aged 35+

Highly educated

Moderate purchasing power

Prefer high-priced items

Buy in larger quantities

More rational  
decision-making

Stable product portfolio

### Non-high-value Customer

Aged 16-25

Price-sensitive

Lower purchasing power

Prefer low-priced items

Fewer & stable purchases

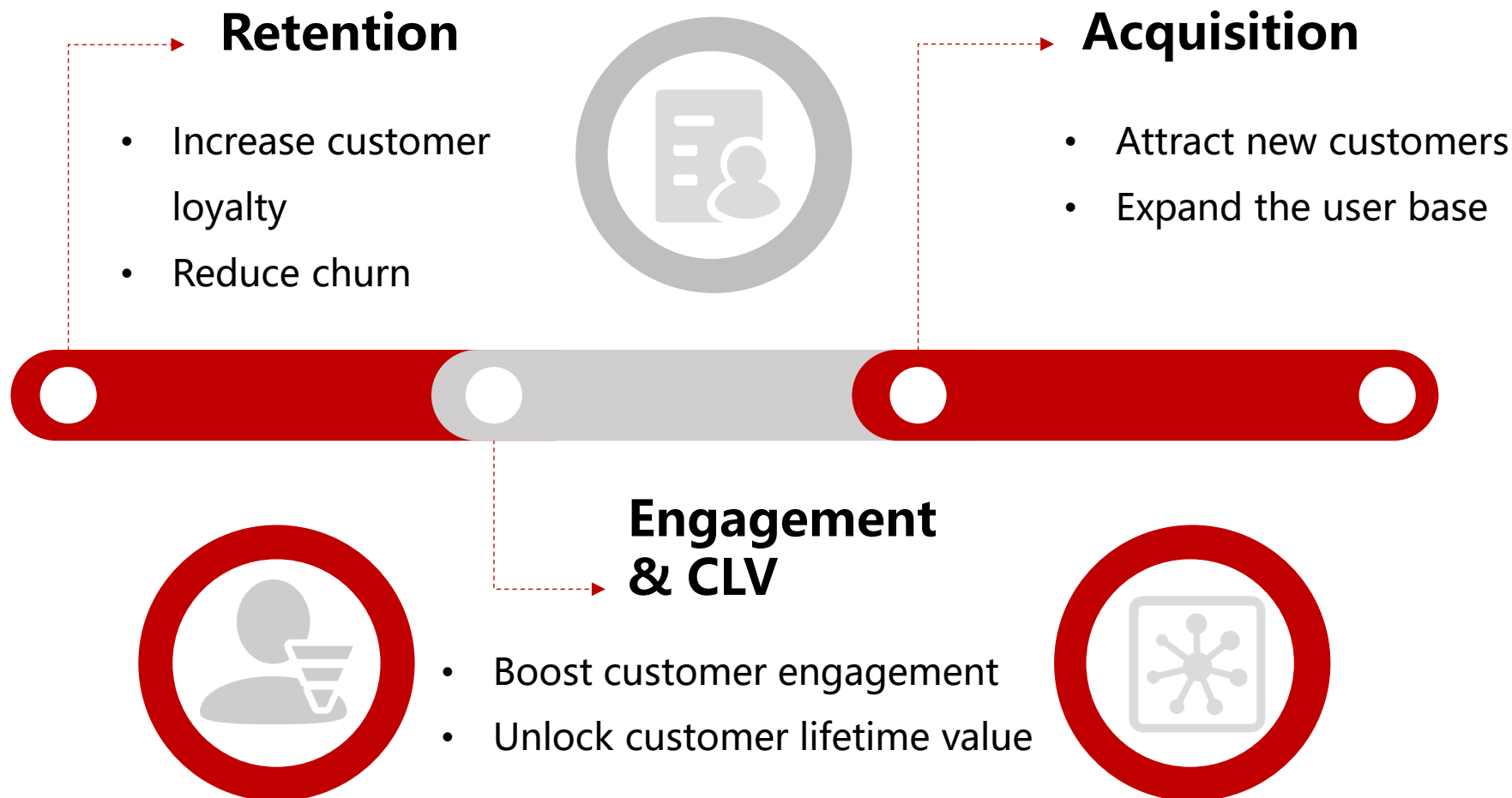
Quick decision-making

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





## 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**

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