

***ANALYZING CUSTOMER PREFERENCES TO SUPPORT RETENTION STRATEGIES IN INDONESIA'S E-COMMERCE INDUSTRY: A CHOICE-BASED CONJOINT APPROACH***

**ANALISIS PREFERENSI PELANGGAN UNTUK MENDUKUNG STRATEGI RETENSI DI INDUSTRI E-COMMERCE INDONESIA: PENDEKATAN CHOICE-BASED CONJOINT**

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**ABSTRACT**

*Indonesia's e-commerce sector struggles with customer retention despite large investments in promotions. This study identifies optimal combinations of promotional incentives, payment methods, and shipping options to support retention using Choice-Based Conjoint (CBC) analysis with 297 respondents aged 26-35. Five attributes were tested: cashback, discount, shipping cost reduction, payment method (BNPL, COD, e-wallet), and shipping option (instant, same day, standard). Results reveal that payment methods was the largest factor (45.1%), followed by discount (28.2%), while cashback and shipping served as secondary incentives. The best possible configuration included an e-wallet, a 10% discount, and rapid delivery, proving especially effective when paired with substantial cashback. The excessive number of high-value incentives was ineffective; however, utility-based bundling, informed by price sensitivity and segment responsiveness, offered greater outcomes. These three strategies include segment personalization, tiered incentives, and trade-off-based bundling. The results offer actionable, data-driven recommendations for ROI-focused customer retention initiatives in Indonesia's highly competitive digital landscape.*

**Keywords:** Conjoint Analysis, Customer Retention, E-Commerce, Payment Methods, Promotional Incentives, Shipping Options

**ABSTRAK**

Industri e-commerce Indonesia masih menghadapi tantangan terhadap retensi pelanggan meskipun gencar menawarkan diskon, cashback, BNPL, dan gratis ongkir. Penelitian ini mengidentifikasi kombinasi optimal insentif promosi, metode pembayaran, dan opsi pengiriman untuk mendukung retensi dengan pendekatan Choice-Based Conjoint (CBC) terhadap 297 responden usia 26-35 tahun. Lima atribut diuji yaitu cashback, diskon, potongan ongkir, metode pembayaran (BNPL, COD, e-wallet), dan jenis pengiriman (instan, sameday, standar). Hasil menunjukkan metode pembayaran paling berpengaruh (45,1%), diikuti diskon (28,2%), sedangkan cashback dan ongkir berperan pendukung. E-wallet dan diskon 10% menunjukkan preferensi tertinggi, sedangkan pengiriman instan terbukti paling efektif apabila dipadukan dengan insentif cashback dalam jumlah sedang. Pemberian insentif secara maksimal terbukti tidak efisien, sedangkan pendekatan bundling berbasis utilitas yang disesuaikan dengan sensitivitas harga dan responsivitas segmen menunjukkan hasil yang lebih baik. Studi ini mengusulkan tiga strategi utama yaitu personalisasi berdasarkan segmen, insentif bertingkat, dan penggabungan berbasis pertukaran nilai (trade-off). Temuan ini memberikan wawasan aplikatif dan berbasis data untuk strategi retensi pelanggan yang berfokus pada ROI di tengah ketatnya persaingan pasar digital Indonesia.

**Kata Kunci:** Analisis Conjoint, Retensi Pelanggan, E-Commerce, Preferensi Konsumen, Sensitivitas Harga

**INTRODUCTION**

Indonesia's e-commerce sector continues to grow rapidly, with the Gross Merchandise Value (GMV) expected to reach USD 65 billion in 2024 and projected to increase to USD 150 billion by 2030 [11]. This surge is driven by

increased smartphone penetration, improved internet access, and evolving

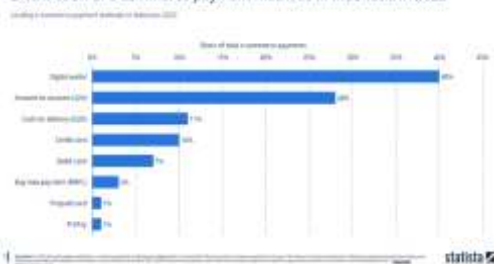
consumer behavior. The COVID-19 pandemic accelerated digital transformation by introducing millions of new online shoppers. More than 55% of Indonesian consumers increased their online shopping during the pandemic

(Rakuten Insight, 2020), and over 30% of retail transactions now occur online, placing Indonesia among Southeast Asia's digital commerce leaders (McKinsey, 2022).

The expansion of the digital economy is closely linked to Indonesia's mobile-first population and rising middle class. As of 2024, 79.5% of the population are internet users (APJII, 2024), and mobile internet penetration is projected to reach 85.02% by 2029 [11]. The middle class accounts for 66.35% of the population and 81.49% of household consumption from BPS [12]. While this group is digitally engaged, it is also highly price-sensitive, contributing to frequent platform switching. As a result, retaining these consumers is a critical challenge for e-commerce platforms.

Fintech development has also influenced online purchase behavior, with BNPL and e-wallet usage growing significantly. In 2023, 40% of payments were made via digital wallets, followed by 28% using account-to-account (A2A) payments. However, 11% of consumers still use cash on delivery (COD), indicating persistent trust concerns [11]. This research explores how these payment methods contribute to retention, beyond their convenience or popularity.

Distribution of e-commerce payment methods in Indonesia in 2023

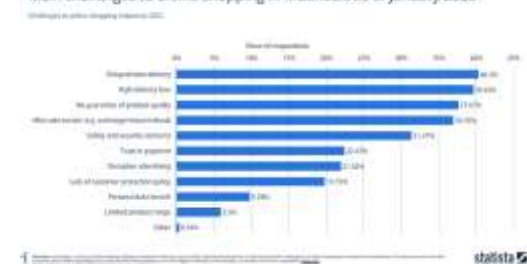


**Figure 1. Distribution of e-commerce payment methods in Indonesia in 2023** (Source: Worldpay, The Global Payment Report) [11]

Indonesia's e-commerce market is highly competitive, led by Shopee (40%), Tokopedia (30%), and Lazada (7%) [11]. These platforms invest

heavily in promotions such as discounts, cashback, and free shipping to drive transactions. Yet, only 22.51% of businesses reported increased revenue in 2023, while 48.78% experienced stagnation (BPS, 2025), suggesting that heavy promotional strategies do not always yield sustainable growth. Additionally, logistics challenges such as delivery delays and high shipping costs deter repeat purchases.

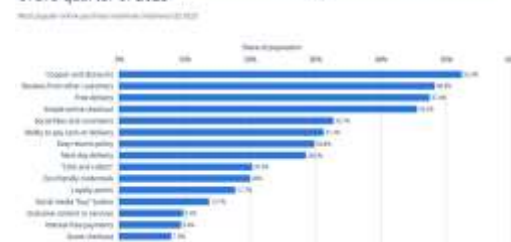
Main challenges to online shopping in Indonesia as of January 2023



**Figure 2. Main challenges to online shopping in Indonesia as of January 2023** [11]

Promotional incentives and flexible payments may attract users, but whether they foster long-term loyalty remains uncertain. According to Statista [11], in 2024, 52.3% of Indonesian online shoppers cited discounts as their top purchase driver. Yet repeat purchasing behavior depends not only on incentives but also on perceived value, reliability, and trust.

Most popular online purchase drivers among consumers in Indonesia as of 3rd quarter of 2023



**Figure 3. Most popular online purchase drivers among consumer in indonesia as of 3rd quarter of 2023** [11]

This study draws on several theoretical frameworks to examine consumer decision-making and retention in e-commerce. Rational Choice Theory

(RCT) and Behavioral Economics help explain how consumers maximize utility and respond to promotions under emotional and cognitive biases, such as loss aversion. The Technology Acceptance Model (TAM) explains consumer adoption of payment methods based on perceived usefulness and ease of use. Logistic Service Quality Theory (LSQT) highlights the impact of delivery speed and reliability on post-purchase satisfaction, while the Consumer Loyalty Framework by Oliver (1980) describes how satisfaction, trust, and habit contribute to customer retention.

By applying a Choice-Based Conjoint (CBC) analysis, this study measures trade-offs across five attributes: discount percentage, cashback, shipping cost reduction, payment method (BNPL, COD, e-wallet), and shipping option (instant, same day, standard). Unlike prior research that assessed these attributes individually, this study integrates them into a unified model to identify optimal incentive combinations. The objective is to contribute practical, data-driven insights to help e-commerce platforms enhance customer retention strategies in Indonesia's competitive digital marketplace.

To support this analysis, the research adopts a conceptual framework based on Conjoint Analysis principles. The conceptual framework positions promotional incentives, payment methods, and shipping options as key drivers of customer decision-making. By simulating consumer choices under varying attribute levels, the model estimates the relative utility of each attribute and its influence on retention outcomes.



**Figure 4. Conceptual Framework**

(Source: Author)

This framework aligns with Rational Choice Theory [1], which posits that individuals make decisions to maximize perceived utility while minimizing cost. In this context, CBC serves as a disaggregate model for quantifying these utility trade-offs at the individual level [4], providing a robust basis for developing targeted, retention-focused strategies. To explore how customer preferences shape retention outcomes in Indonesia's e-commerce sector, this study seeks to answer the following research questions (RQs):

**RQ1:** How do different promotional incentives (discounts, cashback, and shipping cost reductions) significantly influence repeat purchase behavior in Indonesian e-commerce?

**RQ2:** How do different payment methods (BNPL, COD, e-wallets) impact customer retention rates in Indonesia's digital marketplace?

**RQ3:** How do various shipping options (instant, same day, and standard) affect customer retention and purchase frequency?

**RQ4:** What are the trade-offs between promotional incentives, payment methods, and shipping options in fostering high retention rates and sustainable consumer engagement?

## RESEARCH METHODS

This study adopts a quantitative approach using Choice-Based Conjoint (CBC) analysis to examine the relative influence of promotional incentives, payment methods, and shipping options on customer retention in Indonesia's e-commerce sector. The method allows

researchers to estimate the trade-offs consumers make when choosing among alternative platform offers, simulating realistic online shopping behavior. The analysis was conducted using Survey Analytics, a platform that incorporates CBC modeling with Multinomial Logit (MNL) estimation to predict consumer preferences [5].

### Data Collection

Primary data were collected via an online questionnaire using QuestionPro, targeting Indonesian e-commerce users with purchases in the past three months. Conducted in Q2 2025, the survey yielded 297 valid responses, mostly from major metropolitan areas, particularly Greater Jakarta (Depok, Jakarta, Bogor, Tangerang), with fewer from Bandung and other cities. The sample focused on digitally active urban consumers but was skewed toward working professionals aged 26–35 (60.61%). Although it included respondents aged 18–25 (12.79%) and over 45 (4.38%), Gen Z, older adults, and rural users were underrepresented, potentially limiting the generalizability of findings beyond Indonesia's urban millennial cohort.

Secondary data were also employed to provide context and support the study's assumptions. These included statistics from Statista [11], BPS [12], and published academic journals, which provided insight into macro-level trends such as consumer digital behavior, logistics infrastructure, and e-commerce competition in Indonesia.

The questionnaire was divided into two sections. The first consisted of CBC-based stated preference tasks, where each respondent was shown 12 hypothetical choice sets. Each set featured three different e-commerce offer combinations varying across five attributes: cashback amount, discount percentage, shipping cost reduction,

payment method, and shipping option. Respondents were asked to choose their preferred alternative from each set.

The second section gathered socio-demographic information including age, gender, income, marital status, and frequency of online shopping, allowing for segmentation analysis. The design of the CBC task followed an experimental design that balanced attribute level appearance to ensure statistical efficiency. Each of the five attributes had three levels, as summarized in Table 1.

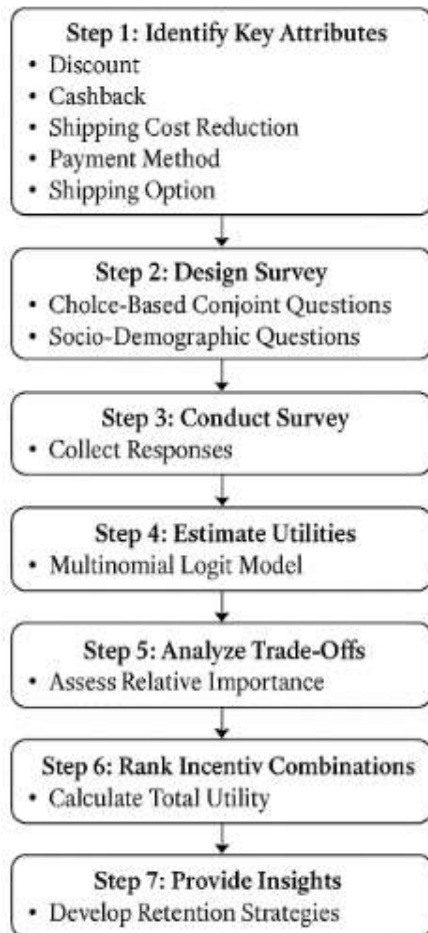
**Table 1. Attributes and Levels Used in the CBC Design** (Source: Author)

Attribute	Level 1	Level 2	Level 3
Cashback Amount	Rp 1,000	Rp 2,000	Rp 3,000
Discount Percentage	5%	10%	15%
Shipping Cost Reduction	Rp 1,000	Rp 2,000	Rp 5,000
Payment Method	BNPL	COD	E-Wallets
Shipping Option	Same Day (1 Day)	Standard (3–5 Days)	Instant (≤ 6 hours)

In this study, each respondent completed 18 choice tasks, with each task presenting three alternative profiles that varied across five key attributes: discount percentage, cashback amount, shipping cost reduction, payment method, and shipping option. The model estimates part-worth utility values for each attribute level based on the choices made, thereby quantifying the relative strength of consumer preferences. These utility scores enable simulation of likely choices under different incentive scenarios and provide a robust basis for evaluating which combinations are most effective in supporting customer retention strategies in Indonesia's competitive e-commerce market.

The methodological sequence undertaken in this study is presented in Figure 2. The process began with problem definition and literature review, followed by attribute identification, CBC questionnaire design, and survey

deployment. Upon completion of data collection, the data were analyzed using CBC with MNL estimation. The resulting utility scores served as the basis for ranking profiles and developing strategic recommendations, which are presented in the subsequent section.



**Figure 5. Research Flowchart of CBCs-Based Retention Modeling**

(Source: Author)

## RESULTS AND DISCUSSIONS

This section presents the empirical findings from the Choice-Based Conjoint (CBC) analysis, which measured Indonesian consumers' trade-offs between promotional incentives, payment methods, and shipping options in e-commerce. A total of 297 valid responses were analyzed using a Multinomial Logit (MNL) model, estimating part-worth utilities for 15

attribute levels across five core attributes. The discussion integrates statistical outputs with theoretical interpretations and previous research to provide a holistic understanding of customer retention drivers.

Based on utility scores derived from CBC modeling, payment methods emerged as the most influential factor in consumer retention decisions, contributing 45.1% to total utility. Discount percentage followed at 28.2%, while shipping cost reduction (10.6%) and cashback (8.3%) showed moderate influence. Shipping options contributed the least, at 7.8%.

**Table 2. Attribute Importance Scores**

Attribute	Utility Score	Relative Importance (%)
Payment Method	45.102	45.1%
Discount Percentage	28.171	28.2%
Shipping Cost Reduction	10.632	10.6%
Cashback	8.312	8.3%
Shipping Option	7.783	7.8%
Total	100.000	100%

These findings indicate that consumer retention is more strongly influenced by transaction convenience and payment trust (as reflected in e-wallet preference) than by deep discounting or expedited shipping alone. This aligns with the Technology Acceptance Model (TAM), where perceived ease of use and usefulness significantly influence technology (payment) adoption [2].

The CBC results also provide part-worth utility values for each level within the five attributes. The utility values quantify how positively or negatively each attribute level contributes to consumer choice.

**Table 3. Part-Worth Utility**

Attribute	Level	Utility Value
Cashback	Rp 1,000	0.127
	Rp 2,000	0.127
	Rp 3,000	-0.255
Discount Percentage	5%	-0.612
	10%	-0.071
	15%	0.684
Shipping Cost Reduction	Rp 1,000	-0.061
	Rp 2,000	-0.213
	Rp 5,000	0.275
Payment Method	BNPL	-0.879
	COD	-0.318
	E-Wallets	1.197
Shipping Option	Standard (3–5 Days)	-0.158
	Same Day (1 Day)	-0.040

Instant hours)	(≤6	0.199
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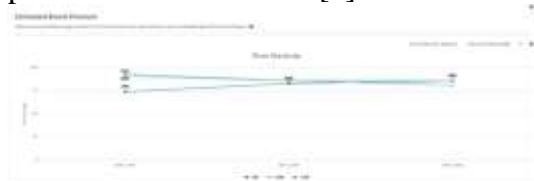
Among payment methods, e-wallets exhibited the highest utility (1.197), supporting the growing adoption of digital payments in Indonesia [11]. This aligns with Parashar et al. [10], who found that ease of use, security, and post-pandemic trust significantly contribute to continued e-wallet usage and enhanced customer retention in e-commerce. By contrast, BNPL received the lowest utility (–0.879), despite prior research highlighting its effectiveness in increasing order size and retention for certain promotion-sensitive segments [8]. This divergence may reflect consumer hesitation or debt aversion toward installment-based services in Indonesia’s broader market.

In terms of discounts, utility increased from –0.612 at 5% to 0.684 at 15%, indicating that deeper discounts are effective—though only to a certain point. Cashback, while widely promoted, exhibited diminishing marginal utility and even negative utility at Rp 3,000 when paired with steep discounts and shipping subsidies. This outcome reflects loss aversion [3], where consumers become sensitive to perceived imbalances in overall value.

### Influence of Promotional Incentive

Among the promotional incentives, discount percentage emerged as the most influential, contributing 28.2% to overall preference. Cashback and shipping cost reductions contributed 8.3% and 10.6%, respectively, indicating a supporting role in consumer decisions. Utility values showed that 10-15% discounts yielded the highest part-worth scores, but marginal utility began to decline beyond 10%. Cashback of Rp 3,000 resulted in negative utility (-0.255)

when combined with deep discounts, suggesting diminishing returns and potential oversaturation [6].

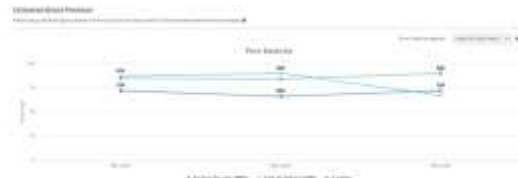


**Figure 6. Elasticity of Discount Percentage by Cashback Levels**

Elasticity analysis further confirmed that a 10% discount with Rp 1,000 cashback achieved 91% elasticity, outperforming both 5% and 15% discounts at other cashback tiers. These findings demonstrate that mid-level, bundled incentives are more effective than maximum-value offers. Overall, discount percentage is the primary driver of repeat purchase behavior, with cashback and shipping cost reductions best applied strategically in bundled offers.

### Influence of Payment Methods on Customer Retention

Payment method was the most influential attribute, contributing 45.1% to consumer preference — surpassing all promotional incentives. E-wallets yielded the highest utility (+1.197) and stable elasticity across all cashback levels (85%–90%), highlighting their role in transactional trust and convenience.



**Figure 7. Elasticity of Payment Methods by Cashback Levels**

Conversely, BNPL consistently scored the lowest utility (-0.879) and elasticity (66%–72%), suggesting possible consumer debt aversion or unfamiliarity with credit-based models, despite prior studies indicating that

BNPL can increase online order size and support retention through interest-free flexibility [8]. Cash on Delivery (COD) showed moderate performance, with high elasticity (90%) at Rp 2,000 cashback but dropped to 67% at Rp 3,000, indicating inefficiency when paired with excessive incentives. This aligns with the findings of Mishra and Dutta [9], who observed that COD transactions are often associated with higher return rates and perceived cost burdens, thereby weakening retention compared to digital payment methods. These results confirm that e-wallets remain the strongest retention driver, while BNPL adoption requires targeted education and trust-building initiatives.

### Influence of Shipping Options on Customer Retention

Shipping options contributed 7.8% to overall preference, the least impactful attribute group, but their effectiveness varied significantly based on context. Instant delivery ( $\leq 6$  hours) showed the highest elasticity (95%) at Rp 2,000 cashback, signaling that ultra-fast delivery can boost retention when bundled with mid-tier incentives [7].



**Figure 8. Elasticity of Shipping Options by Cashback Levels**

Same-day delivery (1 day) maintained stable performance, especially at higher cashback levels, and may serve as a scalable and operationally viable retention option. Standard delivery (3-5 days) was most effective at the lowest cashback level (87% elasticity), suggesting appeal to cost-conscious users who value savings over speed. These findings highlight that shipping speed preferences are context-



sensitive, and platforms should deploy logistics strategies based on offer composition and customer segment economics [7].

### **Influence of Incentive Trade-Offs on Sustainable Retention**

The results indicate that combining maximum-value incentives such as Rp 3,000 cashback, a 15% discount, and instant delivery does not necessarily lead to the highest utility or consumer responsiveness. While the most preferred profile by respondents included Rp 3,000 cashback, it produced a lower total utility score (0.857) compared to a more balanced configuration that featured Rp 1,000 cashback, a 15% discount, and Rp 5,000 shipping cost reduction, which achieved a higher utility score of 2.485. This suggests that excessive incentive stacking may diminish perceived value or create diminishing marginal utility.

**Table 4. Comparison of Most Preferred, Best and Worst Profiles Based on Total Utility**

Attributes	Most Preferred Profile	Best Profile	Worst Profile
Cashback	Rp 3,000	Rp 1,000	Rp 3,000
Discount	10%	15%	5%
Gratis Ongkir	Rp 2,000	Rp 5,000	Rp 2,000
Payment	E-wallets	E-wallets	(BNPL)
Shipping Options	Instant (≤ 6 hrs)	Instant (≤ 6 hrs)	Standard 3-5 days
Total Utility	0.857	2.485	-2.120

Findings from the elasticity analysis further support this trade-off. At the Rp 2,000 cashback level, which represents a cost-efficient middle tier, several other attributes performed optimally. A 10% discount achieved 83 percent elasticity, e-wallet payments

maintained 85 percent, Rp 5,000 shipping cost reduction reached 85 percent, and instant delivery recorded the highest responsiveness at 95 percent. In contrast, Rp 2,000 shipping cost reduction showed a lower elasticity of only 69 percent, indicating weaker consumer response when combined with moderate cashback. Moreover, Rp 3,000 cashback was associated with lower elasticity scores across other components, such as COD at 67 percent and instant delivery at 82 percent. This indicates that maximum cashback may lead to inefficiencies in the overall incentive structure.

These findings demonstrate that the most effective approach is not to stack maximum-value incentives, but to design balanced bundles that deliver high perceived value while maintaining cost efficiency. This insight aligns with Zhang and Li [6], who highlighted the non-linear impact of discounts on purchase behavior and the risk of diminishing returns when incentives are not optimally calibrated. Similarly, while Kumar et al. [8] emphasized the retention potential of BNPL for promotion-sensitive segments, this study finds that such methods may underperform when consumers exhibit debt aversion, suggesting contextual limitations in the Indonesian market. Furthermore, Habenstein et al. [7] acknowledged the supporting role of shipping speed in driving repeat purchases, which this study confirms but only when paired with mid-level cashback incentives, highlighting the importance of bundle strategy.

Therefore, this research extends prior work by integrating these factors holistically through conjoint modeling and demonstrating that utility-based bundling, rather than incentive maximization, offers a more sustainable path for retention. This contribution not



only confirms aspects of previous findings but also offers a nuanced framework tailored to Indonesia's e-commerce landscape, where budget-conscious consumers demand both value and trust. It adds value by quantifying trade-offs and enabling data-driven segmentation that moves beyond one-size-fits-all strategies.

## CONCLUSION AND SUGGESTION

This research explored Indonesian online customer choice preferences through the Choice-Based Conjoint (CBC) method to evaluate the effect of five attributes: cashback, discount, shipping cost reduction, payment methods, and shipping options. The results showed that the payment method, in particular, the use of e-wallet, was the most influential factor (45.1%), followed by the discount rate (28.2%). Cashback and shipping cost reduction served as supporting roles, while immediate instant delivery was optimized when combined with moderate cashback level. These findings suggest that stacking the high-value incentive is not always efficient. Instead, carefully curated bundles that reflect consumer preference offer more effectiveness for long-term customer retention. The strength of this study lies in its use of utility and elasticity modeling to quantify trade-offs and support strategic decision-making.

Drawing from findings, this study proposes three strategic approaches to optimize customer retention in e-commerce:

### Segment-Based Personalization Strategy

Promotional strategies should be concentrated on the user segment that demonstrated highest responsiveness specifically, as unmarried male employees aged 26-35, with monthly incomes of Rp 10-20 million, who shop

online 2-5 times per month. This group consistently showed strong preference alignment across all five attributes. Marketing communications targeting this segment should prioritize mobile-optimized content, communicated through social media and app notifications during evening hours, presented in a clear, functional and visually appealing format.

### Tiered Incentive Design

Customize offers based on responsiveness:

Tier 1 (High Priority) addresses the most active customers, namely, unmarried male workers aged 26–35 with monthly salaries of Rp 10–20 million. This group ranked highest across all attributes and received premium benefits: Rp 3,000 cashback, 10% discount, Rp 2,000 shipping reduction, instant delivery, and e-wallet payment. Redemptions are capped to twice a week with up to three stackable incentives, maximizing value for high-LTV users.

Tier 2 (Moderate Priority) includes unmarried female employees in the same age and income range, ranking third across attributes. They receive a 15% discount, Rp 1,000 cashback, and modest shipping incentives with instant delivery and e-wallets. Offers are capped at one redemption per week with limited stacking to balance effectiveness and cost.

Tier 3 (Low LTV / Broad Acquisition) consists of students, housewives, and infrequent buyers. They are offered basic incentives such as Rp 1,000 cashback, 5% discount, and standard delivery via COD. With one non-stackable redemption per month, this tier supports acquisition and reactivation with minimal subsidy exposure.

### Bundling Strategy Optimization

Utility and elasticity insight can be leveraged to shape promotional design. For instance, a 10% discount with Rp 1,000 cashback produces high responsiveness (91%) compared to more expensive combinations [6]. The effectiveness of discounts, shipping incentives, and payment methods varies depending on cashback level. A utility-per-cost matrix and A/B testing are recommended to support optimization and improve ROI.

### Limitations and Future Research

Although this research provides strategic insight, there are several limitations to be considered, and there appears to be potential for future research. First, this analysis is based on reported preference data elicited in an experiment, and these may not accurately represent underlying consumer preference in real purchase contexts. Future research can validate these findings based on revealed preference data or transaction data to maximize external validity. Second, although the sample has a spectrum of ages ranging from 18 to older than 45 years, it is primarily composed of urban, tech-savvy users between 26–35, and may be underrepresenting Gen Zers, elderly, or consumers in rural areas' behavior. Expand the demographics for generalizability. Third, of the five characteristics that the conjoint model measured, none of these were augmented by any additional impactful variables such as return policy, customer service responsiveness, or sustainability issues. Adding these in future models may give insight into drivers of retention. Finally, Indonesia and other developing countries' cultural and economic diversity might shape promotional responsiveness. Thus, future studies should aim to perform cross-regional or

cross-country comparisons to place these findings in broader international e-commerce trends.

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