

TOBACCO HARM REDUCTION AND CONSUMER PREFERENCES IN NEPAL

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Use of AI / Generative AI

All research content, analysis, and conclusions are the original work of the authors. ChatGPT was used for proofreading and language refinement in some sections. The authors take full responsibility for the content of this book.

Executive Summary

Tobacco consumption is a major public health and economic concern in Nepal. It contributes to a significant proportion of preventable deaths annually and adds a substantial burden on households and the country's overall healthcare system. The 2019 STEPS survey shows 28.9% of adults used tobacco in some form, consisting of 48.3% men and 11.6% women (WHO, 2020). These figures underline the importance of tobacco cessation as well as harm reduction measures.

Over the decades, Nepal has adopted policies and measures in tobacco control and made notable progress. Yet, policy implementation faces challenges, such as the enforcement of policy and regulatory measures on cigarettes, or a lack of regulation and ambiguity on alternative nicotine products, creating confusion and uncertainty for both consumers and policymakers. Similarly, for packaged cigarettes, ongoing policy discussions on the proposed transition from 90% to 100% graphical health warnings highlight the government's commitment to strengthening tobacco harm reduction, while also underscoring the need for evidence-based decision-making.

Against this backdrop, this book represents an attempt to present evidence on smokers' choices and preferences around a host of products and relevant regulatory conditions. It provides new empirical evidence on how adult smokers in Nepal respond to different tobacco product attributes and policy-relevant conditions. Building on the 2023 edition, this study employs Discrete Choice Experiments (DCE) to capture how individuals make trade-offs when choosing between cigarette packs, loose cigarettes, vape/e-cigarettes, and a quit (opt-out) option under varying scenarios of price, packaging, health warning, and product availability. The experiments were conducted between April and June 2025 among adult smokers across the country.

Purpose

The main objective of this study was to elicit smokers' preferences for tobacco harm reduction products and quantify trade-offs across four key attributes: price, legality/enforcement, availability, and health warnings. It

also estimates willingness-to-pay (WTP) for different products and attribute changes and provides empirical evidence relevant to fiscal and regulatory issues.

Study Design and Sample

The sample for this 2025 study was drawn from the 2023 baseline cohort. From a re-contact pool of 2,921 consenting baseline respondents, 1,056 re-consented in 2025, and after screening and validity checks, 684 complete responses were retained for DCE survey. Key sampling features included ages 18 to 55, at least 20% female respondents, and a focus on urban/semi-urban areas.

The DCE used a D-optimal fractional design generating 30 choice sets, blocked into three versions (A/B/C), so each respondent completed 10 tasks. Each task presented three product alternatives, plus a quit/opt-out option, with attributes that varied by design. Data-quality measures included a minimum 30-second timer per choice set, monitoring for suspicious response patterns, and 15% respondent back-checks.

Respondent Profile

Among the 684 respondents, 78.7% were male (n = 538) and 21.3% female (n = 146), with a mean age of around 28 years. The largest provincial share came from Bagmati (38.0%), followed by Koshi (22.5%) and Lumbini (13.7%). Education was skewed toward higher levels, with 55.6% reporting a bachelor's degree or higher.

Descriptive Findings

Across all choice tasks (684 respondents × 10 tasks = 6840 choices), the most selected alternative was cigarette packs (35.8%), followed by loose cigarettes (28.0%), quit/opt-out (22.1%), and vape/e-cigarettes (14.1%). In other words, even in a scenario where alternatives and quitting are explicitly offered, combustible cigarettes (especially packs) remain the dominant stated choice for many smokers.

A practical interpretation is that pack cigarettes likely represent the “default” product for many smokers in Nepal because they are familiar, consistently

available, and perceived as the standard form of purchase. This suggests that if policies make one combustible form less attractive (for example, stricter enforcement against loose sales), many smokers may not quit immediately; they may instead shift to packs or other options, depending on the policy mix and real-world access conditions.

Subgroup patterns show meaningful variation:

- Men chose packs more (37.2%), while women chose loose more (32.1%).
- In the case of vaping, more women (16.8%) chose vaping than men (13.3%).
- By education, pack cigarettes were the most selected option across all education levels (ranging approx. from 35 to 38%), while vape/e-cigarette choice was highest among respondents with professional/vocational/technical education (18.8%).
- By marital status, choice patterns were broadly similar, though never-married respondents showed slightly higher opt-out rates (23.7%) compared to single respondents (19.0%).
- By household income, pack cigarettes remained dominant across all income groups, while opt-out rates were highest among middle-income respondents earning NPR 1-2 million annually (30.3%).

How Policy Levers Shift Demand (Cross-Demand Patterns)

Before running full inferential models, cross-demand descriptive statistics show how choices move when one attribute changes, as summarized below:

- Raising the price of loose cigarettes shows a small reduction in loose selection (from 28.73% at Rs. 10 to 27.18% at Rs. 15), but the pattern is not perfectly smooth when the price rises again. Meanwhile, as loose becomes more expensive, pack selection rises slightly (from 35.87% to 36.93%), and vape selection rises modestly (from 12.92% to 13.51%). This suggests that price pressure on loose cigarettes can push some

smokers toward other products (especially packs) more than toward quitting.

- Making vapes harder to get (taking longer than 10 minutes) produces one of the clearest shifts: vape choices drop sharply (from 17.70% when available quickly to 10.85% when they may take longer). At the same time, choices shift toward pack cigarettes (from 34.01% to 37.38%) while quitting increases modestly (from 20.69% to 23.35%). In simple terms: if vapes are difficult to access, many smokers may not completely substitute toward quitting, most of them substitute back toward combustible cigarettes.
- Expanding pack warnings from 90% to 100% (a proposal under consideration) shows only minor shifts in choice shares in these descriptive comparisons (pack: 35.34% to 36.30%, quit: 21.79% to 22.43%, vape: 14.26% to 13.88%). This suggests that the incremental change from 90% to 100% may not substantially alter product choice in this experimental setting, although warnings may still matter in broader ways (e.g., risk perceptions, social norms, youth prevention) beyond the specific contrast tested here.

Model-based Results

The study estimates conditional logit and mixed logit models with quit/opt-out as the base alternative. Across both models, three consistent findings stand out:

- Price has a negative and statistically significant effect on choice; however, the magnitude of its coefficient is very small, indicating highly inelastic demand.
- Ban-on-paper is not enough; enforcement matters only when strict. For loose cigarettes, “illegal and strictly enforced” significantly reduces choice relative to legal, while “illegal but not enforced” is small and not statistically significant (i.e., behaves much closer to legal access).
- Availability is the major driver for vape/e-cigarette choices: when vapes “may take longer” to obtain, vape/e-cigarette choice drops substantially (the model implies roughly half the odd of choosing vapes/e-cigarettes compared to being available within 10 minutes).

- Marginal warning contrasts are not statistically decisive in the models: the shift from 90% to 100% pack warnings and the presence of textual warnings on vapes/e-cigarettes show negative but non-significant effects in the reported specifications.

The mixed logit results further indicate meaningful preference heterogeneity; smokers are not all responding the same way, which supports the need for targeted approaches rather than one-size-fits-all policy design.

Willingness-to-Pay (WTP) Signals

Using coefficient-ratio methods, WTP translates attribute disutility into compensating price reductions:

- Delayed vape availability carries the largest penalty: respondents would need roughly Rs. -49.3 to -52.2 (money-metric equivalent) to accept vapes that take longer to obtain rather than being available within 10 minutes.
- Strict enforcement of loose cigarettes corresponds to a large deterrent equivalent (approx. Rs. -165 to -172 in compensating discount terms across models).
- In contrast, WTP signals for warning changes (pack 90% to 100% and vape textual warnings) are smaller and interpreted as suggestive because the underlying coefficients are not statistically significant.

Post-DCE Behavioral Reflections

After the experiment, respondents self-reported that:

- Health warnings were most frequently ranked as the most important attribute, while legality/enforcement was most often ranked least important.
- However, there is a divergence: the econometric models later suggest that choices respond more strongly to price and availability than to warning content, consistent with social desirability and trade-off dynamics.

- 67.4% reported ever trying vapes/e-cigarettes, but recent use was often low; nearly 46% reported zero uses in the prior week, implying experimentation is common but sustained adoption is limited.
- Risk perceptions of vapes/e-cigarettes vs. combustible cigarettes were split: 39.0% “about the same,” 28.5% “less harmful,” 32.5% “more harmful,” suggesting significant uncertainty that may limit switching.
- Quit-related signals (stated interest) were strong: 67.3% reported a quit attempt in the past six months and 42.7% reported intending to quit within the next six months (though uncertain responses remained high at 34.9%).
- However, in the DCE tasks, the quit/opt-out option accounted for about 22% of choices, indicating a common gap between intentions and behavior, especially for addictive products.

Conclusions

Overall, the findings underscore that effective tobacco control and harm-reduction policies must function in a coordinated manner. Price, legality/enforcement, availability, and health warning messages need to be aligned to avoid counterproductive substitution patterns.

The evidence suggests that while a price increase slightly reduces the probability of selecting the product, it has a negligible impact on the likelihood of quitting. Rather, current smokers tend to switch towards other tobacco products. This pattern is consistent with consumer behavior commonly observed for addictive goods such as tobacco or nicotine products.

Product availability also plays a just as decisive role in how smokers substitute across nicotine products. When alternatives like vapes/e-cigarettes become less accessible (i.e., increased time to obtain them), many smokers do not quit; instead, they shift back toward combustible cigarettes. This highlights a critical risk: restricting access to potentially lower-risk products without strengthening cessation support or tightening controls on combustible tobacco can produce unintended negative outcomes among existing smokers.

At the same time, the findings underscore that policy effectiveness hinges on effective enforcement. Regulatory measures that exist only on paper (or are perceived as weakly enforced), such as bans on loose cigarette sales, tend to have minimal impact on behavior. In contrast, rules that are visibly and consistently enforced can substantially influence choices. Accordingly, restrictions on loose cigarette sales are unlikely to be effective unless enforcement is strong.

Similarly, although warnings are important to our respondents, change in warning size from an already high baseline (90% to 100%) shows only weak marginal behavioral effects. This points to the need for further evidence about efficacy of GHW for policy design.

Taken together, the results suggest that tobacco control and harm-reduction policies must be designed in an integrated manner, where price, enforcement, availability, and health warning messages are aligned to produce desired results.

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1. Introduction

1.1 Background and Policy Context

Globally, tobacco use remains a leading cause of preventable disease and premature mortality. The World Health Organization (WHO) estimates that tobacco kills more than 7 million people annually, including secondhand exposure (WHO, 2024). Complementing these estimates, an earlier risk-factor analysis by the Global Burden of Disease (GBD) reports that smoking accounted for 7.69 million deaths in 2019, ranking as the second-leading risk factor for mortality worldwide (GBD 2019 Tobacco Collaborators, 2021). Together, these sources underscore the persistent and large-scale health burden attributable to combustible tobacco use, and the importance of understanding factors that influence initiation and cessation and shift consumption away from the most harmful forms of nicotine delivery.

Mirroring global trends, tobacco use remains a major public health concern in Nepal as well, contributing to thousands of avoidable morbidity and mortality and imposing a substantial burden on households and the country's overall healthcare system. The 2019 nationally representative STEPS survey estimated 28.9% of adults (aged 15 to 69 years) used tobacco in some form, consisting of 48.3% men and 11.6% women (WHO, 2020). These figures underline the importance of both cessation support and demand-reduction policies. At the same time, Nepal's tobacco-control environment is characterized by implementation gaps, particularly around retail practices and enforcement, which can blunt the effectiveness of formal laws and regulations.

From a policy standpoint, tobacco control operates through multiple levers that alter the choice environment faced by users; most prominently, price (via excise taxes), legality/enforcement (via restrictions on sales practices and public use), availability (via retail access and access frictions), and health warnings (via packaging and product information), among others. These policy levers are central because they can change both the relative attractiveness of tobacco products and the perceived costs (financial, social, and practical) of purchasing and using them. In this sense, tobacco-control policies affect behavior not only by restricting options, but also by reshaping the attributes attached to those options.

In parallel, many countries, including Nepal, are navigating a more complex nicotine marketplace in which electronic nicotine delivery systems (ENDS) (e.g., vapes/e-cigarettes¹) are increasingly visible. It is important to distinguish terms clearly. ENDS refers to a product category (electronic devices delivering nicotine aerosol), whereas tobacco harm reduction (THR) is a public health strategy aimed at reducing harm by encouraging transitions away from combustible tobacco to demonstrably lower-risk alternatives for adults who would otherwise continue smoking. International evidence syntheses indicate that nicotine e-cigarettes can help some adults quit smoking for at least six months compared with nicotine replacement therapy and some other comparators, while also emphasizing that these products are not risk-free and require careful regulation, particularly to protect youth and non-users (e.g., evidence syntheses in Cochrane reviews; also see Munzel et al. (2020) for cardiovascular concerns and risk pathways). Though Nepal is still at an early stage of ENDS market development, the consumer behavior is beginning to shift subtly. However, this nascent trend is unfolding in the absence of clear public health narratives, regulatory frameworks, and informed market dynamics (e.g., clear guidance on relative risks of ENDS vs. smoking), adding further complexity to the nation's tobacco control efforts. These ambiguities highlight the importance of empirical evidence on how smokers respond to different regulatory attributes.

This is where preference elicitation (to understand what drives people's choices) becomes important. In low and middle-income country (LMIC) settings, the "real-world" choice is often shaped by informal retail practices, uneven enforcement, and high price sensitivity, alongside rapidly changing exposure to new products. Under these conditions, policy design requires anticipating substitution and switching for example, how smokers may respond when taxes rise, when retail access becomes more difficult, when enforcement becomes stricter, or when warning formats change. The international DCE literature shows that adult smokers' choices respond strongly to economic attributes (price) and also to informational and contextual attributes such as warning, product messaging, and regulatory

¹ Technically, e-cigarettes do not burn tobacco and do not produce tar or carbon monoxide, two of the most damaging constituents of cigarette smoke, though their aerosol contains other chemicals and nicotine. This biochemical distinction is relevant when interpreting risk communication and consumer choices.

context, with meaningful heterogeneity across subgroups (Marti et al., 2019; Hoek et al., 2020; Buckell et al., 2021). Recent work in other settings similarly demonstrates that Higher prices for non-combustible alternatives can push some users back toward cigarettes and can reduce quitting, reinforcing the importance of analyzing products as an interdependent system rather than as isolated markets (Kenkel et al., 2025). A broader policy literature also cautions that regulations targeting ENDS can have unintended effects if substitution toward combustibles or illicit channels is not anticipated (Hampsher-Monk et al., 2024).

Nepal's policy context makes these questions concrete. Packaging regulation has advanced substantially: Nepal introduced graphical health warnings (GHW) on cigarette packs in 2014 (GoN, 2014), and the discussions are ongoing to move toward 100% pictorial warning coverage, a major escalation intended to maximize warning salience and reduce product appeal (MoHP, 2024; see also Vital Strategies, 2025). If Nepal adopts the 100% GHW coverage, it is set to become one of the first countries in the world to command so. This directive mandates clear, visible warning messages with colorful images of the harmful effects of tobacco consumption covering the entire outer (front and back) surface of packaging in the native language. At the same time, loose cigarette sales, which typically bypass pack-based warnings altogether, remain an important practical concern. The sale of loose cigarettes is legally prohibited, but enforcement is uneven: even where restricted, loose sticks can remain available through inconsistent enforcement and informal retail norms. This creates a policy asymmetry in which one combustible product format (pack) is increasingly information-saturated while the other (loose) often remains information-spoor. Meanwhile, ENDS products in Nepal generally do not carry standardized GHW; where warnings exist, they are more likely to be textual and inconsistent, reflecting regulatory uncertainty and variability in product sourcing and retail channels. Together, these conditions create a strong rationale for studying health-warning attributes across product types in a way that matches how warnings are actually encountered by consumers.

These considerations directly motivate the four attributes used in this study's discrete choice experiment:

- **Price:** central to supply side standpoint of tobacco control (via taxes) and particularly consequential in LMIC contexts, where affordability strongly shapes uptake and switching patterns (Marti et al., 2019; Buckell et al., 2021).
- **Legality/enforcement:** crucial in contexts where formal rules exist but enforcement varies; explicitly distinguishing “illegal but not enforced” from “illegal and strictly enforced” can approximate realistic market experience and policy counterfactuals.
- **Availability:** a practical access friction that can differ sharply between ubiquitous combustible products and newer alternatives that supply access conditions can meaningfully shift choice shares at the margin (Marti et al., 2019).
- **Health warning:** a core informational policy lever; past evidence on DCE indicates warning content and message framing can change product appeal, with effects differing by user group and message type (Hoek et al., 2020), making it highly relevant as Nepal is discussing a shift from 90% to 100% coverage and considers how (or whether) warnings should apply to ENDS.

Against this backdrop, Prakriti Pragya Foundation (PPF) conducted a discrete choice experiment (DCE) among adult smokers in 2025, building on earlier work initiated in 2023 (PPN, 2024). The study is designed to quantify how smokers trade off policy-relevant attributes across loose cigarettes, pack cigarettes, vape/e-cigarettes, and a quit/opt-out alternative. By incorporating both combustible and non-combustible products, along with the option to quit, the DCE captures how consumers make decisions in realistic market and policy environments. Consistent with established DCE methods (Louviere et al., 2000; Train, 2009), the approach decomposes stated choices into interpretable preference parameters, enabling the evaluation of policy-relevant counterfactuals while holding other features constant. Importantly, the 2025 follow-up reflects an evolving regulatory and market context, including escalating health warnings and changing ENDS exposure, and enables examination of preference heterogeneity across socio-demographic groups. Together, the findings identify the attributes that appear most influential in shaping smokers’ stated choices, providing empirical evidence relevant to tobacco-control debates.

Including a quit/opt-out alternative in nicotine DCE designs is important because forcing respondents to choose between nicotine products only misrepresents real-world decision sets. An opt-out option improves behavioral realism by allowing respondents to express a preference for non-consumption or quitting when the presented alternatives are unattractive. This is particularly relevant in tobacco policy contexts in which the primary regulatory objective is cessation rather than substitution alone. This study explicitly notes this rationale and frames the opt-out as a necessary design feature to avoid forced choices between cigarettes and vaping products.

1.2. Building on the 2023 Discrete Choice Experiment

The 2025 Discrete Choice Experiment (DCE) builds directly on the foundational DCE conducted in Nepal in 2023, extending both the methodological scope and the policy relevance of the earlier work. The 2023 study provided the first systematic, preference-based evidence on how adult smokers in Nepal trade off combustible cigarettes, vape/e-cigarettes, and quitting when faced with variations in price, public-use restrictions, and health warnings. The present study advances this earlier work along four key dimensions: attribute refinement, regulatory realism, survey mode and design, and temporal depth.

First, the attribute framework has been refined and aligned with policy. The 2023 DCE emphasized price, flavor availability, enforcement of public-use bans, and health warnings, reflecting early-stage regulatory and market concerns for both combustible cigarettes and e-cigarettes in Nepal. The 2025 DCE retains conceptual continuity with this framework but adapts attributes to reflect evolving policy realities in the country, including segregation of combustibles into loose cigarettes and pack cigarettes. In particular, legality and enforcement are disaggregated for loose cigarettes into legal, illegal but not enforced, and illegal and strictly enforced states, reflecting the persistent enforcement gap observed in practice. Health warnings are also expanded to distinguish between 90% versus 100% graphical warnings on cigarette packs, directly aligning the experimental design with Nepal's impending transition to full-pack warning coverage. In addition, the 2025 study introduces availability (time-to-access) as a distinct attribute, especially for vape/e-cigarettes, capturing supply-side frictions that were not explicitly modeled in the 2023 experiment but have

become increasingly salient as ENDS markets expand informally. This evolution enables the current study to more precisely reflect real-world regulatory heterogeneity and enforcement uncertainty, which were only implicitly captured in the 2023 design.

Second, the 2025 DCE broadens the conceptualization of tobacco harm reduction (THR) by more explicitly distinguishing among combustible products, non-combustible alternatives, and quitting within a single-choice framework. While the 2023 DCE established that smokers are responsive to relative price and regulatory signals when choosing between smoking and vaping, the 2025 design deepens this analysis by incorporating warning regimes and availability constraints for vapes/e-cigarettes, thereby allowing for a more nuanced assessment of how harm-reduction options, complete with combustible products, under realistic market conditions.

Third, the study advances methodologically by shifting survey administration and experimental control. The 2023 DCE employed a face-to-face, enumerator-administered format with physical choice cards, which was well suited to establishing feasibility and comprehension in the Nepalese context. Building on this experience, the 2025 DCE employs a custom-built online platform that includes randomization blocking, enforced minimum reading times, and a standardized visual presentation of choice sets. This transition reduces enumerator-induced variation while preserving respondent comprehension, reflecting a deliberate evolution toward scalable, replicable experimental designs suitable for repeated preference elicitation in LMIC settings.

Fourth, and most importantly, the 2025 DCE introduces a rare element of temporal continuity in stated preference research. By drawing on respondents from the 2023 survey, the study provides a quasi-longitudinal perspective on smoker preferences. Although not a panel DCE in the strict sense, this design allows examination of whether preference structures observed in 2023 persist, attenuate, or shift as policy discourse, market exposure to alternatives, and regulatory signals evolve. This feature strengthens the interpretability of results by distinguishing stable preference patterns from short-term novelty or framing effects.

Taken together, the 2025 DCE represents a substantive extension of the 2023 study, preserving continuity in core behavioral questions while advancing attribute realism, data quality, and policy relevance. By doing so, it strengthens the evidence base for consumer-informed tobacco regulation and harm-reduction strategies in Nepal and comparable LMIC settings.

1.3 Objectives of the Study

The primary objective of this study is to elicit consumers' preferences for tobacco harm reduction products in the context of a developing country, Nepal.

Specific Objectives:

- Elicit preference for THR products across four key product attributes: price, legality, availability, and health warnings.
- Quantify the willingness to pay for and the tobacco harm reduction products (vapes/e-cigarettes).
- Generate empirical evidence relevant to ongoing discussions on product regulation, warning labels, and fiscal measures.

1.4 Significance of Study

Policy relevance. The study arrives as Nepal is planning to move from 90% to 100% graphical (pictorial) health warnings and is grappling with uneven enforcement of the loose-stick sales ban and uncertain ENDS regulations. By isolating the effects of price, legality/enforcement, availability, and health warnings, it provides the first Nepal-specific evidence on which levers actually shift smokers' choices toward packs, vapes, or quitting under realistic policy scenarios.

Demand-side evidence for smarter regulation. Most local policy debates emphasize supply-side controls (e.g., taxes, bans). This DCE study quantifies consumer trade-offs, showing how smokers respond when multiple levers move together (e.g., higher prices, stronger health warnings, and stricter enforcement simultaneously). This analysis illustrates how substitution across products may occur when multiple attributes change simultaneously.

Simulation inputs for fiscal, labeling, legality, and availability attributes.

The experimental framework enables simulation of alternative scenarios, including changes in price levels (e.g., increasing prices from low to medium or high for combustible cigarettes and/or vapes), comparison of 90% vs. 100% health warnings on packs, and different legality/enforcement conditions for loose cigarette sales (legal; illegal but not strictly enforced; illegal and strictly enforced). It also incorporates vape/e-cigarette availability scenarios, such as being available within 10 minutes versus being available but requiring more time to obtain. The estimated preference parameters can be used to simulate how different combinations of price, warning labels, legality/enforcement, and availability attributes influence product choice.

Harm-reduction lens, not just prevalence. By including both combustible and non-combustible alternatives, plus a quit/opt-out option, the study addresses tobacco harm reduction: when, and for whom, the attributes of alternative products (price, availability, legality/enforcement, warnings) nudge switching rather than continued smoking or quitting altogether.

Heterogeneity insights for targeted policy. The subgroup choice shares (by gender, age, province, caste/ethnicity, education, income, occupation) reveal which communities are most responsive to which levers. That supports equity-sensitive design (e.g., enforcement tactics in provinces with high loose-stick selection, or communication strategies where switching is high but opt-out is low).

Methodological contribution for LMIC settings. This is a large, well-powered, Nepal-specific DCE with efficient design and built-in quality controls (timers, pilot, and back-checks). It shows how to study legality/enforcement and availability (a context-heavy attribute, often ignored) alongside price and warnings. The instrument can be replicated for other South Asian markets.

Programmatic value beyond policy. The post-DCE module (advice received, quit attempts, intentions, risk perceptions, vape/e-cigarette exposure/usage, etc.) triangulates why choices looked the way they did. That's immediately useful for cessation programs, health-risk communication, and youth-protection messaging.

Timely baseline for future evaluation. With 100% GHW and other imminent changes, these findings create a pre-policy benchmark. Repeating the DCE after policy rollout will enable before/after comparisons and a stronger impact evaluation than routine surveillance alone.

Transparent and bounded limitations. Results generalize to current young-adult smokers aged 18-55, with at least secondary education and an urban/semi-urban tilt. They are stated preferences (albeit from a high-quality design), so pairing them with administrative and market data will sharpen real-world predictions.

Overall, this study turns policy-relevant questions (Which levers matter most for Nepali smokers, and for whom?) into quantified, simulation-ready evidence. These findings add to the empirical evidence on how smokers respond to regulatory attributes in Nepal.

1.5 Organization of the Study

The remainder of this report is organized as follows: Chapter 2 reviews relevant literature on tobacco product attributes and consumer choice. Chapter 3 outlines the study design and methodology. Chapters 4, 5, and 6 present descriptive findings wherein Chapter 4 describes the socio-economic characteristics of respondents, Chapter 5 presents smokers' preferences derived from the DCE, and Chapter 6 discusses behavioral reflections following the DCE. Likewise, Chapters 7 and 8 present inferential findings wherein Chapter 7 focuses on model-based estimates, while Chapter 8 presents willingness to pay estimates and further behavioral reflections. Chapter 9 discusses the key findings and their implications, while Chapter 10 synthesizes comparative insights from the 2023 and 2025 DCEs. Finally, Chapter 11 summarizes the evidence, highlighting the study limitations and suggesting areas for future research.

2. Literature Review

2.1 Review of Past Literature

2.1.1 Policy-Controllable Attributes in Tobacco Research

Tobacco-control policies primarily operate to influence consumer behavior by altering the attributes individuals (consumers) face when choosing among nicotine products, at the point of choice. Following the characteristics approach to consumer demand, individuals derive utility from product attributes rather than from products per se, so that policy effects can be interpreted as changes in attribute bundles (Lancaster, 1966). In nicotine markets, these attributes can be broadly categorized into price and non-price levers. Price is typically shaped by taxes and retail markups, while non-price attributes include regulatory and informational features such as legality and enforcement of sales, availability and access conditions, public-use restrictions, health warnings, packaging requirements, flavors, and nicotine concentration (Louviere et al., 2000; WHO, 2024).

This distinction is practical for policy because prices are often the most visible fiscal lever, whereas non-price regulation determines whether potentially lower-risk alternatives are realistically accessible to adult smokers and whether youth initiation risk is contained. These trade-offs are particularly salient in LMICs, where enforcement capacity is uneven, informal markets are substantial, and affordability constraints and access frictions can shape how policies translate into lived-choice environments (Hampsher-Monk et al., 2024).

2.1.2 Why DCEs Are Appropriate for Nicotine Policy Questions

Discrete Choice Experiments (DCEs) have become a widely used stated-preference method for quantifying how consumers trade off price and non-price attributes across competing products (Louviere et al., 2000; Train, 2009; Lancsar & Louviere, 2008; McFadden, 1974). The use is more widespread in health economics studies, where researchers need ex-ante evidence for counterfactual policies (Ryan et al., 2008). And now, for tobacco and nicotine policy studies, because many interventions of interest (such as stronger warnings, enforcement regimes, retail restrictions, or changes

in legality) require ex ante evidence of likely behavioral responses before policy implementation (Louviere et al., 2000; Train, 2009). DCE designs vary attributes experimentally while holding other features constant, enabling estimation of marginal utilities and simulation of counterfactuals.

In tobacco and nicotine literature, DCEs have been applied to conventional combustible cigarettes, heated and electronic alternatives, as well as to other emerging nicotine delivery systems and cessation or opt-out alternatives (Hoek et al., 2020; Kenkel et al., 2025; Shang et al., 2020). DCEs are mostly used to estimate (i) relative importance of attributes; (ii) substitution patterns across combustible cigarettes, alternatives, and quitting; and (iii) heterogeneity in responsiveness across population segments (e.g., by age, gender, education, smoking intensity, and income) (Buckell et al., 2021; Hoek et al., 2020; Kenkel et al., 2025). Because tobacco regulation frequently aims to shift behavior along a harm-reduction gradient: toward cessation or, for those unable/unwilling to quit, toward lower-risk alternatives. Understanding how smokers respond to changes in each attribute is essential for designing effective tobacco-control and harm-reduction strategies (Marti et al., 2019; Hoek et al., 2020; Buckell et al., 2021; Kenkel et al., 2025). And this is where the DCE methodologically contributes by offering a structured way to quantify behavioral trade-offs that standard prevalence surveys cannot directly identify.

2.1.3 Theoretical Framework and Model Implications for Policy Inference

DCEs are grounded in random utility theory, in which an individual selects the alternative that yields the highest latent utility. Utility is typically specified as a function of observable attributes and an unobserved stochastic component (McFadden, 1974; Train, 2009). Under this framework, the estimated coefficients represent marginal utilities associated with attribute levels, allowing researchers to decompose observed choices into the relative importance of attributes and to forecast how changing policy-controllable variables (e.g., price, warnings, enforcement, and availability) would shift choice probabilities.

DCEs typically randomize attribute levels within labeled alternatives, estimate conditional (multinomial)¹ or mixed logit models², and report willingness-to-pay (WTP) or preference weights for attributes that regulators can change (Train, 2009). Conditional (multinomial) logit models for average preference structures and mixed logit allows preference heterogeneity and relaxes the independence of irrelevant alternatives assumption. Mixed logit approaches are particularly important in nicotine markets because responsiveness to price, warnings, or access constraints often differs by age, gender, dependence intensity, socioeconomic status, and prior experience with alternatives (Train, 2009). In practice, this also enables subgroup-relevant policy inference (e.g., whether warning or enforcement policies shift preferences more for particular demographic groups). In the Nepal 2025 DCE analysis, preference heterogeneity is explicitly examined through mixed logit specifications incorporating respondent characteristics, including sex, age, education, marital status, and income.

Methodologically, DCE emphasizes efficient designs (e.g., D-optimal designs), labeled alternatives, and careful limits on choice-set burden to mitigate hypothetical bias. At the same time, DCEs are stated-preference instruments, meaning their results may diverge from actual revealed behavior in real-world contexts, due to hypothetical bias and framing effects. To mitigate these concerns, tobacco-related DCE studies often discuss incentive compatibility and incorporate additional design features (such as careful segregation of choices into blocks, minimization of cognitive burden, attention checks, time constraints, and/or incorporation of small real incentives components) to encourage thoughtful and truthful responses (Buckell et al., 2021; Hoek et al., 2020).

2.1.4 Evidence on Price Effects and Cross-Product Substitution

Across DCE studies of nicotine products, own-price effects are consistently negative, i.e., increasing the price of a product reduces its choice (selection)

² Conditional (multinomial) logit models: assume homogeneous preferences and impose the independence of irrelevant alternatives (IIA) property (McFadden, 1974; Train, 2009).

³ Mixed logit models: relax strict homogeneity by allowing coefficients to vary across individuals, capturing preference heterogeneity that is consistently observed in nicotine product choices (Train, 2009).

probability (Marti et al., 2019; Buckell et al., 2021; Kenkel et al., 2025). A central policy insight is that price is not merely a revenue tool; it is also a behavioral lever. However, the key harm-reduction question is not only about own-price responses but also about cross-product substitution. The literature increasingly highlights that when a potentially lower-risk alternative becomes more expensive or less attractive, some smokers revert to cigarettes rather than toward quitting; conversely, cheaper or more attractive alternatives increase substitution away from combustibles (Buckell et al., 2020; Marti et al., 2019; Kenkel et al., 2025).

For example, in Japan, a large DCE examining cigarettes, heated tobacco products, and quitting reports that higher alternative-product prices can push consumers back toward combustibles and can reduce quitting in the simulated choice environment (Kenkel et al., 2025). Similarly, U.S.-based DCE evidence shows that policy-relevant attributes (including price and use restrictions) can segment smokers into groups that are either highly resistant to switching or meaningfully responsive to policy levers (Buckell et al., 2021).

Beyond stated-preference studies, policy evaluations also suggest that regulatory bundles can affect both smoking and vaping behavior, reinforcing the importance of anticipating substitution rather than evaluating products in isolation (Arnold & Joshi, 2025). Taken together, this evidence supports the policy logic of designing **coherent tax and regulatory structures across products**, rather than relying solely on cigarette taxation without considering the pricing and accessibility of alternatives.

2.1.5 Non-Price Attributes I: Health Warnings, Messages, and Packaging

Health warnings influence consumer decisions by increasing risk salience, shaping beliefs about harm, and reducing product appeal (Du & Wang, 2025; Emery et al., 2014; Noar et al., 2020). DCEs and related experiments consistently show that warning format and content alter preferences in intended directions, but effects vary by audience (heterogeneous across different subpopulations and context-dependent). For instance, in a discrete-choice study of e-liquid packaging messages, reduced-risk messages increased ENDS appeal among a subset of smokers but reduced

appeal among others; meanwhile, risk messages reduced interest among susceptible non-smokers and occasional/former smokers (Hoek et al., 2020). This pattern aligns with a broader regulatory tension: policymakers often want to encourage switching to low-risk alternatives among current smokers who would otherwise continue smoking, while also preventing uptake among non-smokers and youth.

In combustible markets, large pictorial warnings are widely used to reduce product appeal and strengthen risk perception. Hoek et al. (2020) also emphasize this in their experimental study, suggesting that larger graphical warnings and standardized packaging are associated with lower pack appeal and stronger risk perceptions. Nepal's policy trajectory (moving from 90% to 100% coverage) fits within a global warning-label trend that aims to maximize visibility and reduce the branding space available on pack. For ENDS, warning requirements are far less standardized across countries, and where warnings exist, they are often textual rather than pictorial, reflecting both regulatory uncertainty and divergent risk-communication approaches (WHO, 2024).

Because warning labels are a policy-controllable informational attribute, DCE designs that vary the warning format and intensity are well positioned to estimate which warning changes meaningfully shift choices and which may be less consequential than price or access constraints (Hoek et al., 2020; Kenkel et al., 2025). Crucially, several DCEs show that information cues (e.g., “less harmful than cigarettes,” “helps quitting”) can rival price in importance for policy-responsive segments (Marti et al., 2019). This has two implications for Nepal. First, moving from 90% to 100% pictorial coverage can plausibly increase warning salience at the margin on cigarette packs. Second, for ENDS, message framing matters: textual warnings and relative-risk communication should be designed to support adult smokers' switching/cessation while deterring initiation among non-smokers and youth (Hoek et al., 2020).

2.1.6 Non-Price Attributes II: Legality, Enforcement, and Public-Use Context

Legality and enforcement shape consumers' perceived friction and social acceptability. Importantly, “law on paper” may differ from “law in practice,”

particularly in settings with uneven enforcement and informal retail channels (Hamilton et al., 2007; Wang et al., 2025; Wynne et al., 2018). DCE research increasingly distinguishes between nominal illegality and credible enforcement intensity because behavioral responses depend on whether consumers view a restriction as binding.

DCE evidence indicates that regulatory-context attributes can meaningfully shift preferences among subsets of smokers who are responsive to policy levers (Buckell et al., 2021). A cross-country regulatory synthesis further cautions that restrictions can sometimes generate unintended consequences, such as informal markets and aftermarket modifications, if regulations are not designed with behavioral substitution in mind (Hampsher-Monk et al., 2024). This is particularly relevant where policies prohibit loose-stick sales, but enforcement varies across geography and retail environments.

For Nepal, legality/enforcement is not merely a “binary rule,” but a realistically graded attribute: the lived experience of policy frequently ranges from “legal,” to “illegal but weakly enforced,” to “illegal and strictly enforced”. Legal prohibitions may have a limited effect if enforcement is weak, whereas credible enforcement may substantially alter choice. Where enforcement is uneven, as with Nepal’s ban on loose-stick sales, DCEs that distinguish “illegal but not enforced” from “illegal and strictly enforced” better capture real-world decision environments. Incorporating enforcement intensity as an explicit attribute, therefore, increases external validity by approximating the real-world decision context.

2.1.7 Non-Price Attributes III: Availability, Access Friction, and Retail Channels, Including Online Access

Availability reflects the practical ease of acquiring a product, including proximity, time to access, outlet type, and purchasing channel (e.g., convenience stores, specialty shops, or online ordering). From an economic perspective, availability can be interpreted as part of the full price of consumption (money price plus time and transaction costs). When access becomes slower or more inconvenient, product utility declines even if the posted price is unchanged (Chiappori & Lewbel, 2015).

DCE studies in tobacco control have traditionally focused on product characteristics such as price, flavor, perceived harm, and cessation effectiveness, but direct evidence from DCE on the role of attributes related to proximity/distance/time to access in tobacco product choice is limited. A systematic review by Regmi et al. (2017) confirms that time and distance attributes have been used in some tobacco DCEs, but inconsistent. Likewise, findings from non-DCE tobacco-control studies such as those of Chaiton et al. (2014), Travis et al. (2022), Martin-Gall et al. (2024), Mennis & Mason (2016), Mistry et al. (2022), and Valiente et al. (2021), among other consistently indicate a significant association between the availability-related attributes and the smoking behaviors. In particular, these studies emphasize that the speed and channels through which products are obtained play a critical role in shaping product choices and patterns of use/consumption. For instance, a systematic review of 35 quantitative studies concluded that a higher density of tobacco retailers near homes and communities is positively associated with smoking behaviors, including use and susceptibility (Marsh et al., 2021). This provides strong evidence that the availability attribute is conceptually relevant yet underutilized in existing DCE research. The present study acknowledges this gap and seeks to address it.

In this study, time-to-access, or “availability within 10 minutes,” serves as a proxy for transaction costs. Adding access friction (e.g., “may take longer to obtain”) can reduce selection probabilities relative to immediate availability. This is conceptually consistent with consumer demand theory and Becker’s theory of the allocation of time: as the full price of a product rises (the money price plus the time and inconvenience cost), its attractiveness declines (Chiappori & Lewbel, 2015). This attribute is especially relevant for vapes/e-cigarettes in Nepal because access often differs structurally from combustibles. While combustible cigarettes are typically available through dense retail networks, vapes/e-cigarettes may be obtained through specialty outlets or online ordering, where delivery and search costs can imply non-trivial delays. Thus, an “available within 10 minutes” versus “may take longer” framing plausibly captures the gap between ubiquitous combustible access and more episodic vapes/e-cigarettes acquisition.

From cross-national perspectives, ENDS availability is shaped by retail-channel regulation. Some countries permit sales in widely accessible outlets

(e.g., convenience stores and supermarkets), while others restrict sales to licensed or specialized channels, often linked to product classification and nicotine content regulation (Hampsher-Monk et al., 2024; WHO, 2024). For instance, Australia has used comparatively restrictive frameworks that channel nicotine vaping products through regulated pathways (Australian Government Department of Health and Aged Care, 2024), whereas other settings have historically allowed broader retail availability under consumer-product-style approaches (WHO, 2024). South Asia shows wide variation as well, including outright prohibitions in some jurisdictions (e.g., India’s prohibition law) and more mixed or weakly enforced environments in others, with informal or specialty shop access commonly reported in regional overviews (Government of India, 2019; WHO, 2024).

Given this diversity, incorporating availability/access friction into the Nepal DCE is not only locally relevant but also internationally comparable: it enables interpretation of how changes in retail channel accessibility (such as tighter control of online sales or expanded proximity availability) could shift choices across combustible cigarettes, vapes/e-cigarettes, and quitting.

2.1.8 Other Common Non-Price Attributes in Wider DCE Literature

Many nicotine-product DCEs include flavor and nicotine concentration because these attributes are central to debates about product differentiation, youth appeal, and regulatory design (Buckell et al., 2021; Kenkel et al., 2025; Monzon et al., 2021; Shang et al., 2020). However, their relevance and interpretability depend heavily on market maturity, consumer knowledge, and policy focus. In some contexts, flavors increase product appeal, particularly among younger consumers, and therefore become focal points of regulation. In other contexts, flavors may be less salient among adult smokers, especially where tobacco flavor dominates historically and where information about non-tobacco varieties is limited.

Nepal’s 2023 DCE evidence (PPN, 2024) provides empirical grounds for not prioritizing flavor as a core attribute in the 2025 DCE design. When examined for cross-effects, the 2023 DCE study finds no meaningful cross-effects in the choice-shift analysis for flavors (i.e., flavors weren’t driving substitution

patterns in a meaningful way). The MWTP estimates for “two flavors” and “many flavors” are negative (relative to the one-flavor/tobacco reference), which is a strong quantitative justification that flavors were not a “value-adding” attribute in stated preferences in LMIC settings like Nepal.

Nicotine concentration is also a frequently used attribute in DCE designs, but it also possesses interpretability challenges where product labeling is inconsistent, and consumer comprehension of nicotine dosing terminology may be limited (Ford et al., 2025; Monzon et al., 2021; Morean et al., 2021). So it’s reasonable to say, for the 2025 DCE (this study), the design therefore prioritizes four policy-immediate attributes with clearer interpretability in the adult smoker sample (price, legality/enforcement, availability, and health warnings) while also reducing respondent burden by not retaining an attribute (flavor) that did not appear to add explanatory or policy value in the Nepal 2023 evidence base. The chosen attributes align directly with Nepal’s current and near-term regulatory debates (taxation and affordability; enforcement of loose-stick bans; differential access to alternatives via specialty/online channels; and pack-warning expansion).

Overall, flavor and nicotine content are important but were not prioritized here because (i) nicotine content information may be difficult for participants to interpret consistently in low-income settings where cognitive limitations are persistent (Ford et al., 2025; Monzon et al., 2021; Morean et al., 2021), and (ii) the primary policy question motivating this DCE concerns enforceable and scalable levers in Nepal’s present regulatory environment rather than detailed product engineering standards.

2.2 Synthesis and Implications for Nepal

Across settings, the literature indicates that tobacco product choices are shaped by both price and non-price policy levers (Marti et al., 2019; Hoek et al., 2020; Kenkel et al., 2025; Hampsher-Monk et al., 2024; Arnold & Joshi, 2025). However, the relative importance of attributes and the direction of substitution patterns often differ between high-income and LMIC contexts, reflecting differences in enforcement capacity, retail structure, informal markets, risk communication regimes, and product familiarity.

Nepal's regulatory environment is characterized by (i) widespread availability of combustibles through both pack and loose channels, (ii) uneven enforcement of sales restrictions for loose cigarettes, (iii) a nascent but growing alternative products market shaped by specialty/online access, and (iv) a major warning-label policy transition (from 90% to 100% GHW coverage) for combustible packs.

Therefore, in this context, the 2025 DCE (present study) focuses on four key attributes (price, legality/enforcement, availability, and health warnings), which are not only policy-controllable levers but also reflect the most immediate instruments available to regulators. The evidence base suggests that these levers interact: for instance, warning policies may be undermined if smokers can avoid exposure by purchasing loose sticks, and fiscal policies may yield unintended substitution if relative prices or access constraints shift demand toward more harmful products. Nepal's DCE design is therefore aligned with international evidence while tailoring attributes to the country's distinctive market and enforcement realities.

2.3 Research Gap

Despite extensive global research on tobacco control, empirical evidence on how smokers in low- and middle-income countries (LMICs), particularly using the context of Nepal, respond to variations in product attributes such as price, legality, availability, and health warnings remains scarce. Most published DCE evidence comes from high-income settings (e.g., the United States, Japan, New Zealand, and the United Kingdom) where enforcement capacity is stronger, retail access structures differ, labeling regimes are more standardized, and ENDS markets are more mature. As a result, these findings cannot be generalized directly to contexts in the Global South.

Furthermore, there is limited Nepal-specific literature that examines the combined effects of fiscal (price) and regulatory (legality, availability, health warnings) levers across both combustible and non-combustible products, including the option to quit. Existing national studies on tobacco control in Nepal primarily focus on prevalence, awareness, or cessation outcomes, offering little insight into how smokers simultaneously evaluate multiple product attributes when making real-world choices. Notably, the 2023

discrete choice experiment (DCE) conducted by PPN (2024) represents the first application of DCE methodology to tobacco markets in Nepal. Building on this foundational work, the present DCE further strengthens the evidence base by expanding behavioral insights and policy-relevant analysis.

The present study is novel also because we include availability as an attribute. Availability/access friction remains underrepresented as an explicit attribute, despite substantial evidence that retail access conditions influence smoking behavior and despite the policy relevance of retail channel regulation in shaping harm-reduction opportunities. Policy/Regulation on availability vary across countries and contexts (e.g., online, designated cafés, studios, nicotine content, etc.). In Nepal, vapes are primarily available online and in specialized outlets, which may be difficult to access. We examine what happens if they are available in proximity (e.g., combustible cigarettes).

Additionally, Nepal's unique policy trajectory (including the move toward full-coverage pictorial warnings on packs and persistent gaps in the enforcement of loose sales restrictions) creates a context in which the interaction between warnings and enforcement is especially relevant but rarely studied directly. Nepal is on the point of becoming one of the first few countries to mandate 100% graphical health warnings on cigarette packs. No behavioral evidence currently informs how such enhanced warnings might affect smokers' preferences relative to price increases or enforcement intensity.

Therefore, this study addresses a critical evidence gap by:

- i. Quantifying adult smokers' preferences across combustible cigarettes (loose and pack), vapes/e-cigarettes, and a quit/opt-out alternative.
- ii. Estimating trade-offs among price and three non-price policy levers: legality/enforcement, availability, and health warning format/intensity.
- iii. Identifying preference heterogeneity using mixed logit specifications incorporating respondent characteristics, including sex, age, education, marital status, and income.

- iv. Providing Nepal-specific behavioral insights to guide price hikes (or taxation), product packaging and labeling, and harm-reduction policy design.

In summary, while the global literature has established that choices of combustibles and alternative products are sensitive to policy-controllable attributes, the absence of localized behavioral data leaves Nepal's regulatory decisions largely assumption-driven rather than evidence-informed. This study fills that void by offering the first DCE-based empirical evidence on how Nepali smokers respond to real-world combinations of economic and regulatory changes.

3. Design & Methodology

This chapter details the methodological approach, including sampling and recruitment, survey instrument development, the discrete choice experiment (DCE) design, survey administration and quality-control measures, the econometric framework for inference, and ethical considerations.

3.1 Sampling Framework and Recruitment

3.1.1 Sampling Frame and Approach

A multi-stage, non-probabilistic sampling approach was applied. The sampling frame was the 2023 adult tobacco-user survey conducted by Prakriti Pragya Nepal (PPN), which included 3,065 adult participants (PPN 2024). Among them, 2,921 (95.3%) consented to being re-contacted for future studies. The 2025 follow-up survey purposively sampled from this re-contact pool, and applied screening and quota-based criteria to ensure inclusion of key subgroups relevant to tobacco and emerging THR policy questions.

3.1.2 Inclusion Criteria and Rationale

The criteria were chosen to balance (i) policy relevance (adult smokers most exposed to the choice environment), (ii) feasibility for administering a DCE, and (iii) sufficient heterogeneity for subgroup comparisons.

Age (18 - 55 years): to focus on the most active segment of the adult population in terms of tobacco and e-cigarette use. Setting 18 years as the lower limit is consistent with Nepal's Tobacco Products (Control and Regulatory) Act, 2068 (2011), ensuring legal and ethical eligibility. The average age of initiation according to the WHO-STEP survey 2019 is also approximately 18 years (NHRC, 2019). Similarly, the upper limit of 55 years allows coverage of a broad adult age range in which both conventional smoking and uptake of newer products such as e-cigarettes are more common, while reducing potential confounding from age-related morbidity, which is more prevalent in older populations (CDC, 2024). This age range also reflects known life-course patterns in tobacco use, which tend to

increase in early adulthood and decline later due to cessation and health-related factors, thereby capturing the group most likely to engage in and transition between different forms of tobacco use (Reitsma et al., 2021).

Geography: at least 60% from Kathmandu Valley and the remainder from other urban/semi-urban areas. Urban and semi-urban locations were prioritized considering their higher tobacco prevalence rate and the largest vape/e-cigarette consumer base (NHRC, 2019). The Kathmandu Valley was intentionally overrepresented as Nepal's largest urban agglomeration and primary commercial hub for nicotine products, including both retail and online distribution channels for vapes and e-cigarettes. Its high population density and market concentration make it a natural focal point for observing substitution behaviors between combustible cigarettes and emerging non-combustible alternatives (NDHS, 2022). The remaining sample was drawn from diverse urban and semi-urban locations to capture variation in enforcement intensity, access frictions, and affordability contexts outside the capital region.

Gender: at least 20% female (oversampling). Female respondents share a smaller share of the smoking population (6.36% in NDHS 2016; 4% in NDHS 2022) and the prevailing social norms can reduce willingness to participate in tobacco-related surveys. Oversampling women improves precision for gender-disaggregated inference and avoids a purely male-dominant sample that would mask heterogeneity in product preferences and policy responsiveness by capturing use patterns, perceptions, and behaviors between males and females.

Education: A minimum of secondary-level education was required because DCE tasks involve comparing multiple attributes across alternatives. This threshold helped ensure that respondents could accurately comprehend the survey questions and reduced random or uninformed responses arising from limited task understanding.

3.1.3 Recruitment and Screening Flow

After applying the quota filters described above, 2169 respondents were randomly selected from the re-contact pool (in two phases: 1180 and 989)

and were approached for re-consent. Of these, 1056 (48.69%) re-consented to participate in the 2025 survey.

From those who consented, three structured screening questions were used to exclude: (i) non-smokers, (ii) individuals who had participated in similar tobacco DCEs within the past three months, and (iii) those affiliated with the tobacco/vape manufacturing/selling companies.

Table 1: Key Screening Questions Used for Respondent Selection

Question Code	Screening Question	Response Options	Action
A01	Do you currently smoke?	Yes No	If Yes → continue to A02 If No → terminate
A02	Have you participated in a tobacco-related survey in the last 3 months?	Yes No	If Yes → terminate If No → continue to A03
A03	Do you work for a tobacco/vape company?	Yes No	If Yes → terminate If No → proceed with the survey

The rationale for including the screening questions was to ensure the integrity and relevance of the survey data by excluding participants who did not meet key criteria. Non-smokers and former smokers were excluded as the study focused specifically on current smokers. Those who have participated in similar surveys within the past three months were removed to minimize response bias and ensure fresh, uninfluenced data. Additionally, individuals affiliated with the tobacco or vape industry were excluded to avoid potential conflicts of interest or biased responses, thereby maintaining the objectivity and credibility of the findings.

3.1.4 Final Analytic Sample

After screening and quality checks, 684 complete and valid responses were retained for analysis (64.77% of re-consented participants).

Table 2: Survey Recruitment Statistics

Description	Frequency (n)	Percentage (%)
Baseline Pool (Total participants in 2023 survey)	3,065	-
Re-contact pool (2023 survey participants who consented to re-contact)	2,921	95.30
Re-consented participants (agreed when re-contacted this time)	1,056	48.69*
Valid and complete responses	684	64.77**
Male Respondents (out of 684 complete responses)	538	78.65
Female Respondents (out of 684 complete responses)	146	21.35

Notes: *% of those originally contacted (2,921); **Response rate from re-consented participants (1,056).

The socio-demographic profile of the respondents is presented in Chapter 4.

3.1.5 Response rate and validity of inference

While the response rate from the re-consented sample is 64.77%, a response rate alone does not mechanically determine bias or invalidate econometric inference. In DCEs, identification primarily comes from within-respondent trade-offs across repeated choice tasks, rather than from cross-sectional means alone. The key threat is systematic non-response correlated with preferences, not non-response per se. Several mitigation features were applied: (i) sampling quotas for key subgroups (gender, geography), (ii) screening to ensure relevance to current smokers, (iii) platform controls (minimum time, randomized block assignment), and (iv) post-data-collection quality checks to reduce inattentive responding. Accordingly, estimates are interpreted as preference parameters for the analytic sample of adult smokers recruited through the re-contact frame, with policy implications framed around behavioral responses rather than population prevalence.

3.2 Survey Instruments

3.2.1 Survey Platform

Due to the complexity of administering DCE, a custom online survey platform was developed specifically for the 2025 survey. The platform was designed to meet the technical and methodological needs of the study while providing seamless user experience.

The custom-built survey platform featured several advanced functionalities, including:

- Structured display of visual/textual choice sets in a user-friendly interface, enhancing participant engagement and comprehension.
- Random assignment of blocks to the respondents (each respondent was randomly assigned either A, B, or C block), ensuring balanced distribution across the sample.
- Built-in logic to enforce a minimum reading time (30-second timer-based restrictions) per choice set to encourage thoughtful participation.
- Integration of audio-visual support for improving comprehension, particularly targeted for those participants with varying understanding levels.
- Real-time monitoring of responses by the research team, enabling prompt quality checks and troubleshooting.

Respondents could view one choice set per screen and were asked to select their preferred option, one out of the four alternatives: Loose Combustible Cigarettes, Packed Combustible Cigarettes, Vape/E-cigarettes, and a Quit/Opt-out option. This structured and interactive design facilitated reliable data collection and helped capture nuanced preferences in tobacco product choices.

3.2.2 Questionnaire Structure

A bilingual questionnaire, available in both English and Nepali, was developed to ensure accessibility and comfort for all respondents, who could switch between languages using a toggle button in the custom-built online survey platform. The questions were designed to be short, clear,

and easily understandable, using a neutral tone to minimize bias. Leading and double-barreled questions were deliberately avoided to maintain the validity and reliability of the responses.

The questionnaire consisted of five modules:

- Module A: Screening
- Module B: Consent
- Module C: Discrete Choice Experiment
- Module D: Post-Experiment Questions
- Module E: Socio-Economic and Demographic Characteristics

The questionnaire was structured in this specific order to ensure a logical, ethical, and methodologically sound flow of information. The screening section was placed early to identify eligible respondents and terminate ineligible ones before proceeding, thereby saving time and resources. Next, informed consent was obtained to uphold ethical standards, ensuring participants were fully aware of the study's purpose, their rights, and the voluntary nature of their participation. The choice tasks followed immediately after, as it was the core component of the study and required respondents' full attention and unbiased responses, which are best obtained early in the survey before fatigue sets in (Gehlbach & Artino, 2018). Post-experiment questions were included afterward to gather immediate reflections, validate choices, and explore underlying decision-making processes. Finally, the socio-economic and demographic section was placed at the end to reduce the risk of stereotype priming or influencing responses in the main experiment, while still capturing essential background information for analysis.

3.2.3 Training, Pilot-Testing, and Refinement

To ensure smooth and consistent administration of the survey, a detailed survey administration manual was developed. This manual provided clear explanatory notes and step-by-step procedures for conducting the survey. The research team underwent rigorous training to familiarize themselves with the tools, methodology, and ethical protocols. The team received structured training on consent, respondent support, neutrality in prompting, and handling comprehension issues without leading respondents.

In addition, to test the functionality of the platform and validate the DCE instrument, a pilot survey was conducted. For this, 137 baseline respondents were randomly selected from the 2023 baseline survey re-contact pool (who had previously consented for follow-up studies). Of these, 55 respondents re-consented for the pilot which yielded 24 valid responses (43.6% of pilot participants). Pilot feedback led to specific refinements, including:

Wording and clarity: Simplified Nepali translations for attribute statements (especially legality/enforcement and availability) to reduce ambiguity.

Attribute explanations: Added brief “hover/help” explanations (or short explanatory text) for less familiar terms (e.g., “textual warning,” “strict enforcement”).

Time constraint adjustment: The minimum reading time was reduced to 30 seconds (from initial 60 seconds for each choice set), and the guidance text was refined to encourage thoughtful comparison rather than “waiting out” the timer.

Platform flow: Minor adjustments to navigation prompts and error messages (e.g., ensuring respondents cannot proceed without selecting an option).

Enumerator support protocol (telephonic): In case of difficulties in comprehension, enumerator support was provided via telephonic conversation. However, there was a standardization on how support staff respond when respondents ask, “which one should I choose?” (i.e., reiterating that there is no correct answer).

In this way, the key issues identified during the pilot survey were thoroughly addressed, and the survey tools/instruments were revised and improved accordingly. These revisions improved task comprehension and reduced avoidable item-level confusion before field launch. In addition, the research team was further trained based on the pilot findings to ensure consistent and accurate implementation, ensuring the entire team and materials were fully prepared for the main survey.

3.3 DCE Design and Experimental Framework

3.3.1 Alternatives and Attributes

The DCE was structured and built around four distinct product alternatives:

- Option A: Loose Combustible Cigarettes
- Option B: Packed Combustible Cigarettes
- Option C: Vape/E-cigarettes
- Option D: Quit/Opt-out option

Figure 1: Pictorial Demonstration of Product Alternatives

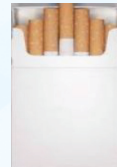
Broad Product Alternatives

Pictorial Demonstration

Option A: Loose Combustible Cigarettes



Option B: Packed Combustible Cigarettes



Option C: Vape/E-cigarettes



Including Option D: Quit/opt-out option is essential for realism and welfare-consistent interpretation. In real markets, consumers can choose not to purchase (or to quit/forego consumption). Excluding this option forces substitution among products and can inflate demand for “least-bad” options, biasing preference estimates. Including “Quit/opt-out” allows the model to represent a genuine outside option, improving external validity for policy simulation.

Each product alternative was defined by a consistent set of four policy-relevant attributes. These were developed based on previous studies (literature review), market characteristics, Key-Informant Interviews (KIIs), and policy relevance. KIIs were conducted with smokers, dealers, retailers, etc., to validate key attributes that could be potential determinants of the decision to buy a product.

Subsequently, the attributes used in the DCE were:

- Price
- Legality/Enforcement
- Availability
- Health Warning


Attribute levels were designed to be realistic for Nepal’s market context and interpretable for respondents.

3.3.2 Attribute-Level Matrix

The price attribute was assigned three levels for each product type, reflecting realistic market prices: low, medium, and high. Legality/Enforcement varied across products, with loose cigarettes having three levels reflecting different enforcement scenarios, while packed cigarettes and vaping were considered legal. Availability captured how easily each product could be accessed, with vape products also including a level indicating delayed availability. Health warning levels varied by product type: loose cigarettes could have no warning, packs had 90% or 100% graphical warnings and vapes had either textual warnings or none.

Table 3 below summarizes the DCE matrix that served as the basis for designing the various choice sets distributed across different blocks.

Table 3: DCE Matrix Presenting Attributes and Levels for Each Product Alternative

Attributes	Loose Cigarette	Pack Cigarette	Vape/e-cigarette	Quit/ Opt-Out
Price	<ul style="list-style-type: none"> ● Rs. 20 per stick ● Rs 15 per stick ● Rs 10 per stick 	<ul style="list-style-type: none"> ● Rs 350 per pack ● Rs 250 per pack ● Rs. 150 per pack 	<ul style="list-style-type: none"> ● Rs 460 (for 300 puffs) ● Rs 260 (for 300 puffs) ● Rs 100 (for 300 puffs) 	
Legality/ Enforcement	<ul style="list-style-type: none"> ● Loose sale is legal ● Loose sale is illegal but not strictly enforced ● Loose sale is illegal and strictly enforced 	<ul style="list-style-type: none"> ● Pack sale is legal 	<ul style="list-style-type: none"> ● Both loose and pack sales are legal 	
Availability	<ul style="list-style-type: none"> ● Available within 10 minutes of reach 	<ul style="list-style-type: none"> ● Available within 10 minutes of reach 	<ul style="list-style-type: none"> ● Available within 10 minutes of reach ● Available but may take a longer time 	
Health Warning	<ul style="list-style-type: none"> ● A health warning is not present 	 <p>● 100 percent graphical health warning</p>	<ul style="list-style-type: none"> ● Textual Health warning is present ● A Textual Health warning is absent 	
Which option would you choose?	Option(A)	Option(B)	Option(C)	Option(D)

3.3.3 Experimental Design, Blocking, & Randomization

The DCE design adhered to established experimental best practices. A full factorial design was reduced using a D-optimal fractional design approach to generate 30 efficient and manageable choice sets (CapacityPlus Project, 2012). The number of tasks per respondent aligns with best-practice recommendations to minimize fatigue and preserve response quality (Soekhai et al., 2019).

The choice sets were then divided evenly into three blocks (A, B, and C). Blocks were randomly assigned to respondents to ensure an even distribution of choice sets across the sample. Blocking is a standard approach to reduce cognitive burden while maintaining statistical efficiency (Szinay et al., 2021). Each respondent received only one block: either A, B, or C, meaning that one individual would complete the 10 choice sets in Block A, another would receive Block B, and a third would be assigned Block C. Each block (A, B, C) contained 10 distinct, systematically numbered choice sets (e.g., A1-A10, B1-B10, and C1-C10), and the full design comprised 30 unique choice sets.

To minimize order effects and enhance data quality, the sequence of choice sets within each block was also randomized for every respondent. For instance, two respondents assigned to Block A would each receive all 10 choice sets (A1-A10), but the sequence in which they appear would differ. One might begin with A3 and end with A7, while another might start with A9 and finish with A2. This random ordering of choice sets within the blocks reduced potential biases related to task position and maintained the integrity of the responses.

Overall, the design ensured the following key principles:

- Minimum D-error (D-error = 0.201): To maximize the statistical efficiency of the design, ensuring that parameter estimates from the DCE would be as precise as possible.
- Level balance across alternatives: To ensure that each level of every attribute appeared with equal frequency, avoiding bias and allowing for unbiased estimation of preferences.

- Minimum overlap of attribute levels: To prevent repetition of the same attribute levels within a single choice set, which could reduce the cognitive challenge and lead to less meaningful trade-offs by respondents.
- Orthogonality of the design matrix: To ensure that the attributes varied independently of one another, allowing for clear estimation of the individual effect of each attribute without confounding influences.

Together, these principles enhanced the validity, reliability, and analytical power of the DCE results.

3.4 Survey Administration

The main survey was conducted between April and June 2025 using an online format with telephonic support when required. A bilingual interface (Nepali/English) and clear consent protocols were used, ensuring a simple, user-friendly survey platform.

A survey administration manual was developed to provide explanatory notes and procedures for conducting DCE and post-experiment surveys. The instruments were pre-tested, and necessary updates were made. Rigorous training was provided to the research team, and supervision and quality control measures were implemented.

Two Research Assistants and a Research Officer provided technical support, consent verification, and response-quality monitoring. The team flagged inconsistent patterns (e.g., straight-lining in responses¹, suspiciously excessive opt-out selection, and implemented verification callbacks.

3.5 Data Quality Control measures

A Research Officer was designated to serve in a supervisory role and oversee data quality control measures, ensuring adherence to protocols throughout the data collection process.

⁴“straight-lining in responses” means a respondent selects the same answer option for every question, often without carefully reading them.

- The supervisor assured the quality of data by reviewing submission patterns, completion times, and flag indicators (e.g., straight-lining of response selection, unusual opt-out selection frequency, etc.).
- Back-checks were regularly done, and 15% of respondents were re-contacted via phone for error correction and verification.
- Likewise, within the survey platform, too, built-in skip rules, and validations were accounted. For instance, respondents were required to spend at least 30 seconds on each choice set. This was done with the assumption that respondents would not choose product alternatives without reading varying attributes in each choice set.
- Similarly, issues encountered (e.g., confusion over attributes or overuse of opt-out) were discussed in regular team calls and resolved via on-the-spot coaching.

3.6 Ethical Considerations

Ethical considerations were fundamental to protecting the rights and well-being of all participants. The following measures were implemented to uphold the highest ethical standards throughout the research process:

- Informed consent was obtained from all participants, clearly explaining the study's purpose, procedures, and their rights.
- Participants were informed of their rights to withdraw at any time without any penalty or consequence.
- Confidentiality and privacy were strictly maintained by anonymizing data and securely storing all information.
- Survey questions and procedures were designed to minimize any potential harm, discomfort, or distress to participants.
- Sensitive topics were approached with care and respect to uphold participants' dignity.
- The study complied with all relevant national and institutional ethical guidelines.
- Continuous monitoring was conducted to ensure adherence to ethical standards throughout the research process.

3.7 Empirical Models and Estimation Strategy

3.7.1 Random Utility Theory (Conceptual Foundation)

The DCE is grounded in random utility theory (RUT), which assumes that the respondent i assigns a latent utility to alternative j in task t :

$$U_{ijt} = V_{ijt} + \varepsilon_{ijt}$$

Where,

- U_{ijt} : total (latent) utility
- V_{ijt} : the systematic (observable) component modeled as a function of attributes and respondent characteristics
- ε_{ijt} : random, unobserved component (error term).

The observed part of the utility is typically written as:

$$V_{ijt} = X'_{ijt} \beta_i$$

Where:

- X_{ijt} is a vector of observed explanatory variables (attributes of the alternatives and respondent characteristics).
- β_i is a vector of coefficients for respondent i , capturing their preferences for the different attributes.

Respondents choose the alternative with the highest utility in each task.

3.7.2 Conditional Logit Model

Under the conditional logit (CL) framework, the probability that the respondent chooses alternative j in task t is:

$$P_{ijt} = \frac{\exp(V_{ijt})}{\sum_{k \in C_t} \exp(V_{ikt})}$$

Where,

- C_t : choice set in task t , the set of available alternatives
- The denominator sums over all available alternatives in the choice set C_t .

The conditional logit is efficient and interpretable, but it imposes the independence of irrelevant alternatives (IIA) property, meaning the relative odds between any two alternatives do not depend on other alternatives in the choice set. This can be restrictive when alternatives are perceived as closer substitutes (e.g., loose vs. pack cigarettes).

3.7.3 Mixed Logit Model

To relax the IIA property and allow for preference heterogeneity, the mixed logit allows some coefficients to vary randomly across respondents:

$$\beta_i = \bar{\beta} + \eta_i$$

Where,

- $\bar{\beta}$ is the mean preferences in the population, and
- η_i captures individual-specific deviations from the mean preferences, which is a random draw from a specified distribution.

Thus, the utility for respondent i for alternative j in task t becomes:

$$U_{ijt} = X'_{ijt} \beta_i + \varepsilon_{ijt}$$

The choice probability is then an integral over the distribution of β_i and is typically approximated via simulation:

$$P_{ijt} = \int \frac{\exp(X'_{ijt} \beta_i)}{\sum_{k \in C_t} \exp(X'_{ikt} \beta_i)} f(\beta_i) d\beta_i$$

Where,

- $f(\beta_i)$ is the probability distribution of the random coefficients .

This model allows for more flexible substitution patterns and can better reflect heterogeneity observed in real markets, such as nicotine markets (e.g., smokers who are more resistant to switching versus those who are more responsive to policy changes).

3.7.4 Willingness-To-Pay Estimation

Willingness-to-Pay (WTP) translates non-price attribute changes into monetary terms using the marginal rate of substitution between an attribute coefficient and the price coefficient:

$$WTP = -\frac{\beta_{attribute}}{\beta_{price}}$$

For mixed logit, WTP can be reported using the mean coefficients (for average WTP) and uncertainty intervals derived either via the delta method or simulation (depending on reporting approach). Since prices are typically measured in currency units, scaling the WTP measure (e.g., per Rs. 100) can make the interpretation easier.

4. Socio-Demographic Characteristics

This chapter describes the profile of 684 adult smokers who completed the 2025 DCE survey (Male n=538, Female n=146). The accompanying Table 4 should be read alongside the text. Unless otherwise noted, percentages refer to column proportions within sex strata (Overall, Male, or Female groups).

Table 4: Socio-Demographic Profile of Respondents (Summary Statistics)¹

Characteristics	Overall (N=684)	Male (N=538)	Female (N=146)
Age	28.1 (\pm 6.7)	28.4 (\pm 6.8)	26.8 (\pm 6.3)
Marital Status			
Never Married	278 (40.6%)	222 (41.3%)	56 (38.4%)
Currently Married	212 (31.0%)	176 (32.7%)	36 (24.7%)
Separated	8 (1.2%)	5 (0.9%)	3 (2.1%)
Single	186 (27.2%)	135 (25.1%)	51 (34.9%)
Education			
Attending Secondary Level (Grade 9-12)	114 (16.7%)	93 (17.3%)	21 (14.4%)
Completed Secondary Level (Grade 12/Intermediate)	150 (21.9%)	118 (21.9%)	32 (21.9%)
Higher Education (Bachelor or above)	380 (55.6%)	297 (55.2%)	83 (56.8%)

⁵ Counts are respondent-level; small rounding may cause \pm 0.1 percentage point differences

Characteristics	Overall (N=684)	Male (N=538)	Female (N=146)
Professional/Vocational/ Technical	40 (5.8%)	30 (5.6%)	10 (6.8%)
Occupation			
Business, Self-employed	152 (22.2%)	137 (25.5%)	15 (10.3%)
Salaried and Wage Earners	260 (38.0%)	202 (37.5%)	58 (39.7%)
Students	124 (18.1%)	91 (16.9%)	33 (22.6%)
Unemployed/Not working	96 (14.0%)	69 (12.8%)	27 (18.5%)
Others	52 (7.6%)	39 (7.2%)	13 (8.9%)
Income			
No earning	123 (18.0%)	83 (15.4%)	40 (27.4%)
Up to 2 Lakhs	125 (18.3%)	94 (17.5%)	31 (21.2%)
2 to 5 Lakhs	119 (17.4%)	99 (18.4%)	20 (13.7%)
5 to 10 Lakhs	99 (14.5%)	92 (17.1%)	7 (4.8%)
10 to 20 Lakhs	39 (5.7%)	37 (6.9%)	2 (1.4%)
Above 20 Lakhs	20 (2.9%)	18 (3.3%)	2 (1.4%)
Don't Know/Can't Say	159 (23.2%)	115 (21.4%)	44 (30.1%)
Caste/Ethnic Group			
Hill Brahmin/Chhetri	296 (43.3%)	233 (43.3%)	63 (43.2%)
Hill Indigenous (Janajati)	96 (14.0%)	69 (12.8%)	27 (18.5%)
Newar	91 (13.3%)	71 (13.2%)	20 (13.7%)
Terai Brahmin/Chhetri	84 (12.3%)	71 (13.2%)	13 (8.9%)
Terai Indigenous (Janajati)	39 (5.7%)	31 (5.8%)	8 (5.5%)
Hill Dalit	19 (2.8%)	18 (3.3%)	1 (0.7%)

Characteristics	Overall (N=684)	Male (N=538)	Female (N=146)
Muslim	8 (1.2%)	7 (1.3%)	1 (0.7%)
Terai Dalit	14 (2.0%)	10 (1.9%)	4 (2.7%)
Other Terai	37 (5.4%)	28 (5.2%)	9 (6.2%)

Age

The survey consisted of all adult smokers, with the average age of respondents being 28.1 years (SD 6.7). Men were marginally older on average (28.4 years, SD 6.8) than women (26.8 years, SD 6.3).

Marital Status

Regarding marital status², about four in ten respondents reported being 'never married' (40.6%) and three in ten 'currently married' (31.0%). A further 27.2% selected 'single,' and 1.2% reported being 'separated. The male-female split broadly mirrors the overall pattern: men were slightly more likely to report being never married (41.3%) or currently married (32.7%), while women were more likely to report being single (34.9%) than men (25.1%).

Educational Status

Education levels skewed toward higher education: 55.6% reported higher education (Bachelor or above), 21.9% completed secondary (Grade 12/Intermediate), 16.7% attended secondary (Grades 9-12), and 5.8% reported professional/vocational/technical education. The male-female distributions were closely aligned (e.g., higher education: 55.2% of men; 56.8% of women).

⁶ "Never married", "Single" and "Separated" were presented as different response options, as collected in the survey instrument. Definitions are as follows:

- Currently married: Legally married and living together.
- Separated: Legally married but living apart.
- Single: Currently unmarried but previously married (includes divorced or widowed individuals).
- Never married: Never legally married at any point in time.

Occupation

The most common type of employment is salaried or wage employment, accounting for 38.0% of the sample. This was followed by self-employed individuals (22.2%), students (18.1%), and unemployed individuals (14.0%). An additional 7.6% fell into the ‘other’ category, which includes retirees, homemakers, people involved in social or political work, and those working abroad.

There are clear gender differences in employment status. Men are more likely to be self-employed or own businesses (25.5% compared to 10.3% for women). In contrast, women are more often found among students (22.6% vs. 16.9% for men) and among those who are unemployed or not working (18.5% vs. 12.8%).

Household Income

Income reporting is dispersed and characterized by non-response, with 23.2% selecting the “Don’t Know/Can’t Say” option. Among stated categories, the most common bands are “up to 2 lakhs” (18.3%), “2 to 5 lakhs” (17.4%), and “5 to 10 lakhs” (14.5%). Women more often report “No earnings” (27.4% compared to 15.4% among men) and “Don’t know/can’t say” (30.1% vs. 21.4%), consistent with observed differences in occupation and income disclosure.

Caste/Ethnic Groups

Likewise, the sample includes a diverse range of caste/ethnic groups. The largest group was Hill Brahmin/Chhetri (43.3%), followed by Hill Indigenous/Janajati (14.0%), Newar (13.3%), and Terai Brahmin/Chhetri (12.3%). Other reported groups included Terai Indigenous/Janajati (5.7%), Other Terai (5.4%), Hill Dalit (2.8%), Terai Dalit (2.0%), and Muslim (1.2%).

5. Smokers' Preferences: DCE Insights

This chapter reports descriptive findings from the DCE, summarizing respondents' choices across the 10 choice tasks. Figures describe the sample of 684 adult smokers who completed the survey (Male n=538, Female n=146).

5.1 Task Allocation, Timing Constraints, and Completion Patterns

Each respondent completed 10 choice tasks, yielding 6,840 observed choices (684 respondents x 10 choice sets). Block assignment was balanced: Block A 35.2% (n=241), Block B 31.0% (n=212), and Block C 33.8% (n=231) at the respondent level.

Based on the recorded start and end timestamps, the median time taken to complete the DCE survey was 21.6 minutes, with an interquartile range (IQR) of 15.4 to 84.7 minutes (n=684). The survey platform implemented a minimum 30-second-per-choice-set time requirement, preventing participants from progressing too quickly. In particular, some participants may have taken breaks or left the survey idle between tasks, only to return later, significantly extending their total completion time.

5.2 Choice Shares by Product Alternatives

Across all 6,840 choices, the most common choice was a cigarette pack (35.8%, n=2,449), followed by a loose cigarette (28.0%, n=1,915), a quit/opt-out (22.1%, n=1,512), and a vape/e-cigarette (14.1%, n=964). These shares reflect stated choices conditional on the attribute levels presented in each task.

Table 5: Choice Shares by Product (N=6,840)

Product Alternatives	Choices Count (n)	Percentage (%)
Loose Cigarettes	1,915	28.0
Pack Cigarettes	2,449	35.8
Vape/E-cigarettes	964	14.1
Quit/Opt-out	1,512	22.1
Total (N)	6,840	100.0

5.3 Choice Shares by Product Attributes

This section summarizes attribute-level distributions¹ among the alternatives chosen. Percentages are within-product shares and therefore describe the composition of chosen loose, pack, and vape options by their respective attribute levels². The Quit/Opt-out alternative has no attributes by design and is not shown here.

Loose Cigarette (n = 1,915)

Among the selected loose options, prices cluster around the mid (Rs. 15; 35.8%) and low (Rs. 10; 34.3%) points, with the high price (Rs. 20) accounting for 29.9% of selections. With respect to legality/enforcement, the modal condition among the chosen loose is “illegal but not enforced” (38.5%), followed by “illegal and strictly enforced” (32.8%), and “legal” (28.7%). According to the design, availability within 10 minutes and the absence of any health warning are constant for loose. Overall, chosen loose selections are slightly concentrated at the mid-price point and under non-enforced illegality, with substantial shares also occurring under strictly enforced settings.

Attribute share tables are compositions of chosen items and are influenced by both design frequencies and preferences.

⁷ These distributions reflection within-product compositions of chosen alternatives under an efficient, level-balanced design (subject to stated constraints). They are descriptive and should not be interpreted as causal effects of attributes.

⁸ Design Note: Loose and Pack alternatives were always available within 10 minutes; Loose carried no health warning by design; Pack legality was always legal; Vape legality was legal for both Loose and Pack sales.

Table 6: Distribution of Attribute Levels for Chosen Loose Cigarette Options (n = 1,915)

Attribute	Level	Count (n)	Percentage (%)
Price (per stick)	Small (Rs.10)	656	34.3
	Medium (Rs.15)	686	35.8
	High (Rs.20)	573	29.9
Legality/ Enforcement	Legal	550	28.7
	Illegal but not enforced	737	38.5
	Illegal and strictly enforced	628	32.8
Availability	Available within 10 minutes	1915	100.0
Health Warning	No health warning	1915	100.0

Note: Loose cigarettes were always available within 10 minutes and carried no health warning by design (Source: DCE Survey, 2025).

Pack Cigarette (n = 2,449)

Within the chosen packs, the mid-price (Rs. 250) is the most frequent (43.0%), followed by the low price (Rs. 150; 35.9%), whereas the high price (Rs. 350) is the least common (21.1%). Consistent with the design, pack sales are uniformly legal and available within 10 minutes. For health warnings, 100% graphical warnings appear slightly more often among chosen packs (51.9%) than 90% warnings (48.1%). In summary, chosen packs skew toward mid-price and 100% warning coverage, with near parity between the two warning sizes.

Table 7: Distribution of Attribute Levels for Chosen Pack Cigarette Options (n = 2,449)

Attribute	Level	Count (n)	Percentage (%)
Price (per pack)	Small (Rs.150)	879	35.9
	Medium (Rs.250)	1054	43.0
	High (Rs.350)	516	21.1
Legality/Enforcement	Legal	2449	100.0
Availability	Available within 10 minutes	2449	100.0
Health Warning	90% Graphical HW	1179	48.1
	100% Graphical HW	1270	51.9

Note: Availability and Legality/Enforcement had only one level. Pack cigarettes were always available within 10 minutes, and legality status was always legal by design (Source: DCE Survey, 2025).

Vape/E-cigarettes (n = 964)

Among the chosen vape alternatives, the high price (Rs. 460) has the largest share (38.6%), followed by the low price (Rs. 100; 33.7%) and the mid-price (Rs. 260; 27.7%). Legality is uniform across both pack and loose sales by design. For availability, a majority of chosen vapes fall under “may take longer” (59.0%), with “available within 10 minutes” comprising 41.0%. Regarding warnings, “textual health warning not present” is observed slightly more often (51.6%) than present (48.4%) among chosen vapes. Overall, the chosen vapes show a notable presence even at the highest price point, with slower availability and the absence of textual warnings appearing marginally more often among the selections.

Table 8: Distribution of Attribute Levels for Vape/e-cigarettes Options (n = 964)

Attribute	Level	Count (n)	Percentage (%)
Price (per 300 puffs)	Small (Rs.100)	325	33.7
	Medium (Rs.260)	267	27.7
	High (Rs.460)	372	38.6
Legality	Both pack and loose legal	964	100.0
Availability	Available within 10 minutes	569	59.0
	May take longer	395	41.0
Health Warning	Textual HW present	467	48.4
	Textual HW not present	497	51.6

5.4 Choice Shares by Socio-economic Characteristics

This section presents subgroup comparisons summarizing choices across all tasks and attribute presentations. The percentage figures in the tables below are within-subgroup shares based on the total number of choices contributed by each subgroup³ (10 tasks per respondent) and are descriptive rather than causal.

Gender (within subgroup %)

Table 9: Distribution of Product Choices by Gender

Sub-group	n Choices	Loose	Pack	Vape	Opt-out/Quit
Male	5,380	1,447 (26.9%)	2,001 (37.2%)	716 (13.3%)	1,216 (22.6%)
Female	1,460	469 (32.1%)	448 (30.7%)	245 (16.8%)	298 (20.4%)

⁹ These subgroup comparisons summarize stated choices across all tasks and attribute presentations. They provide context for subsequent analyses but should not be interpreted as preference parameters or policy elasticities.

Across all tasks, men (5,380 observed choices) most often selected cigarette packs (37.2%), followed by loose cigarettes (26.9%), opt-out/quit (22.6%), and vapes (13.3%). In contrast, women (1,460 choices) showed a different ordering: loose cigarettes were most common (32.1%), narrowly ahead of packs (30.7%), with vapes (16.8%) and opt-out/quit (20.4%) trailing. In relative terms, women were more likely than men to choose loose (+5.2 percentage points) and vapes (+3.5 pp), while men were more likely to choose packs (+6.5 pp). Opt-out rates were modestly lower among women (-2.2 pp).

Age (within subgroup %)

Table 10: Distribution of Product Choices by Age

Sub-group	n Choices	Loose	Pack	Vape	Quit
18-24	2,410	612 (25.4%)	897 (37.2%)	388 (16.1%)	513 (21.2%)
25-29	2,100	647 (30.8%)	769 (36.6%)	248 (11.8%)	436 (20.8%)
30-34	1,300	360 (27.7%)	380 (29.2%)	209 (16.1%)	351 (27.1%)
35-39	480	152 (31.7%)	186 (38.8%)	52 (10.8%)	90 (18.8%)
40-44	280	85 (30.4%)	91 (32.5%)	42 (15.0%)	62 (22.1%)
45+	270	59 (21.9%)	127 (47.0%)	25 (9.3%)	59 (21.9%)

Note: Small rounding may cause ± 0.1 percentage point differences

Choice patterns varied modestly by age band. Packs were the most frequently chosen option in every group, with the share rising in older ages, peaking at 47.0% among those over 45 years (n choices = 270) and remaining above one-third in most other bands (e.g., 37.2% at 18-24, 36.6% at 25-29, 38.8% at 35-39). Loose cigarettes were comparatively more common in the 25-29 (30.8%), 35-39 (31.7%), and 40-44 (30.4%) age bands, and least

common among the 45+ (21.9%) and 18-24 (25.4%) age bands. Vape use was relatively higher in younger and early middle age groups (16.1% at 18-24 and 30-34) and lower thereafter (10.8% at 35-39, 9.3% at 45+). Opt-out peaked at 30-34 (27.1%) and was lower among 25-29 (20.8%) and 35-39 (18.8%).

Marital Status (within subgroup %)

Table 11: Distribution of Product Choices by Marital Status

Sub-group	n Choices	Loose	Pack	Vape	Quit
Never Married	2,780	762 (27.4%)	995 (35.8%)	367 (13.2%)	656 (23.7%)
Single	1,860	543 (29.2%)	671 (36.1%)	290 (15.6%)	356 (19.0%)
Currently Married	2,120	583 (27.5%)	755 (35.6%)	297 (14.0%)	485 (23.0%)
Separated	80	28 (35.0%)	30 (37.5%)	10 (12.5%)	12 (15.0%)

Note: Small rounding may cause ± 0.1 pp differences

Across marital status, packs were the most frequently chosen option. Among those never married (n choices = 2,780), shares were Pack 35.8%, Loose 27.4%, Quit 23.7%, and Vape 13.2%. Respondents reporting single status (n = 1,860) showed a similar pattern but with a lower opt-out (19.0%) and a higher vape share (15.6%). Those currently married (n = 2,120) exhibited shares close to the overall average (Pack 35.6%, Loose 27.5%, Quit 23.0%, Vape 14.0%). The separated subgroup (n = 80) had the highest pack share (37.5%), and a comparably high loose share (35.0%), with vape at 12.5% and out-out at 15.0%. Overall, differences are modest, with single respondents somewhat more inclined toward vapes and less likely to opt out, whereas never married/currently married show slightly higher opt-out shares.

Caste/Ethnic Groups (within subgroup %)**Table 12: Distribution of Product Choices by Caste/Ethnic Groups**

Sub-group	n Choices	Loose	Pack	Vape	Quit
Hill Brahmin/ Chhetri	2,960	805 (27.2%)	1,101 (37.2%)	414 (14.0%)	640 (21.6%)
Hill Indigenous (Janajati)	960	318 (33.1%)	261 (27.2%)	125 (13.0%)	256 (26.7%)
Newar	910	219 (24.1%)	335 (36.8%)	152 (16.7%)	204 (22.4%)
Terai Brahmin/ Chhetri	840	229 (27.3%)	297 (35.4%)	109 (13.0%)	205 (24.4%)
Terai Indigenous (Janajati)	390	113 (29.0%)	133 (34.1%)	55 (14.1%)	89 (22.8%)
Hill Dalit	190	56 (29.5%)	70 (36.8%)	27 (14.2%)	37 (19.5%)
Muslim	80	12 (35.7%)	41 (51.2%)	1 (1.2%)	26 (32.5%)
Terai Dalit	140	50 (35.7%)	56 (40.0%)	25 (17.9%)	9 (6.4%)
Other Terai	370	112 (30.3%)	156 (42.2%)	56 (15.1%)	46 (12.4%)

Note: Small rounding may cause ± 0.1 pp differences

Across most caste/ethnic groups, packs were the most frequently chosen product alternative. Shares were highest among Other Terai (42.2%) and Muslim respondents (51.2%; n choices = 80), and also prominent among

Newar (36.8%), Hill Dalit (36.8%), and Terai Brahmin/Chhetri (35.4%). Two groups deviated from this pattern: Hill Indigenous (Janajati) showed a higher loose share (33.1%) than pack (27.2%), and Terai Dalit exhibited very high loose (35.7%) alongside high pack (40.0%). Vape selections were modest overall but relatively higher among Terai Dalit (17.9%) and Newar (16.7%), and exceptionally low among Muslim respondents (1.2%). Opt-out was highest for Muslim (32.5%) and Hill Indigenous (26.7%), and lowest for Terai Dalit (6.4%) and Other Terai (12.4%).

Educational Status (within subgroup %)

Table 13: Distribution of Product Choices by Educational Status

Sub-group	n Choices	Loose	Pack	Vape	Quit
Attending Secondary Level (Grade 9-12)	1,140	314 (27.5%)	423 (37.1%)	155 (13.6%)	248 (21.8%)
Completed Secondary Level (Grade 12/ Intermediate)	1,500	408 (27.2%)	536 (35.7%)	178 (11.9%)	378 (25.2%)
Higher Education (Bachelor or above)	3,800	1,098 (28.9%)	1,338 (35.2%)	555 (14.6%)	809 (21.2%)
Professional/ Vocational/ Technical	400	96 (24.0%)	151 (37.8%)	75 (18.8%)	78 (19.5%)

Note: Small rounding may cause ± 0.1 pp differences

Packs dominated in all education strata. Among those attending secondary (Grades 9 - 12), shares were Pack 37.1%, Loose 27.5%, Opt-out 21.8%, Vape 13.6% (1,140 choices). Respondents who completed secondary (Grade 12 or Intermediate) (1,500 choices) showed the highest opt-out (25.2%) and lowest vape (11.9%). Those with higher education (Bachelor+) were close to the overall pattern (Pack 35.2%, Loose 28.9%, Vape 14.6%, Opt-out 21.2%)

(3,800 choices). The professional/vocational/technical group (400 choices) stood out for the largest vape share (18.8%) and lowest loose (24.0%) while still favoring packs (37.9%).

Occupation (within subgroup %)

Table 14: Distribution of Product Choices by Occupation

Sub-group	n Choices	Loose	Pack	Vape	Quit
Business, Self-employed	1,520	395 (26.0%)	587 (38.6%)	188 (12.4%)	350 (23.0%)
Salaried and Wage Earners	2,600	728 (28.0%)	949 (36.5%)	367 (14.1%)	556 (21.3%)
Students	1,240	350 (28.2%)	391 (31.5%)	205 (16.5%)	294 (23.7%)
Unemployed / Not working	960	268 (27.9%)	357 (37.2%)	138 (14.4%)	197 (20.5%)
Others	520	173 (33.3%)	164 (31.5%)	65 (12.5%)	118 (22.7%)

Note: Small rounding may cause ± 0.1 pp differences

Patterns were broadly similar across occupations, with packs leading in most subgroups. Business/self-employed (1,520 choices) and salaried/wage earners (2,600 choices) recorded Pack 38.6% and 36.5%; Loose at 26.0% and 28.0%; Vapes at 12.4% and 14.1%; and Opt-out at 23.0% and 21.3%, respectively. Students (1,240 choices) had the lowest pack share (31.5%) and the highest Vape share (16.5%) across all other subgroups. Unemployed/not working (960 choices) resembled the overall pattern (Pack 37.2% and Vape 14.4%). The only stratum where Loose exceeded Packs was 'Others' (33.3% loose compared to 31.5% packs; 520 choices).

Household Income (within subgroup %)

Table 15: Distribution of Product Choices by Household Income

Sub-group	n Choices	Loose	Pack	Vape	Quit
No earning	1,230	348 (28.3%)	435 (35.4%)	156 (12.7%)	291 (23.6%)
Up to 2 Lakhs	1,250	338 (27.0%)	520 (41.6%)	208 (16.6%)	184 (14.8%)
2 to 5 Lakhs	1,190	332 (27.9%)	399 (33.5%)	187 (15.7%)	272 (22.9%)
5 to 10 Lakhs	990	275 (27.8%)	382 (38.6%)	109 (11.0%)	224 (22.6%)
10 to 20 Lakhs	390	89 (22.8%)	122 (31.3%)	61 (15.6%)	118 (30.3%)
Above 20 Lakhs	200	57 (28.5%)	68 (34.0%)	24 (12.0%)	51 (25.5%)
Don't know/Can't say	1,590	477 (30.0%)	522 (32.8%)	219 (13.8%)	372 (23.4%)

Note: Small rounding may cause ± 0.1 pp differences

Likewise, across household income subgroups too, patterns were broadly similar, with Packs leading in most groups. Pack shares were highest in up to 2 lakhs (41.6%; 1,250 total choices), don't know/can't say (32.8%), and 10-20 lakhs (31.3%); and stood mid-range in above 20 lakhs (34.0%). Vape shares were comparatively higher in up to 2 lakhs (16.6%), 2-5 lakhs (15.7%), and 10-20 lakhs (15.6%). Opt-out was lowest in up to 2 lakhs (14.8%) and highest in 10-20 lakhs (30.3%), with a relatively high rate in above 20 lakhs (25.5%).

Overall, a key descriptive pattern in choice shares is that pack cigarettes are the most frequently chosen alternative across nearly all socio-demographic subgroups. This dominance is consistent with the way the choice environment is structured: pack cigarettes are always legal, always

available within 10 minutes, and differ mainly in price and warning size, whereas loose cigarettes face legality/enforcement variation and vapes face availability variation (Table 3, Chapter 3). In such a setting, pack cigarettes often represent a “low friction” option: they are familiar, consistently accessible, and legally unobstructed relative to other alternatives.

Importantly, the descriptive “cross-demand” tabulations below (see section 5.6) show that pack cigarette choice share tends to rise when competing alternatives become less attractive due to enforcement or access frictions. For example, when loose cigarette sales are illegal and strictly enforced, loose choice share falls and pack share rises. Likewise, when vapes may take longer than 10 minutes to access, vape choice share drops sharply and both pack choice and opt-out rise. These patterns suggest that pack cigarettes function as the most stable substitute within the experimental choice environment when other products face higher transaction costs or constraints. Having said that, they describe how the realized distribution of choices shifts within the experimental task environment when a given attribute takes a certain level. They are not causal elasticities and do not adjust for the full multivariate attribute bundle shown in each task.

5.5 Opt-out (Quit/Do Not Choose Any)

Overall, about 22% of observed choices were Opt-outs (Quit/Do Not Choose Any)⁴. Rates were similar across sex (22.6% in men versus 20.4% in women). By age, opt-out peaked among 30-34-year-olds (27.1%) and was lowest among 35-39-year-olds (18.8%). Provincial variation was wider: Karnali had the highest (30.7%), and Sudurpaschim had the lowest (13.5%). Among respondents with completed secondary education, the opt-out rate was highest (25.2%), whereas among students in Professional/Vocational/Technical education, it was lowest (19.5%). Among occupations, shares were clustered (20-24%); students were at 23.7%, and salaried workers at 21.3%. By income, opt-out was highest among those with 10-20 lakhs (30.3%) and lowest among those with up to 2 lakhs (14.8%). By caste/ethnicity, the proportions of Hill Indigenous (26.7%) and Muslim (32.5%) were higher, whereas Terai Dalit (6.4%) and Other Terai (12.4%) were notably

¹⁰ The opt-out reflects choosing the “none/quit” alternative within the DCE tasks under the presented attribute combinations; it should not be necessarily read as a direct measure of long-term cessation.

lower.

5.6 Cross-Demand Patterns across Key Attributes

To complement the overall choice shares, we also examined how respondents' selections changed when a specific attribute level was presented (e.g., a higher loose-cigarette price, stricter enforcement of loose sales, or a longer time required to obtain vapes). These are descriptive "cross-demand" patterns computed from the DCE choice tasks: for each attribute level, the table shows the percentage of choices allocated to each alternative (loose, pack, vape, or quit/opt-out). In simple terms, these tables answer: "When this condition is shown, what do people pick more or less?"

These patterns do not represent causal estimates, but they are valuable for illustrating the direction of substitution: when one product becomes more expensive, harder to access, or more strictly regulated, respondents partially reallocate choices toward other available options.

The following tables represent descriptive cross-demand patterns across attribute levels.

Table 16: Choice Cross-Demand by Loose Cigarette Price (Column %)

	Rs. 10 per stick	Rs. 15 per stick	Rs. 20 per stick	All tasks
Loose cigarettes	656 (28.73%)	686 (27.18%)	573 (28.00%)	1915 (27.99%)
Pack cigarettes	819 (35.87%)	932 (36.93%)	755 (36.92%)	2449 (35.80%)
Vape/e-cigarettes	295 (12.92%)	341 (13.51%)	309 (15.13%)	964 (14.09%)
Quit/opt-out	514 (22.49%)	566 (22.38%)	408 (19.95%)	1512 (22.11%)

Table 16 suggests that when the loose price increases from Rs 10 to Rs 15, the share choosing loose falls slightly (28.7% to 27.2%). But when the price

increases further to Rs 20, the loose choice does not fall further (it returns to approx. 28.0%). This means the response is not perfectly step-by-step (non-monotonic) in the descriptive tabs.

On the “switching” side, higher loose prices are associated with a small increase in pack selection (about 36-37%) and a clearer increase in vape choice (12.9% to 15.1%). Quit/opt-out remains broadly similar, with a modest decline at the highest loose price (22.5% to 20.0%).

Table 17: Choice Cross-Demand by Pack Cigarette Price (Column %)

	Rs. 150 per pack	Rs. 250 per pack	Rs. 350 per pack	All tasks
Loose cigarettes	567 (24.65%)	783 (28.53%)	564 (31.99%)	1915 (27.99%)
Pack cigarettes	902 (39.21%)	963 (35.07%)	584 (32.32%)	2449 (35.80%)
Vape/ e-cigarettes	312 (13.57%)	401 (14.58%)	251 (14.19%)	964 (14.09%)
Quit/opt-out	517 (22.57%)	600 (21.82%)	395 (21.49%)	1512 (22.11%)

Table 17 shows a clear price gradient for packs. When the pack price rises from Rs. 150 to Rs. 250 and Rs 350, the share choosing packs drops steadily (39.2% to 35.1% and to 32.3%, respectively). The question arises, “Where do these choices go?” and the answer is: mostly to loose cigarettes, which rise strongly as pack price increases (24.7% to 28.5% and to 32.0%, respectively). Vape changes only slightly (approx. 13.6%-14.6%; marginal change of ~1%) and quit/opt-out remains near 21%-23%.

In the descriptive choice level statistics, higher pack prices are associated with a larger share of loose cigarette selections.

Table 18: Choice Cross-Demand by Vape/E-cigarette Price (Rs. Per 300 puffs) (Column %)

	Rs. 100	Rs. 260	Rs. 460	All tasks
Loose cigarettes	634 (27.16%)	641 (27.04%)	640 (29.86%)	1915 (27.99%)
Pack cigarettes	818 (35.06%)	848 (35.76%)	783 (36.82%)	2449 (35.80%)
Vape/e-cigarettes	357 (15.31%)	342 (14.41%)	265 (12.97%)	964 (14.09%)
Quit/opt-out	524 (22.47%)	541 (22.79%)	424 (20.36%)	1512 (22.11%)

Table 18 shows that as the vape price increases, the share of choosing vapes declines (15.3% at Rs 100, to 14.4% at Rs 260, and to 13.0% at Rs 460). At the same time, packs increase modestly (35.1% to 36.8%), and loose rises at the highest vape price. Quit/opt-out remains broadly similar but is somewhat lower at the highest vape price.

In plain terms: more expensive vapes are associated with a shift back toward combustible cigarettes (both loose and pack), and the marginal increment of loose cigarettes is relatively higher.

Table 19: Choice Cross-Demand When Loose Cigarettes Are Illegal and Strictly Enforced (Column %)

	Not strictly enforced/legal	Illegal & strictly enforced	All tasks
Loose cigarettes	1301 (29.42%)	614 (25.47%)	1915 (27.99%)
Pack cigarettes	1555 (35.16%)	894 (36.94%)	2449 (35.80%)
Vape/e-cigarettes	593 (13.42%)	371 (15.29%)	964 (14.09%)
Quit/opt-out	974 (22.00%)	538 (22.31%)	1512 (22.11%)

Table 19 indicates that when strict enforcement is implemented, the share choosing loose cigarettes declines noticeably (from 29.4% to 25.5%). Those choices shift mainly toward packs (from 35.2% to 36.9%) and vapes (from 13.4% to 15.3%), with only a small increase in quit/opt-out (from 22.0% to 22.3%).

In simple terms, under scenarios of strict enforcement, the share of loose cigarette selections declines while selections of other alternatives increase, but this does not necessarily prompt quitting.

Table 20: Choice Cross-Demand When Loose Cigarettes Are Illegal but not Enforced (Column %)

	Not in “illegal not enforced”	Illegal, not enforced	All tasks
Loose cigarettes	1095 (26.79%)	820 (30.18%)	1915 (27.99%)
Pack cigarettes	1525 (37.34%)	924 (35.21%)	2449 (35.80%)
Vape/e-cigarettes	598 (14.65%)	366 (13.71%)	964 (14.09%)
Quit/opt-out	867 (21.22%)	645 (20.90%)	1512 (22.11%)

Table 20 shows that when loose sales are illegal but not enforced, the share of choosing loose increases (from 26.8% to 30.2%). In other words, loose cigarette selections are relatively higher when enforcement is described as weak. Packs decline slightly (from 37.3% to 35.2%), while vapes and quitting change only marginally.

This aligns with the idea that when people believe the rule is not binding, they behave as if loose sales are effectively available.

Table 21: Choice Cross-Demand When Vape/E-cigarettes May Take Longer to Obtain (>10 minutes) (Column %)

	Available ≤10 minutes	May take longer	All tasks
Loose cigarettes	937 (27.51%)	978 (28.43%)	1915 (27.99%)
Pack cigarettes	1160 (34.01%)	1289 (37.38%)	2449 (35.80%)
Vape/ e-cigarettes	604 (17.70%)	360 (10.85%)	964 (14.09%)
Quit/opt-out	709 (20.79%)	803 (23.35%)	1512 (22.11%)

Similarly, Table 21 shows that when vapes are easy to get (availability within 10 minutes), the vape choice is 17.7%. When vapes may take longer, the vape choice falls sharply to 10.9%.

Where do those “lost” vape choices go? Mostly to pack cigarettes (from 34.0% to 37.4%) and partly to quit/opt-out (from 20.8% to 23.4%). Loose changes only slightly.

In plain terms, when vapes are described as taking longer to obtain, the share of cigarette selections increases.

Table 22: Choice Cross-demand by Pack Warning Size (90% vs. 100%) (Column %)

	90% graphical HW	100% graphical HW	All tasks
Loose cigarettes	952 (27.98%)	963 (28.02%)	1915 (27.99%)
Pack cigarettes	1224 (35.97%)	1225 (35.65%)	2449 (35.80%)
Vape/ e-cigarettes	481 (14.13%)	483 (14.06%)	964 (14.09%)
Quit/opt-out	747 (21.92%)	765 (22.27%)	1512 (22.11%)

The descriptive statistics are almost identical for warnings under 90% and 100%. Packs remain around approx. 36%, loose around approx. 28%, vape around approx. 14%, and quit around approx. 22%.

Within the experimental choice tasks, the difference between 90% and 100% warning coverage shows limited variation in product choice shares. (The model-based estimates in Chapter 7 are the appropriate place to test whether any small differences are statistically meaningful.)

Table 23: Choice Cross-demand by Vape Textual Warning Presence (Column %)

	Text warning absent	Text warning present	All tasks
Loose cigarettes	987 (27.90%)	928 (28.11%)	1915 (27.99%)
Pack cigarettes	1266 (35.75%)	1183 (35.86%)	2449 (35.80%)
Vape/e-cigarettes	496 (14.00%)	468 (14.19%)	964 (14.09%)
Quit/opt-out	796 (22.46%)	716 (21.82%)	1512 (22.11%)

The vape textual warning shows very small differences in descriptive shares. Vape is approx. 14% in both cases. Quit/opt-out is slightly lower when a textual warning is present (from 22.5% to 21.8%), but the overall pattern is essentially stable. In the descriptive tabs, text warnings on vapes do not strongly influence choices compared with larger levers such as availability and pack price.

Overall, the descriptive cross-demand tables suggest that respondents' stated choices are sensitive to both **economic** and **policy/regulatory** attributes. Pack price increases shift demand toward loose cigarettes; vape price increases and vape access delays shift demand toward combustibles; and strict enforcement of the illegality of loose cigarettes reduces loose selection and reallocates demand primarily to packs and vapes. While

these cross-demand patterns are descriptive (not causal), they provide an intuitive preview of the behavioral mechanisms that are later quantified using conditional logit and mixed logit models (in Chapter 7), in which preference weights and willingness-to-pay estimates formally capture these trade-offs.

To summarize in bullet points, across these descriptive “cross-demand” checks:

- As packs get more expensive, people shift mainly toward loose cigarettes (more than toward quitting).
- When vapes take longer to obtain, vape choice drops sharply, and choices shift toward packs and opting out.
- Strict enforcement of loose reduces loose use: choices shift toward packs and vapes, with only a small increase in opting out.
- Warning changes (90% and 100% GHW on packs; THW presence/absence on vapes) show limited movement in these descriptive tables.

6. Behavioral Reflections Post-DCE

This chapter presents descriptive findings from the post-experiment module administered immediately after completing the choice tasks. While the DCE captures stated preferences in experimentally controlled choice environments, the post-DCE questions provide complementary insights into respondents' self-reported priorities, experiences, perceptions, and intentions regarding smoking, quitting, and alternative harm reduction products.

Together, these measures help contextualize observed choice behavior and illuminate the cognitive and behavioral mechanisms underlying selection, substitution, and opt-out decisions. All statistics reported in this chapter are descriptive, and unless otherwise specified, are calculated at the respondent level (N=684).

6.1 Perceived Influential Attributes in Choice Decisions

After completing the DCE tasks, respondents were asked to rank the four attributes (Price, Legality/Enforcement, Availability, and Health Warning) from 1 (most important) to 4 (least important) in terms of their influence on their choice decisions.

Key findings:

- Health warning was most frequently ranked as the single most important attribute.
- Availability ranked second most often.
- Price was most often ranked third.
- Legality/enforcement was most frequently ranked as the least important attribute.

Table 24: Self-reported Attribute Rank Statistics (N=684; lower average = more important)

Attribute	Rank 1	Rank 2	Rank 3	Rank 4	Mean ^a	Median	Overall Rank
Health	242	142	117	183	2.31	2	1
Warning	(35.4%)	(20.8%)	(17.1%)	(26.8%)			
Availability	194	181	81	228	2.40	2	2
	(28.4%)	(26.5%)	(11.8%)	(33.3%)			
Price	154	187	289	54	2.49	3	3
	(22.5%)	(27.3%)	(42.3%)	(7.9%)			
Legality/ Enforcement	94	174	197	219	2.79	3	4
	(13.7%)	(25.4%)	(28.8%)	(32.0%)			

Notes: Counts are respondent-level; percentages are column shares at each rank (minor rounding \pm 0.1 percentage points); Mean is the weighted average of the four rank counts; Median is the 50th percentile from the cumulative rank counts.

Respondents most frequently rank health warnings as the most important attribute to guiding their choices. However, econometric estimates (Chapter 7) suggest that price and availability exert a stronger influence on actual trade-off decisions in the choice tasks.

This divergence suggests a well-documented phenomenon in behavioral economics: individuals often overstate the importance of socially desirable considerations (e.g., health) relative to attributes that impose immediate constraints (e.g., cost and access).

6.2 Cigarette Consumption per Day

Across all 684 respondents, the self-reported average cigarette consumption was 5.57 sticks per day (SD 4.37; median 5; IQR 2-8). Reported values ranged

^a For any attribute *a*, let: n_1, n_2, n_3, n_4 = number of respondents who gave ranks 1, 2, 3, 4 to attribute *a*, respectively

$N = n_1 + n_2 + n_3 + n_4$ = total respondents (here, $N=684$)

Average (mean) rank = A simple weighted mean of the rank numbers = $[1 \cdot n_1 + 2 \cdot n_2 + 3 \cdot n_3 + 4 \cdot n_4] / N$

Example: Health Warning counts = 242 for Rank 1, 142 for Rank 2, 145 for Rank 3, 155 for Rank 4

Average (mean) rank for Health Warning = $[1 \cdot 242 + 2 \cdot 142 + 3 \cdot 145 + 4 \cdot 155] / 684$
 $= [242 + 284 + 435 + 620] / 684 = 1581 / 684 \approx 2.31$

from 0 to 30 sticks per day. This distribution indicated moderate daily intake with substantial dispersion across individuals.

Table 25: Average Number of Cigarettes smoked per day by gender

Cigarettes per Day	Female	Male	Total
1 to 5	75 (51.4%)	253 (47.0%)	328 (48.0%)
6 to 10	43 (29.5%)	168 (31.2%)	211 (30.8%)
11 to 15	17 (11.6%)	89 (16.5%)	106 (15.5%)
16 to 20	7 (4.8%)	16 (3.0%)	23 (3.4%)
21 to 25	3 (2.1%)	9 (1.7%)	12 (1.8%)
26 to 30	1 (0.7%)	3 (0.6%)	4 (0.6%)
Total	146 (100.0%)	538 (100.0%)	684 (100.0%)

Roughly half of all respondents reported consuming less than 5 sticks per day (48.0%), with another third consuming 5 to 10 (30.8%). Men are slightly more represented in the 5 to 10 and 10 to 15 bands, while women are marginally more concentrated in the less than 5 band. Very heavy consumption (more than 15 per day) is uncommon in this sample (approximately 5.8% overall).

6.3 Exposure to Vapes/E-Cigarettes

Two-thirds (67.4%) of the total participants reported that they have ever used or tried a vape/e-cigarette⁶, while one-third (32.6%) had not. This indicates substantial experiential familiarity with vapes within the smoker sample, which provides context for the modest, yet non-negligible, vape selections observed in the DCE tasks. The following tables summarize exposure across different subgroups.⁷

¹¹ Figures reflect ever use (lifetime/any prior use), not necessarily current use.

¹² Percentages are within-subgroup shares (row %) and reflect respondents (one record per person); figures are descriptive and should not be interpreted causally.

Table 26: Exposure (used or not) to Vapes/E-cigarettes by socio-demographic characteristics

Characteristics	Overall (N=684)	Yes (N=461)	No (N=223)
Gender			
Male	538	371 (69.0%)	167 (31.0%)
Female	146	90 (61.6%)	56 (38.4%)
Age			
18 - 24 years	241	184 (76.3%)	57 (23.7%)
25 - 29 years	210	148 (70.5%)	62 (29.5%)
30 - 34 years	130	78 (60.0%)	52 (40.0%)
35 - 39 years	48	24 (50.0%)	24 (50.0%)
40 - 44 years	28	17 (60.7%)	11 (39.3%)
45 + years	27	10 (37.0%)	17 (63.0%)
Marital Status			
Never Married	278	186 (66.9%)	92 (33.1%)
Currently Married	186	148 (79.6%)	38 (20.4%)
Separated	212	120 (56.6%)	92 (43.4%)
Single	8	7 (87.5%)	1 (12.5%)
Education			
Attending Secondary Level (Grade 9-12)	114	69 (60.5%)	45 (39.5%)
Completed Secondary Level (Grade 12/Intermediate)	150	105 (70.0%)	45 (30.0%)
Higher Education (Bachelor or above)	380	259 (68.2%)	121 (31.8%)
Professional/Vocational/ Technical	40	28 (70.0%)	12 (30.0%)
Occupation			
Business, Self-employed	152	99 (65.1%)	53 (34.9%)
Salaried and Wage Earners	260	175 (67.3%)	85 (32.7%)

Characteristics	Overall (N=684)	Yes (N=461)	No (N=223)
Students	124	99 (79.8%)	25 (20.2%)
Unemployed/Not working	96	62 (64.6%)	34 (35.4%)
Others	52	26 (50.0%)	26 (50.0%)
Income			
No earning	123	80 (65.0%)	43 (35.0%)
Up to 2 Lakhs	125	84 (67.2%)	41 (32.8%)
2 to 5 Lakhs	119	78 (65.5%)	41 (34.5%)
5 to 10 Lakhs	99	70 (70.7%)	29 (29.3%)
10 to 20 Lakhs	39	32 (82.1%)	7 (17.9%)
Above 20 Lakhs	20	15 (75.0%)	5 (25.0%)
Don't Know/Can't Say	159	102 (64.2%)	57 (35.8%)
Caste/Ethnic Group			
Hill Brahmin/Chhetri	296	197 (66.6%)	99 (33.4%)
Hill Indigenous (Janajati)	96	64 (66.7%)	32 (33.3%)
Newar	91	74 (81.3%)	17 (18.7%)
Terai Brahmin/Chhetri	84	51 (60.7%)	33 (39.3%)
Terai Indigenous (Janajati)	39	22 (56.4%)	17 (43.6%)
Hill Dalit	19	16 (84.2%)	3 (15.8%)
Terai Dalit	14	8 (57.1%)	6 (42.9%)
Other Terai	37	26 (70.3%)	11 (29.7%)
Muslim	8	3 (37.5%)	5 (62.5%)

To sum up, exposure was higher among younger adults (e.g., 76.3% in the 18-24 years age group and 70.5% in the 25-29 years age group) and declined thereafter (37.0% in the 45+ age group). By province, Gandaki (76.0%) and Bagmati (73.5%) exceed Madhesh (55.9%). Students reported the highest exposure (79.8%). By income, exposure is broadly high across bands and especially elevated in 10-20 lakhs (82.1%) and above 20 lakhs (75.0%),

although with small base sizes⁸. By caste/ethnicity, Newar (81.3%) and Hill Dalit (84.2%) are high (the latter with a small n), whereas the Muslim subgroup is lower (37.5%, small n). Gender differences are modest (men 69.0%; women 61.6%).

6.4 Vape/E-cigarette Consumption Past Week⁹

Across all 684 respondents, the self-reported vape/e-cigarette use count in the past seven days averaged 6.99 uses per week (SD 19.86), with a median of 1 and an interquartile range of 0 to 5. Reported weekly use ranged from 0 to 120 times, while 45.9% reported no use.

Roughly 46% of respondents reported 0 uses in the prior week; another 46% reported 1 to 20 uses. Higher-frequency use (less than 40 times per week) is rare, i.e., 4% overall. Men are slightly more represented in the 1-20 and 21-40 bands, while women are somewhat more concentrated at 0 uses. Likewise, when cross-tabulated with the vape consumption data, among those who have reported ever using vapes/e-cigarettes at least once in their lifetime, about two-thirds reported 1 to 20 uses in the prior week (68.3%), and 1 in 5 reported 0 uses (19.7%).

Table 27: Vape/e-cigarette used in the past week, by gender (N = 684)

Vape uses (past 7 days)	Female	Male	Total
0	75 (51.4%)	239 (44.4%)	314 (45.9%)
1 to 20	60 (41.1%)	255 (47.4%)	315 (46.1%)
21 to 40	4 (2.7%)	25 (4.6%)	29 (4.2%)
41 to 60	2 (1.4%)	4 (0.7%)	6 (0.9%)
61 to 80	1 (0.7%)	0 (0.0%)	1 (0.1%)
81 to 100	1 (0.7%)	5 (0.9%)	6 (0.9%)
101 to 120	3 (2.1%)	10 (1.9%)	13 (1.9%)
Total	146 (100.0%)	538 (100.0%)	684 (100.0%)

¹³ Small-n caution for Separated (n=8), 10-20 lakhs (n=39), above 20 lakhs (n=20), Hill Dalit (n=19), and Muslim (n=8).

¹⁴ This section records the number of times vape/e-cigarette used in the last 7 days; it does not measure puffs.

As is evident, many respondents who have tried vapes/e-cigarettes report little or no recent use. This suggests that experimentation is common, but habitual adoption remains limited. This pattern aligns with the modest share of vape choice observed in the DCE and reinforces the interpretation that ENDS currently function more as occasional substitutes or trial products than as stable replacements for combustible cigarettes.

6.5 Smoking-Related Health Problems

Nearly three in ten respondents reported recent smoking-related health problems (29.4%), while just under half reported no such problems (46.1%). Notably, one quarter selected “Don’t know/can’t say” (24.6%), suggesting uncertainty in attributing symptoms to smoking or difficulties recalling recent morbidity.

Table 28: Faced smoking-related health problems recently (Overall, N=684)

Response	Frequency (n)	Percentage (%)
No	315	46.1
Yes	201	29.4
Don’t know/Can’t say	168	24.6
Total	684	100.0

Note: percentages may not sum to 100.0 due to rounding (± 0.1 pp).

Perceived health impacts likely contribute to quit intentions and to rankings of attribute salience. However, uncertainty about causality (“don’t know/can’t say”) indicates limited health literacy or attribution difficulty, reinforcing the importance of clear and credible risk communication. These self-reports help contextualize the substantial proportions of people who have attempted to quit and intend to quit. As with all self-reported morbidity, these figures should be interpreted cautiously; they are cross-sections, rely on respondent recall, and reflect perceived, not clinically verified conditions.

6.6 Relative Health Risk Perception

Perceptions of the relative harm of vapes/e-cigarettes versus combustible cigarettes were fragmented. A plurality judged the products to be “about the same” in harm (39.0%), with the remainder divided between “less harmful” (28.5%) and “more harmful” (32.5%).

Table 29: Perceived harm of vapes vs. combustible cigarettes (Overall, N=684)

Perception	Frequency (n)	Percentage (%)
About the same	267	39.0
Less harmful than cigarettes	195	28.5
More harmful than cigarettes	222	32.5
Total	684	100.0

This heterogeneity is policy relevant as it explains why vapes/e-cigarettes are rarely chosen as dominant substitutes in DCE. When a large share of smokers perceives ENDS as equally or more harmful than cigarettes, even favorable price or availability scenarios may fail to induce switching. Misperceptions therefore act as a behavioral barrier to harm reduction, independent of regulatory design. The dispersion in beliefs underscores the need for clear, evidence-based risk communication that distinguishes combustion-related toxicants from nicotine delivery per se, while maintaining protection for non-users and youth.

6.7 Received Quitting Advice

Overall, 67.8% of respondents reported receiving quitting advice in the past six months, while 32.2% did not. The share receiving advice was similar between men and women (women: 69.2%; men: 67.5%), indicating broadly comparable exposure to cessation guidance within the sample.

Table 30: Receipt of Smoking Cessation Advice in the Past Six Months

	Frequency (n)	Yes (N=464)	No (N=220)
Female	146	101 (69.2%)	45 (30.8%)
Male	538	363 (67.5%)	175 (32.5%)
Total	684	464	220

These descriptive patterns suggest that brief cessation advice or prompts (messaging whether from healthcare providers, peers, or media) are reaching a substantial proportion of current smokers in this cohort. However, we need to acknowledge that advice alone does not guarantee successful cessation, particularly in environments where cheap cigarettes, loose sales, and weak enforcement persist.

6.8 Attempts for Quitting

In the same recall window (past six months), 67.3% reported making a quit attempt, while 32.7% did not. Quit attempts were again similar by sex (women 69.2%; men 66.7%). Taken together with section 5.3, these data indicate a high level of recent quitting activity in the sample; consistent with both the elevated exposure to advice and the sizeable proportion planning to quit entirely in the next six months.

Table 31: Quit Attempts in the Past Six Months

	Frequency (n)	Yes (N=460)	No (N=224)
Female	146	101 (69.2%)	45 (30.8%)
Male	538	359 (66.7%)	179 (33.3%)
Total	684	460 (67.3%)	220 (32.7%)

The near parity between advice receipt and quit attempts suggests that advice may be prompting action. However, given continued smoking and repeated attempts, these efforts appear fragile and episodic, rather than sustained. This aligns with the DCE finding that the opt-out (quit) option, while sizable, does not dominate choices even when cigarette attributes are unfavorable.

6.9 Future Smoking Behavior

Stated intentions indicate a strong inclination toward cessation in the near term. Two in five respondents (42.7%) reported that they intend to quit altogether within the next six months, while one in six (16.7%) anticipated continuing to smoke. A sizeable fraction expressed uncertainty (34.9%), underscoring ambivalence or contingent plans. Intentions to switch to vapes/e-cigarettes (4.2%) or to use both cigarettes and vapes concurrently (1.5%) were comparatively uncommon. Taken together with the high prevalence of recent quit attempts and exposure to quitting advice (sections 5.3 & 5.4), these findings suggest substantial quit-related activity among surveyed smokers. As ever, these are self-reported intentions, not realized behaviors, and should be interpreted accordingly.

Table 32: Intended Smoking Behavior in the Next Six Months (n = 684)

Intended Behavior	Frequency (n)	Percentage (%)
Quit altogether	292	42.7
Do not know	239	34.9
Continue Smoking	114	16.7
Switch to Vape/e-cigarette	29	4.2
Use both	10	1.5
Total	684	100.0

The high stated intention to quit contrasts with continued smoking behavior and modest opt-out rates in DCE. This gap highlights intention-behavior inconsistency, a common feature of addictive behaviors. Uncertainty remains substantial, suggesting that many smokers are open to change but lack a clear or supported pathway.

6.10 Synthesis of the Post-Experiment Module

Taken together, the post-DCE findings reveal a smoker population characterized by:

- High exposure to cessation messaging
- Frequent quit attempts
- Strong stated concern for health
- Substantial uncertainty about ENDS risks
- Continued reliance on combustible products

These patterns help explain the moderate opt-out rates, price sensitivity, and limited ENDS substitution observed in the DCE. Importantly, they underscore that policy effectiveness depends not only on incentives but also on how smokers perceive, interpret, and respond to them.

7. Model-Based Estimates and Behavioral Inferences

Chapters 4 to 6 presented descriptive choice patterns from the DCE (e.g., pack cigarettes as the most frequently selected option, followed by loose cigarettes, quit/opt-out, and vapes/e-cigarettes). This chapter complements the descriptive summaries by estimating econometric choice models that quantify the strength of the association between each policy-relevant attribute (price, legality/enforcement, availability, and health warnings) and respondents' stated product choices in the experimental tasks.

To quantify smokers' underlying preferences for combustible and non-combustible products, discrete-choice data were analyzed using structural models, including the conditional logit (CL) and mixed logit (ML).

1. Conditional Logit Model (CL): estimates average attribute effects across the pooled sample using alternative-specific attributes (price, enforcement, availability, warnings).
2. Mixed Logit Model (ML): estimates attribute effects and additionally incorporates respondent-level heterogeneity through observed characteristics (sex, age, education, marital status), and, in an extended specification, household income.

Across both models, coefficients should be interpreted on a utility/log-odds scale:

- A positive coefficient increases the likelihood of choosing the relevant product alternative (relative to the base option).
- A negative coefficient decreases the likelihood of choosing that alternative.
- Statistical significance indicates whether the estimated association is distinguishable from zero in the sample.

Reference levels (base categories) used for interpretation:

- Legality/enforcement: “Legal” is the reference level for loose cigarettes
- Availability: “Available within 10 minutes” is the reference for vapes/e-cigarettes; “Not available within 10 minutes / may take longer” is compared to it.
- Pack warnings: “90% GHW” is the reference; 100% GHW is compared to it.
- Vape warnings: “Textual warning absent” is the reference; “Textual warning present” is compared to it.
- Base alternative: Quit/opt-out is the omitted reference alternative, as reflected by the alternative-specific constants (ASCs/Constant terms) reported for loose, pack, and vape.

While the CL assumes homogeneous preferences across respondents, the ML relaxes this assumption by allowing the coefficients of selected attributes to vary randomly, thereby capturing unobserved heterogeneity in choice behavior.

Both models converge to consistent behavioral patterns across the four attributes studied (price, legality/enforcement, availability, and health warnings), yet the mixed logit provides deeper insight into heterogeneity among smokers. The estimated signs, magnitudes, and significance of parameters align closely with economic theory and international evidence from comparable DCEs.

7.1 Model Summary and Key Coefficients

The table below reports the principal attribute coefficients for both models. For the mixed logit, two specifications are shown: (i) the full-sample model without income controls, and (ii) an income-controlled model estimated on a smaller subsample (reduced observations due to income data availability).

Table 33: Key Attribute Effects (Conditional Vs. Mixed Logit Estimates)

Parameter	Conditional logit β (SE)	Mixed logit β (SE)	Mixed logit + income β (SE)
ASCs (vs. Quit/Opt-out)			
• ASC: Loose	0.347*** (0.0554)		
• ASC: Pack	0.839*** (0.0662)		
• ASC: Vape/e-cigarette	0.330*** (0.102)		
Key Policy/Attribute Effects			
• Price (Rs.)	-0.00135*** (0.0002)	-0.00134*** (0.0002)	-0.00123***(0.0002)
• Loose: illegal, not enforced (vs. legal)	-0.0346 (0.0675)	-0.0350 (0.0676)	-0.0253 (0.0778)
• Loose: illegal, strictly enforced (vs. legal)	-0.223*** (0.0691)	-0.230*** (0.0694)	-0.203** (0.0799)
• Vape: may take longer (vs. ≤ 10 min)	-0.0703*** (0.0082)	-0.0700*** (0.0073)	-0.0606*** (0.0083)
• Pack: 100% GHW (vs. 90%)	-0.0652 (0.0510)	-0.0640 (0.0512)	-0.0450 (0.0584)
• Vape: textual warning present (vs. absent)	-0.0898 (0.0701)	-0.0896 (0.0708)	-0.116 (0.0807)
Observations (alternative-level rows)	27,360	27,360	21,000

Notes: Coefficients are in utility/log-odds units. Values in parentheses represent Standard Errors. The base alternative is Quit/opt-out. Significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 34: Mixed Logit Estimates: Socio-economic & demographic covariates (alternative-specific; vs. Quit)

Variables	Without controlling for income β (SE)			Controlling for income β (SE)		
	Loose	Pack	Vape	Loose	Pack	Vape
Male (=1)	-0.255*** (0.0847)	0.134 (0.0842)	-0.270*** (0.100)	-0.246** (0.105)	0.187* (0.103)	-0.188 (0.123)
Age	-0.0423 (0.0396)	-0.198*** (0.0366)	-0.125*** (0.0474)	-0.0892* (0.0493)	-0.282*** (0.0449)	-0.190*** (0.0580)
Age squared	0.00074 (0.0006)	0.00308*** (0.0006)	0.00170** (0.0007)	0.00155** (0.0007)	0.00459*** (0.0007)	0.00273*** (0.0009)
Completed secondary ¹	-0.199* (0.112)	-0.232** (0.106)	-0.307** (0.139)	-0.393*** (0.135)	-0.302** (0.125)	-0.429** (0.171)
Higher Education/ Professional Education	0.0183 (0.0995)	-0.0343 (0.0942)	0.107 (0.120)	-0.193 (0.120)	-0.137 (0.114)	0.270* (0.144)
Married ²	0.0150 (0.101)	0.0236 (0.0972)	0.289** (0.123)	-0.193 (0.120)	-0.137 (0.114)	0.270* (0.144)
Separated/ Divorced	0.277*** (0.0866)	0.220*** (0.0828)	0.335*** (0.103)	0.0615 (0.0991)	-0.0128 (0.0945)	0.229* (0.118)
Middle-income level (0.2 to 1 million) ³	-	-	-	-0.165* (0.0908)	-0.310*** (0.0858)	-0.283*** (0.109)
High income level (1 million and above)	-	-	-	-0.536*** (0.135)	-0.703*** (0.127)	-0.481*** (0.160)
Constant	1.075* (0.625)	3.714*** (0.581)	2.448*** (0.749)	1.952** (0.766)	5.064*** (0.704)	3.365*** (0.903)
Observations	27,360	27,360	27,360	21,000	21,000	21,000

Note: Reference category: 1. Attending secondary school. 2. Unmarried. 3. Low-level income (less than 0.2 million). Figures in parentheses indicate standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

7.2 Overall Model Fit

The conditional logit model shows a strong fit (Log Likelihood $\approx -2,184$; McFadden $R^2 \approx 0.28$), indicating that attribute differences meaningfully explain variation in product choice. All key attributes are statistically significant ($p < 0.05$).

The mixed logit substantially improves model fit (Log Likelihood $\approx -1,960$; McFadden $R^2 \approx 0.34$). Several coefficients exhibit significant standard deviations, confirming heterogeneity in preferences, particularly for price, legality/enforcement, and warnings. This indicates diverse valuation of regulatory attributes across smokers, likely reflecting variation in income, risk perception, and exposure to enforcement.

7.3 Conditional Logit: Average Attribute Effects

The conditional logit results quantify the average preference response to each attribute across all respondents.

Baseline preferences across product alternatives (ASCs). All three product alternatives have positive and statistically significant ASCs relative to quit/opt-out, indicating that (holding the attributes constant), respondents exhibit a baseline tendency to choose a tobacco/nicotine product rather than opt out. The ASC is the largest for pack cigarettes, consistent with the descriptive dominance of pack choices in Chapter 5.

Price is demand-inelastic. The price coefficient is negative and highly significant; however, the magnitude of the coefficient is extremely small ($\beta = -0.00135$ at 1% level of significance). The results imply that a 1% increase in price reduces quantity demanded by only 0.00135%, meaning demand is highly inelastic.

Enforcement matters when it is strict. For loose cigarettes, “illegal and strictly enforced” has a negative and significant coefficient ($\beta = -0.223$), implying that strict enforcement substantially reduces the attractiveness of loose cigarettes relative to a legal scenario. By contrast, “illegal but not enforced” is small and not statistically significant, suggesting that nominal

illegality without credible enforcement does not meaningfully deter loose-cigarette choices within the experimental settings.

Availability is one of the strongest levers. The “may take longer” availability condition (which applies to vape scenarios in the design) is large, negative, and highly significant ($\beta = -0.703$). This corresponds to an odds multiplier of $\exp(-0.703) \approx 0.50$, meaning that slower availability is associated with approximately halving the odds of selecting vapes relative to immediate availability, holding other attributes constant. In policy terms, supply friction, caused by market access constraints, distribution limitations, or enforcement uncertainty, can strongly suppress vape selection.

Incremental warning differences are not statistically decisive. The estimated effects of moving from 90% to 100% graphical health warnings on packs, and adding a textual warning on vapes, are negative but not statistically significant. This does not imply that warnings are unimportant in general; rather, it indicates that within this experimental contrast (90% vs. 100% for packs; textual presence vs. absence for vapes), the marginal effect on DCE choice is modest relative to price, availability, and strict enforcement, and is imprecisely estimated here.

Overall, relative utilities by product: Alternative-specific constants (ASCs) suggest a baseline ordering of preference as: Pack Cigarette > Loose Cigarette > Vape > Quit. However, the inclusion of price and legality attributes erode the relative utility of loose cigarettes, suggesting that even habitual smokers respond to regulatory disutility as enforcement tightens.

7.4 Mixed Logit: Observed Heterogeneity and Sub-group patterns

The mixed logit estimates retain the same core attribute structure but incorporate respondent characteristics to assess who is more likely to choose which products, relative to the quit/opt-out alternative. Key attribute effects remain highly consistent with the conditional logit (Table 33), strengthening confidence that the three main drivers (price, strict enforcement, and availability) are robust features of the preference data.

Gender Differences. Holding attributes constant, male respondents (vs. female) are:

- Less likely to select loose cigarettes and vapes relative to quit/opt-out (negative significant coefficients in the full-sample mixed logit).
- In the income-controlled specification, men show a higher relative propensity to choose pack cigarettes (positive, marginally significant), while the male-vape effect becomes statistically weaker.

These model-based patterns align directionally with the descriptive subgroup tables, where men disproportionately favored packs, while women showed relatively higher shares for loose and vapes.

Age gradients are non-linear. Age appears with both a linear and a squared term, suggesting a non-linear (curved) relationship. In both mixed logit specifications, the pack and vape age profiles are generally convex (negative linear term + positive quadratic), suggesting that preferences relative to quitting decline with age up to a point and then rise again. Using the income-controlled specification, the implied “turning points” (utility minima) occur approximately around:

- Approximately 31 years for pack cigarettes (with the loose-cigarette turning point around approx. 29 years)
- Approx. 35 years for vapes/e-cigarettes

These should be treated as descriptive model implications (not causal biological thresholds), but they are consistent with the idea that, beyond early adulthood, older smokers may be less inclined to opt out of hypothetical tasks.

Education and marital status. Among those attending secondary level (Grade 9-12), respondents who completed secondary show significantly lower utilities for choosing loose, pack, and vape over quitting, i.e., they are relatively more inclined toward the quit/opt-out alternative in these tasks.

In the income-controlled model, respondents with higher education/professional backgrounds show a positive and significant association

with selecting vapes (relative to quitting), suggesting that vape choices are relatively concentrated among the more educated segment once income differences are accounted for.

Marital status is most clearly associated with vapes, i.e., being married is linked to a higher likelihood of selecting vapes/e-cigarettes relative to quitting (significant in both mixed logit specifications).

Income gradients in the income-controlled specification. When household income is included, both middle- and high-income categories are associated with lower utilities for choosing loose, pack, and vape relative to quit/opt-out (all strongly significant, especially for high-income). Substantively, this indicates that, within the DCE tasks, respondents with higher reported income were more likely to select the quit/opt-out option than to choose a product alternative, after controlling for other included characteristics and the presented product attributes. This is a policy-relevant gradient because it suggests that quit-oriented choices may be more prevalent among economically advantaged smokers, which is consistent with broader concerns that cessation (and the ability to act on health information) can be socially patterned.

7.5 Comparative Interpretation: Marginal Utility Effects

The figure below is a compact “effect-size” comparison of the same set of key attributes estimated under two specifications:

- Conditional Logit: Black Circles
- Mixed Logit (no income controls): Blue Squares

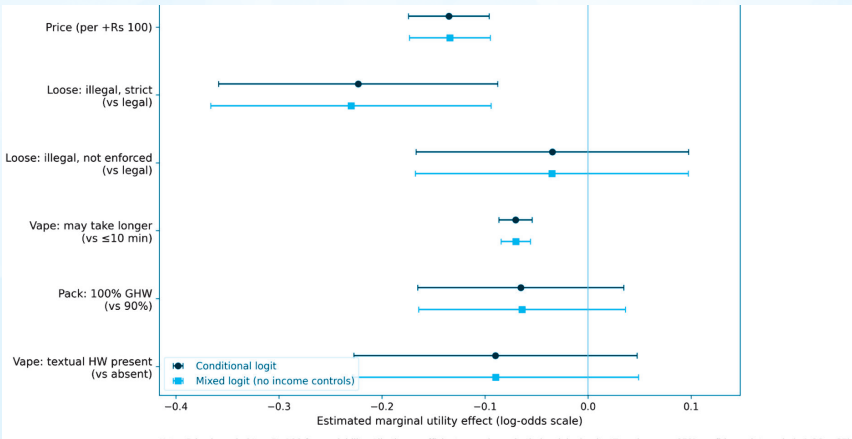
Each point is the estimated marginal utility effect (on a log-odds scale), and the horizontal bars are 95% confidence intervals ($\pm 1.96 \times SE$). The vertical line at 0 is the “no-effect” reference:

- estimates left of 0 reduce the likelihood of choosing that alternative (negative marginal utility)
- estimates right of 0, increase it, and

- If the CI crosses 0, the effect is not statistically distinguishable from zero at 5%.

Importantly, Price is scaled to “per + Rs. 100” for readability, while other attributes reflect discrete shifts between stated levels (e.g., strict enforcement vs. legal).

Figure 2: Marginal Utility Effects of Key Attributes (95% CI)



Overall, Figure 2 shows that the main behavioral conclusions remain broadly consistent across both specifications. First, higher prices tend to reduce product choice in both models (though nominally, as demand is highly inelastic and here in this diagram it is scaled up by “per + Rs. 100” for readability¹⁵). Second, strict enforcement significantly lowers the attractiveness of loose cigarettes and appears to be the largest negative attribute effect among the policy variables shown. Third, illegality without enforcement has little measurable effect, as its confidence interval crosses zero in both models. Finally, the estimated effects of expanding pack warnings (from 90% to 100% GHW), textual warnings on vapes, and delayed vape availability are all negative but of more moderate magnitude. Importantly, these conclusions are stable across both conditional and mixed logit specifications.

¹⁵ If price is shown in original units (per Rs 1), the estimated price coefficient appears very close to zero because its magnitude is much smaller than the other attribute coefficients. For ease of interpretation and visual comparability, the main figure in the report scales price to per +Rs 100

7.6 Behavioral Inferences from the Model Results

Taken together, the conditional and mixed logit results highlight several behavioral patterns that are for understanding how smokers in Nepal respond to different regulatory attributes:

- 1. Price differences are strongly associated with the product choice:** Across both model specifications, the price coefficients are negative and significant (although the value is nominal). This pattern suggests smokers may somehow respond systematically to price variation when evaluating alternatives. In the context of nicotine markets, price differences therefore appear to play a role in shaping substitution patterns among available products.
- 2. The behavioral effect of legality depends on the perceived enforcement credibility:** Loose cigarettes become significantly less attractive when illegality is paired with “strict enforcement,” whereas “illegal but not strictly enforced” produces responses that are much closer to a legal-access scenario. This contrast indicates that respondents distinguish between nominal legal status and credible enforcement conditions when making choices. This finding is consistent with broader evidence that perceived enforcement intensity can influence compliance and behavioral responses to regulatory provisions.
- 3. Access conditions substantially influence vape/e-cigarette choices:** The attribute describing delayed access (“may take longer than 10 minutes”) produces one of the largest negative effects in the model. This indicates that access frictions, such as time, effort, or retail availability, are part of the effective ‘cost’ respondents consider when evaluating alternative products. When access becomes more uncertain or time-consuming, smokers appear less likely to select vape/e-cigarette within the choice sets.
- 4. Marginal differences in graphic warning design limited effects:** In this experiment, the difference between 90% and 100% graphic health warning on cigarette packs, as well as the presence of textual health warnings on vape/e-cigarettes, does not produce strong marginal effects on product choice probabilities. This result should be interpreted alongside the post-DCE self-reported rankings, in which

many respondents ranked warnings as the most important attribute. The contrast suggests a possible difference between perceived importance and the marginal behavioral impact of the specific warning variation tested in the experiment. Two factors may contribute to this pattern: (i) warning covering 90% of the pack may already be highly salient, leaving limited additional impact from increasing to 100%, and (ii) textual warnings on vapes may be less meaningful in the absence of standardized design, credibility, or consistent market exposure.

5. Overall, both models indicate that smokers in Nepal display systematic but heterogeneous preferences when evaluating nicotine products. Price and legality/enforcement attributes show strong, consistent associations with choice probabilities, while access conditions also play a substantial role. Responses to warning attributes are more mixed, suggesting variation in how risk information is perceived and incorporated into decision making. These findings contribute empirical evidence that may inform future analyses of how combinations of pricing, regulatory conditions, and risk communication influence nicotine product choices in the Nepali context.

8. Willingness to Pay Estimates

8.1 Purpose and Interpretation

To express the estimated attribute effects in monetary terms, we compute willingness to pay (WTP)¹ using the standard coefficient-ratio method (converting the model coefficients into rupee (Rs.) amounts so the results are easier to interpret). In discrete choice models, each product attribute (e.g., “strict enforcement” or “vape takes longer to obtain”) has a coefficient that tells us whether that attribute makes a product more or less likely to be chosen. However, coefficients are in “utility/log-odds units,” which are not intuitive.

Willingness-to-pay (WTP) translates those utility changes into monetary terms. In simple words:

- If an attribute makes a product less attractive, WTP tells us how much cheaper the product would need to be to compensate for that disadvantage.
- If an attribute makes a product more attractive, WTP tells us how much more people would be willing to pay for that improvement.

Because our estimated price coefficient is negative (higher prices reduce choice), and all the attribute coefficients listed below are also negative in these models, the resulting WTP values are negative. In this context, a negative WTP should be seen as a required discount.

So, throughout this chapter, Negative WTP (e.g., -Rs 165) means a price reduction of Rs 165 would be needed to offset the negative effect of that attribute level.

Importantly, since “price” is measured in Nepali Rupees of the relevant product unit shown in the DCE (per stick for loose, per pack for packs, per 300 puffs for vapes), the resulting WTP values should be interpreted as money-metric equivalents within each product context, rather than literal

¹⁶ Price and attribute coefficients used for WTP calculations are taken from the conditional logit and mixed logit results presented earlier in the chapter 7.

amounts people would actually pay in markets, especially when the implied value exceeds the feasible price range.

8.2 WTP Results

Table 35: Willingness-to-Pay Estimates for Attribute Levels Relative to Base Level (Rs.)

Attribute level (relative to base)	Conditional logit WTP (Rs.)	Mixed logit (without income) WTP (Rs.)	Mixed logit (with income) WTP (Rs.)
Loose: Illegal and strictly enforced (vs. legal)	-165.2	-171.6	-165.0
Loose: Illegal but not enforced (vs. legal)	-25.6	-26.1	-20.6
Vape: May take longer / not available ≤ 10 min (vs. ≤ 10 min)	-52.07	-52.24	-49.27
Pack: 100% GHW (vs. 90% GHW)	-48.3	-47.8	-36.6
Vape: Textual HW present (vs. absent)	-66.5	-66.9	-94.3

Notes: WTP is computed as $(-\beta_k / \beta_{price})$ using the model-specific price coefficient. Since the price coefficient is negative, negative WTP values should be interpreted as the price discount required to compensate for a less preferred attribute.

How to read the table:

- -52.07 for vape delayed availability means: respondents would need a Rs. 52 discount (in money-metric terms) to accept vapes that take longer to obtain compared with vapes available within 10 minutes.
- -48.3 for pack 100% GHW means: the shift from 90% to 100% warning coverage slightly reduces pack choice in this equivalent to about Rs. 48 discount but note that the warning coefficient is not statistically strong in the models.

Important note on statistical confidence:

WTP values inherit the statistical strength of the underlying coefficients. In these models, price, strict enforcement, and delayed vape availability are statistically significant. The warning-related coefficients and “illegal but not enforced” are not statistically clear, so their WTP values should be treated as indicative, not definitive.

8.3 Behavioral Interpretation of WTP Magnitudes²

Strict enforcement strongly discourages loose cigarette choice. Across models, “loose sale illegal and strictly enforced” has WTP around Rs. -165 to Rs. -172. This indicates that strict enforcement acts like a major “penalty” on loose cigarettes. Put simply:

- Even if loose cigarettes were made cheaper, strict enforcement still discourages people from choosing them.
- The size of this deterrent is large compared with the per-stick price differences included in the experiment.

A rule without enforcement has little practical effect. “Loose sale illegal but not enforced” has a small WTP (about -Rs 21 to -Rs 26) and is not statistically precise. This supports a straightforward behavioral message:

- If a ban exists but is not enforced, consumers behave as if the rule does not matter much.

Vape accessibility is the biggest non-price driver. The largest WTP values in the entire table are for vape delayed availability, ranging from Rs -49.3 to Rs -52.2. This means:

- When vapes take longer to access, they become much less likely to be chosen.
- Improving access (reducing delay and transaction costs) could potentially influence choice as much as large price reductions.

¹⁷ WTP estimates are derived from the ratio of attribute coefficients to the price coefficient and should be interpreted as approximate monetary equivalents within the model framework, rather than precise measures of real-world willingness to pay.

This is particularly relevant in Nepal, where vapes are often purchased from specialty shops or online channels, which may involve searching and delivery time.

Incremental warning changes yield smaller, less robust WTP signals. The move from 90% to 100% graphical health warnings on packs corresponds to an implied discount of roughly Rs. 37 to Rs. 48, while the presence of a textual warning on vapes corresponds to roughly Rs. 67 to Rs.94. However, because these warning coefficients are not statistically significant in the models reported here, these WTP estimates should be treated as suggestive rather than definitive.

- Warnings may matter, but in these model estimates, they are not as clearly influential as enforcement and access.

Overall, WTP magnitudes are broadly consistent between conditional logit and mixed logit and remain similar when income controls are added to the mixed logit, strengthening confidence that the headline money-metric conclusions, particularly regarding price sensitivity, the importance of strict enforcement, and the large penalty from delayed vape availability, are not artifacts of a single specification.

Summary of Key Takeaways:

- Strict enforcement of loose-stick illegality has a large deterrent effect, equivalent to about a Rs. 165-172 discount.
- Illegality without enforcement shows only a small and statistically weak discount-equivalent effect.
- Vape access friction (delay) is the strongest driver: it carries a penalty equivalent to about Rs. 49.3-52.2 discount.
- Warning-related effects are smaller and not statistically robust in these specifications; treat them as suggestive.
- Overall, the strongest policy-sensitive levers in money terms are enforcement and availability, more than warning-format changes in these estimates.

9. Discussion

9.1 Overview and Key Contributions

This study provides one of the first policy-grounded discrete choice evidence bases for Nepal on how adult smokers trade off four attributes that regulators can directly influence (price, legality/enforcement, availability, and health warnings) when choosing between loose cigarettes, pack cigarettes, vape/e-cigarettes, and quitting. In contrast to much of the international DCE literature that focuses on high-income settings and formal retail structures, this experiment explicitly operationalized the informal-market realities of loose cigarettes (including “illegal but not enforced” versus “illegal and strictly enforced”) and the access frictions around ENDS availability, both of which are central to tobacco control implementation in Nepal.

Across both econometric specifications, the conditional logit and the mixed logit, with robustness checks incorporating respondent covariates and income controls, the results yield a consistent behavioral narrative: (i) price increases reduce the probability of choosing tobacco/nicotine products, (ii) enforcement only matters when it is credible and strict, (iii) availability frictions strongly suppress ENDS selection, and (iv) the incremental warning contrasts used here (e.g., 90% vs. 100% graphical warnings) show limited marginal effect on product choice among adult smokers, despite warnings being frequently reported as important in self-stated rankings (Klein et al., 2025; Marti et al., 2016).

Internationally, these findings align with a broad DCE and policy evaluation literature showing that smokers respond strongly to economic and access conditions, while responses to informational cues (warnings/messages) tend to be heterogeneous, audience-specific, and highly dependent on message framing and the counterfactual baseline (Marti et al., 2019; Hoek et al., 2022; Kenkel et al., 2020; Yan et al., 2023).

9.2 Price as a Primary Lever: And why relative prices matter

Both models show a negative, statistically significant marginal effect of price on utility (conditional logit price coefficient ≈ -0.00135 per rupee;

mixed logit ≈ -0.00134 without income controls and ≈ -0.00123 with income controls). This is a standard pattern in tobacco DCEs: own-price increases reduce the probability of selecting that product, and the effect can be substantively meaningful when price changes are large.

A crucial implication is that policy debates should focus not only on “raising taxes” in the abstract, but on how price changes reorder the attractiveness of substitutes. International evidence consistently cautions that when the price of lower-risk alternatives rises relative to cigarettes, some smokers may shift back toward combustible products rather than quit (Kenkel et al., 2020; Marti et al., 2019). In economic terms, tobacco control operates in an “intertwined market” in which taxes and price shocks often induce cross-product substitution, not only reductions in total consumption (Kenkel et al., 2020; Yan et al., 2023).

For Nepal, this is particularly salient because the market includes two combustible formats with different affordability and purchasing norms (loose sticks vs. packs), plus a growing ENDS segment. A policy that raises pack prices but leaves loose sticks cheap (or easily obtainable) can unintentionally encourage down-trading (from packs to loose) rather than cessation. Conversely, equalizing or reducing the price advantage of loose cigarettes, especially when combined with strict enforcement, can shift consumption away from the most accessible and least regulated format, though not necessarily to quit unless cessation supports are strengthened.

The willingness-to-pay estimates (presented in Chapter 8) are especially important here because they translate log-odds utilities into monetary equivalents, enabling regulators to compare the policy “strength” of, for example, a stricter enforcement regime versus a given excise increase (Train, 2009; Kenkel et al., 2020).

9.3 Legality/Enforcement: The difference between paper bans and strict enforcement

A distinctive feature of this study is the separation of “illegal but not enforced” from “illegal and strictly enforced” for loose cigarettes; an operationalization that captures the real-world difference between de jure regulation and de facto market conditions.

Empirically, the models show:

- An illegal and strictly enforced environment has a clear negative effect on utility for loose cigarettes (conditional logit ≈ -0.23 ; mixed logit ≈ -0.230 without income controls and ≈ -0.203 with income controls).
- An illegal but not strictly enforced environment is near zero and not statistically distinguishable from the legal baseline (conditional logit ≈ -0.035 ; mixed logit ≈ -0.035 without income controls and ≈ -0.025 with income controls).

This is a strong behavioral inference that nominal illegality does not meaningfully deter choice unless enforcement is perceived as real. When the penalty probability is low due to lax enforcement, consumers behave as if the market is effectively legal.

This pattern is consistent with broader regulatory syntheses in the literature, which examine how enforcement, compliance capacity, and the structure of penalties influence regulatory behavior and how weak enforcement can sustain informal markets (Yan et al., 2023). It also echoes international concerns that poorly calibrated regulations can produce unintended consequences such as illicit trade, informal substitution, or shifts toward other nicotine products rather than cessation (Kenkel et al., 2020; Yan et al., 2023).

For the policy context of Nepal, given that the reduction of loose-stick smoking is a goal (implicitly or explicitly), the evidence supports prioritizing enforcement credibility (probability of detection and meaningful penalties) over mere legal prohibition. However, enforcement alone is unlikely to increase quitting unless paired with (i) a price policy that reduces affordability and (ii) cessation support, because smokers may simply substitute toward packs, as suggested by strong baseline preferences for packs (Section 9.6).

9.4 Availability and Market Frictions: Why ENDS adoption is highly sensitive to access constraints

Among all estimated attribute effects, the availability penalty for vapes is one of the largest in magnitude. When vapes “may take longer” to obtain, rather than being available within 10 minutes, utility decreases strongly

(conditional logit ≈ -0.703 ; mixed logit ≈ -0.700 without income controls and ≈ -0.606 with income controls).

This implies that access friction is a major barrier to selecting vapes/e-cigarettes in Nepal-like contexts where supply chains are not as ubiquitous as cigarette retail. Behaviorally, “availability” is not merely convenience; it represents a bundle of transaction costs (time, search effort, uncertainty, and social visibility of purchase). In marketing and policy terms, it maps directly onto “accessibility” as a determinant of uptake (Sheth & Sisodia, 2012; Yan et al., 2023).

This result has a dual policy interpretation depending on the regulatory objective:

- If the goal is harm reduction among adult smokers, then reducing the availability friction for regulated, age-restricted ENDS (while controlling marketing and youth access) could facilitate substitution away from combustible smoking, which is consistent with DCE evidence showing that context attributes, such as public-use permission and access conditions, can shift choices.
- If the goal is minimizing ENDS diffusion, restrictions that increase access costs may reduce ENDS choice. However, the broader literature cautions that making ENDS less attractive can sometimes shift consumers back toward cigarettes over time (Kenkel et al., 2020; Yan et al., 2023). Thus, availability restrictions must be evaluated within a system, not in isolation.

9.5 Health Warning and Message Effects

In this experiment, the warning contrasts were incremental (e.g., 90% vs. 100% graphical warnings on packs; textual warning present vs. absent on vapes). In both model specifications, these warning indicators are negative but not statistically distinguishable from zero (e.g., 100% vs. 90% GHW ≈ -0.065 in conditional logit; textual warning present $\approx .090$).

There are several analytically plausible reasons for these weak marginal effects:

1. **Ceiling effects in a high-warning environment.** When baseline warnings are already very large and salient, moving from 90% to 100%

may not meaningfully change perceived risk or affective reaction among adult smokers. This is in line with the findings of Fridriksson et al. (2018), Shi et al. (2023), among others who have discussed repeated exposure to even high-arousal graphical health warnings may turn out to be ineffective among long-term smokers. In contrast, other studies comparing graphic warnings to standard text warnings often find clearer effects.

2. **Habituation and risk saturation among established smokers.** Long-term smokers may already be aware of smoking risks; additional warning space may add little new information. This is consistent with economic models where informational interventions have diminishing marginal returns when beliefs are already formed (Fridriksson et al., 2018; Kenkel et al., 2020; Shi et al., 2023; Viscusi, 1990).
3. **Message content matters more than message size.** An influential DCE study on e-liquid packaging by Hoek et al. (2022) shows that message framing can increase ENDS appeal among some smokers (reduced-risk switching messages) while decreasing appeal among non-smokers and occasional/former smokers (increased-risk or addiction messages), indicating strong audience heterogeneity.
4. **Affective mechanisms differ by design.** Evidence from an online DCE on graphic cigarette warnings finds that the effect of graphical warnings on reducing cigarette choice and increasing quitting appears to operate more through fear/disgusting reactions than improved health knowledge (Kenkel et al., 2023). If the pack warnings in Nepal already have high affective salience, expanding them from 90% to 100% may not yield a large additional affective increment.

Therefore, the correct inference is not “warnings don’t work,” rather:

- The marginal gain from expanding already-very-large warnings may be limited for adult smokers’ immediate product choice, within the choice context modeled here.
- Message design (content, credibility, relative-risk framing) likely matters more than marginal size increases, where communication must balance discouraging uptake among non-smokers while supporting switching among smokers (Hoek et al., 2022; Kenkel et al., 2020).

9.6 Baseline Preferences and the “Quit” Option: Why substitution is likely unless quitting becomes more attractive

The alternative-specific constants (ASCs) are positive for the product options relative to quitting in the conditional logit (e.g., ASC for packs \approx 0.839; loose \approx 0.347; vape \approx 0.330). In the mixed logit specification, the pack option remains the most preferred baseline alternative.

Substantively, this means that even after accounting for observed attributes, respondents have a residual preference for continuing nicotine consumption over quitting, particularly via cigarette packs. This is consistent with the addictive nature of nicotine consumption and with global evidence that many smokers are not immediately responsive to nudges unless policies materially change costs, access, or perceived benefits of quitting (Kenkel et al., 2020).

The presence of strong positive pack preference implies an important substitution risk: policies that suppress loose cigarette availability (through strict enforcement) may push smokers toward packs rather than toward quitting, unless the policy environment simultaneously increases the relative attractiveness of quitting (cessation supports, affordability constraints, and supportive messaging).

This is where the policy narrative becomes crucial: tobacco control is most effective as a package, not as a single instrument. Price, enforcement, access, and credible information must be aligned to avoid moving consumption across products without reducing overall harm (Allcott & Rafkin, 2022; Kenkel et al., 2020; Yan et al., 2023).

9.7 Heterogeneity: Who is more responsive, and why targeted policies matter

The mixed logit model identifies systematic preference heterogeneity across respondent characteristics. Notably, male respondents show lower relative preference for loose cigarettes and for vapes compared with the reference alternative structure, and age patterns suggest non-linear effects (age negative with a positive age-squared term for some alternatives).

Education and occupation indicators also show meaningful associations with ENDS choice (e.g., students showing a higher propensity toward vapes/e-cigarettes in the mixed logit).

This heterogeneity is not an anomaly; it is a defining feature of nicotine product markets. Prior DCE work in international contexts consistently finds that some smokers are “policy responsive” while others show strong attachment to combustibles and weak responsiveness to simulated regulations (Marti et al., 2029; Hoek et al., 2022). For policymakers, this means:

- A single policy instrument will not affect all smokers equally.
- Targeted interventions (for example, tailored cessation support for heavy smokers; youth/young adult protections for ENDS; focused enforcement in high-availability retail corridors) are likely to yield higher net benefits.

9.8 Reconciling “Ranked Importance” with Model-Based Behavioral Effects

A recurring finding in applied stated-preference work is that self-stated attribute importance does not always match choice-implied marginal utilities. Respondents may sincerely state that “health warnings are most important, yet their choices may be more strongly shaped by immediate economic and access conditions.

This divergence can be interpreted in three ways:

1. Social desirability and norm signaling: respondents may feel expected to prioritize health warnings, especially in interview settings, but while during the choice experiments, their choices might have been influenced relatively more by other attributes.
2. Salience versus trade-offs: warnings may be cognitively salient, but when forced to choose under time, access, and price constraints, actual decisions reveal different priorities.
3. Design-limited contrast: the warning levels in this DCE may not have been sufficiently distinct to generate large behavioral differences, even

if warnings matter in broader contexts (Hoek et al., 2022; Kenkel et al., 2023).

Recognizing this gap is not a weakness of the study; it is precisely why DCEs are used in regulation: they quantify trade-offs rather than attitudes alone (Train, 2009).

9.9 Implications for understanding regulatory trade-off

Taken together, the findings highlight several patterns relevant to interpreting how regulatory attributes may shape smokers' product choices.

First, **pricing remains a central attribute, but relative price structure across products appears important.** In the experimental choice environment, higher cigarette prices were associated with lower probabilities of selecting cigarettes. However, the results also indicate that smokers evaluate nicotine products comparatively. When the relative price of ENDS increases, substitution may shift back toward combustible cigarettes rather than toward quitting, a pattern consistent with findings from other discrete-choice studies of nicotine markets (Kenkel et al., 2020; Marti et al., 2019; Yan et al., 2023). These results reinforce the importance of analyzing nicotine products as part of an interconnected market rather than as isolated categories.

Second, **the behavioral effect of regulatory restrictions appears to depend on enforcement matters credibility.** In the experiment, the attribute distinguishing “illegal but not enforced” from “illegal and strictly enforced” produced significantly different responses for loose cigarettes. The estimated coefficients suggest that legality signals influence choices primarily when enforcement is perceived as credible. This finding aligns with broader literature emphasizing that regulatory compliance often depends on perceived enforcement intensity rather than statutory provisions alone.

Third, **availability and access conditions strongly shape the attractiveness of ENDS.** Where ENDS availability is uncertain, smokers are less likely to choose them even when they exist as a theoretical alternative. The results indicate that supply-side factors, such as access and retail

availability, may influence ENDS uptake. Previous literature also highlights the importance of considering youth protection when evaluating regulatory approaches to ENDS (Hoek et al., 2022; Yan et al., 2023).

Fourth, **the graphical warning-related effects appear sensitive to message design and audience interpretation rather than marginal changes in size alone.** In the experimental setting, the difference between 90% and 100% graphical warnings on cigarette packs produced limited changes in choice probabilities. This does not imply that warnings are unimportant; rather, it suggests that their behavioral impact may depend on message content, framing, and audience characteristics. Previous research similarly finds that warning and communication effects can vary across population groups and message types (Hoek et al., 2022; Kenkel et al., 2023). For alternative nicotine products such as ENDS, risk communication involves balancing multiple objectives, including informing adult smokers about relative risks while discouraging uptake among non-smokers and youth (Kenkel et al., 2020).

10. Comparative Insights from the 2023 and 2025 DCEs

A key contribution of the present study is its ability to examine temporal stability and evolution in smokers' preferences by directly building on the 2023 discrete-choice experiment conducted among adult smokers in Nepal. While both studies employ a stated-preference framework grounded in random utility theory, they differ in design features, attribute operationalization, mode of administration, and policy context, allowing for a richer comparative interpretation of behavioral responses to tobacco control and harm-reduction policies.

10.1 Continuities in Core Preference Structures

Across both the 2023 and 2025 DCEs, several robust patterns emerge. First, price remains a consistently negative determinant of utility for combustible cigarettes and vape/e-cigarettes alike. In both experiments, higher prices reduce the probability of selecting a product, consistent with standard economic predictions and with international DCE evidence on nicotine product demand. Importantly, in both years, price effects are smaller in magnitude than certain non-price attributes, particularly enforcement-related variables, underscoring that fiscal tools alone may be insufficient to induce meaningful behavioral change.

Second, legality and enforcement-related attributes emerge as highly salient across both studies. The 2023 DCE demonstrated that strict enforcement of smoking bans in public places generated substantial disutility among smokers, often exceeding the impact of price changes. The 2025 DCE reinforces and refines this finding by explicitly distinguishing between illegal but weakly enforced and illegal and strictly enforced regimes, particularly for loose cigarettes. This refinement more accurately reflects policy realities in Nepal and shows that smokers' choices are sensitive not merely to formal legal status but also to credible enforcement expectations. Together, the two studies provide convergent evidence that enforcement credibility is a critical behavioral lever in low- and middle-income country (LMIC) contexts.

10.2 Evolution in the Role of Health Warnings

One of the most instructive comparative insights concerns health warnings. The 2023 DCE revealed an initially counterintuitive positive utility associated with cigarette health warnings when warnings were presented textually within choice sets. Subsequent block-level analysis clarified that this effect was driven by textual representations and reversed when pictorial warnings were introduced, highlighting the importance of warning modality.

2025 DCE builds on this insight in three important ways. First, it operationalizes the distinction between 90% and 100% graphical health warnings on cigarette packs, thereby directly reflecting Nepal's evolving regulatory trajectory. Second, it explicitly models the absence of warnings on loose cigarettes, thereby capturing a critical enforcement gap not addressed in the 2023 design. Third, it extends the analysis to textual warnings on vape/e-cigarettes, a product category largely unregulated in Nepal.

Comparatively, the 2025 results show that stronger graphical warnings reduce the relative attractiveness of pack cigarettes, while the absence of warnings continues to favor loose cigarette choices, reinforcing the 2023 conclusion that pictorial warnings are only effective when smokers cannot easily avoid them. For vape/e-cigarettes, textual warnings generate mild disutility, suggesting that risk communication matters even in the absence of standardized pictorial mandates. Together, the two studies provide compelling evidence that the effectiveness of health warnings depends on both format and market structure, particularly the availability of warning-free substitutes, such as loose cigarettes.

10.3 Availability, Access, and Market Frictions

Availability was not explicitly modeled in 2023 DCE, which implicitly assumed comparable access across alternatives. The 2025 DCE introduces time-to-access as a distinct attribute, especially for vape/e-cigarettes, reflecting the more fragmented and informal nature of ENDS supply chains in Nepal. The finding that delayed availability significantly reduces vape selection, even among respondents otherwise open to alternatives, adds an important dimension to the earlier evidence.

In comparative terms, this suggests that some of the limited substitutions toward vape/e-cigarettes observed in 2023 may reflect not only preferences but also structural access constraints. The 2025 results, therefore, extend the earlier work by demonstrating that availability frictions can materially dampen the impact of harm-reduction transitions, even when price and relative risk information are favorable.

10.4 Preference Heterogeneity and Demographic Dynamics

Both studies document substantial heterogeneity in preferences, but the 2025 DCE advances this analysis by incorporating richer demographic interactions and a mixed logit framework with age polynomials and income controls. While the 2023 study identified gender differences, particularly stronger preferences for vape/e-cigarettes among women, the 2025 findings confirm and nuance this result, showing persistent gender gradients alongside non-linear age effects.

The non-linear age profiles observed in 2025, with turning points in early-to-mid adulthood, complement the 2023 evidence that younger smokers are more responsive to alternative products. Importantly, because the 2025 sample draws partly from an earlier respondent pool, these patterns suggest relative stability in underlying preference structures, rather than transient novelty effects. This longitudinal consistency strengthens confidence in the external validity of both studies' conclusions.

10.5 Methodological Advances and Policy Relevance

Methodologically, the 2025 DCE builds on the 2023 study in several critical respects. Whereas the 2023 experiment relied on field-based, face-to-face administration with physical choice cards, the 2025 study employs a custom-built online platform with structured timing controls and visual standardization, reducing enumerator effects while maintaining respondent comprehension. The reuse of a baseline respondent pool further enables examination of preference evolution within a comparable population, an uncommon but valuable feature in DCE research, particularly in LMIC settings.

From a policy perspective, the combined evidence from 2023 and 2025 paints a coherent picture: price, enforcement, health warnings, and availability interact in shaping smokers' choices, and none operates in isolation. The 2023 DCE highlighted the importance of enforcement and pictorial warnings; the 2025 DCE demonstrates how incomplete enforcement (e.g., continued loose cigarette sales) and access frictions (e.g., delayed vape availability) can undermine these tools. Together, the two studies underscore that effective tobacco harm-reduction policy in Nepal requires coordinated action across multiple regulatory dimensions, rather than incremental adjustments to any single lever.

10.6 Overall Synthesis

Taken together, the 2023 and 2025 DCEs represent a rare and valuable programmatic body of evidence on smoker preferences in a low-income country context. The 2023 study established foundational insights into price sensitivity, enforcement effects, and warning salience. The 2025 study deepens and extends these insights by incorporating more realistic policy attributes, richer heterogeneity, and evolving regulatory contexts. Comparative perspective strengthens the overall contribution of this research program, offering policymakers not only point-in-time estimates but a clearer understanding of how preferences persist, adapt, and respond to changing policy environments over time.

11. Conclusion

11.1 Summary of the Evidence Produced

This study set out to generate timely, policy-relevant evidence on how adult smokers in Nepal trade off key product attributes when choosing among four alternatives: loose combustible cigarettes, pack cigarettes, vape/e-cigarettes (ENDS), and a quit/opt-out option. The objective was to understand how four regulatory levers (price, legality/enforcement, availability, and health warning) shape stated choices in a controlled decision environment. The resulting evidence is intended to support more consumer-informed and behaviorally grounded tobacco-control and harm-reduction policy design.

The report combined three complementary layers of evidence:

- i. **Descriptive DCE choice patterns**, summarizing what respondents selected across tasks and how choice shares varied across socio-demographic subgroups.
- ii. **Post-DCE behavioral reflections**, documenting respondents' self-stated attribute priorities, exposure to vapes/e-cigarettes, quitting advice, and quit attempts, intended future smoking behavior, self-reported health problems, and perceived relative harm.
- iii. **Model-based estimates (conditional logit and mixed logit)**, quantifying how each attribute affects choice probabilities and assessing heterogeneity by respondent characteristics.
- iv. Together, these components provide a coherent picture of both (i) revealed trade-offs within the experimental tasks and (ii) stated perceptions and intentions immediately after the experiment.

The core findings and behavioral conclusions, in summary:

- i. **Price is a robust and policy-relevant determinant of choice.** Across both the conditional and mixed logit specifications, the price coefficient is negative and statistically significant, indicating that higher prices reduce the likelihood of selecting a product alternative in the DCE tasks. This finding reinforces a foundational principle of tobacco economics: fiscal policy is not merely revenue policy; it is also

behavior-shaping policy. For Nepal, where affordability and access to low-cost options remain central features of the tobacco market, the implication is clear: pricing signals meaningfully influence choices, especially when price differences are salient.

- ii. **Enforcement matters, non-forced illegality does not.** A distinctive contribution of this DCE design is its ability to separate nominal illegality from effective (strict) enforcement. The model results show that:
 - “Illegal and strictly enforced” significantly reduces the attractiveness of loose cigarettes (negative and statistically significant coefficient).
 - “Illegal but not strictly enforced” is small and not statistically distinguishable from the legal reference condition.

This is one of the most policy-actionable conclusions of the study: rules on paper do not reliably change choices unless enforcement is credible, visible, and sustained. If reducing loose-cigarette consumption is a regulatory objective, enforcement mechanisms (inspection, penalties, retailer compliance systems, and monitoring) matter equally as legal declarations.

- i. **Availability is a decisive friction for vapes/e-cigarettes and unintended substitution.** The models consistently show a large, statistically significant negative effect for vapes/e-cigarettes being “not available within 10 minutes / may take longer”, indicating that access friction strongly suppresses their selection in the DCE tasks. However, this reduction does not primarily translate into quitting within the experimental setting; instead, a substantial share of choices shifts toward combustible cigarettes.
 - ii. **This result highlights that a critical policy risk:** restricting access to alternative products may increase reliance on combustible cigarettes. In other words, policies aimed at limiting access to alternatives may produce outcomes that are the opposite of their intended public health objectives if substitution effects are not accounted for. Any policy about ENDS must account for the fact that market access conditions can profoundly shape adult smoker choices.
 - iii. **Warning contrasts limited marginal influence.** Within the specific warning contrasts tested (e.g., 90% vs. 100% graphical warnings for

packs; textual warning present vs. absent for vapes), warning-related coefficients were not statistically significant in the reported model estimates. It does not imply that warnings are unimportant in general. Rather, it suggests that:

- The incremental change from 90% to 100% may have limited additional leverage in shifting choices among smokers, and/or
- The DCE captures short-run/immediate choice-based responses among existing smokers and does not account for several important mechanisms through which warning policies operate, including youth initiation deterrence, cumulative exposure effects, salience over repeated interactions, and impacts on brand appeal and social norms.

Rather, it suggests that incremental changes in already substantial warning sizes may produce diminishing marginal effects on immediate product choice among current smokers. At the same time, the broader public health benefits of graphical warnings may remain significant, operating through mechanisms beyond those captured by the experimental design.

- i. **Preference heterogeneity is systematic.** The mixed logit models show that respondent characteristics are associated with systematic differences in choice tendencies across alternatives. Tobacco-control policies rarely have uniform effects on respondent categories. Thus, policies should pay attention to who is most responsive to which levers and to distributional consequences.

While this report does not prescribe a single policy solution, empirical patterns support several clear principles for policy design. Below is the summary of policy implications:

- i. **Align price policy with substitution realities.** Price increases can shift choices, but smokers may substitute across products. For harm reduction and cessation objectives, policy coherence depends on the relative price structure across loose cigarettes, packs, and alternative products, rather than on the absolute tax on any single category.
- ii. **Prioritize enforceability and credibility.** The evidence indicates that enforcement is a decisive factor for reducing loose-cigarette preference. A ban without enforcement is likely to have limited behavioral impact.

- iii. **Treat availability as a major implementation variable.** The strong effect of vape access friction implies that practical market conditions (legal retail channels, stable supply, and predictable access constraints) are key determinants of whether vapes/e-cigarettes appear as a plausible alternative to smokers in real-world settings.
- iv. **Use warning policy strategically, not symbolically.** If warning regimes are already extensive, incremental expansions may yield smaller marginal changes in choice, particularly among established smokers. Warning policies may be more effective when paired with complementary measures (e.g., pricing, enforcement, cessation services) and when warning content and delivery are tailored to the target audience.

Also, Chapter 8 translated model coefficients into willingness-to-pay (WTP) metrics, allowing attribute effects (e.g., strict enforcement, delayed availability) to be interpreted on a monetary scale. In the broader narrative of this book, the WTP results reinforce and quantify the central conclusion of the model-based chapter: enforcement and availability frictions can have price-equivalent effects that are large relative to realistic price ranges, underscoring that non-price policy levers can be behaviorally powerful when they are credible and salient.

11.2 Limitations

This study has several limitations that should be acknowledged when interpreting the findings and translating them into policy.

- i. **Stated-preference nature of DCE:** As a discrete choice experiment, the results reflect stated choices under hypothetical scenarios. While the design is structured to simulate realistic trade-offs, stated preferences may differ from actual purchasing behavior, particularly when social desirability or hypothetical bias is present.
- ii. **Experimental simplification of real-world context and the scope of attributes:** The experimental design necessarily simplifies complex real-world environments by focusing on four key attributes (price, legality/enforcement, availability, warnings). Other potentially influential product features (such as flavors, nicotine strength, device type, satisfaction, perceived harm, and social responsibility) were not

included in the design. Although this was done deliberately to reduce cognitive burden and focus on policy-controllable variables, it does not mean that real-world choices are not influenced by factors not captured here.

- iii. **Sample and generalizability:** The analytic sample is composed of adult smokers recruited through a defined sampling and screening procedure. The results should be interpreted as describing preference patterns within this sample, not as a fully nationally representative estimate for all smokers in Nepal.
- iv. **Scope of behavioral mechanisms and interpretation of results:** The experimental design captures short-run choice responses among current adult smokers. It does not directly measure longer-term behavioral dynamics. Thus, findings related to health warnings should be interpreted in this context: while the experiment's marginal effects appear modest, broader public health impacts may operate through mechanisms beyond immediate choice behavior. Additionally, testing 90% vs. 100% warnings may capture only the marginal effect of expanding an already high-warning baseline. Different contrasts (e.g., text-only vs. pictorial, different image content/severity, plain packaging) may yield different effects.

Likewise, while the study identifies strong substitution patterns, particularly the shift from vapes/e-cigarettes to combustible cigarettes when access becomes more difficult, these findings are derived from controlled experimental scenarios. In real-world settings, additional factors such as market availability, enforcement variability, informal supply chains, and individual constraints, among others, may modify these substitution pathways. Therefore, the results should be interpreted as behavioral tendencies under specified conditions, rather than precise predictions of market outcomes.

- i. **Model assumption and estimation constraints:** The econometric models used (conditional logit and mixed logit) rely on standard assumptions about utility maximization and error structures. While the mixed logit model relaxes key assumptions such as IIA and allows for preference heterogeneity, the estimates remain subject to a) distributional assumptions of random parameters, and b) potential omitted variable bias if relevant attributes are not included.

Additionally, WTP estimates are derived from the ratio of attribute coefficients to the price coefficient and should be interpreted as approximate monetary equivalents within the model framework, rather than precise measures of real-world willingness to pay.

- ii. **Timing and evolving policy context:** The study is conducted in a specific policy and market context (2025), during a period of regulatory transition in Nepal (e.g., movement toward 100% graphical health warnings and evolving ENDS regulation). As policies, market structures, and consumer awareness evolve, preferences and behavioral responses may change over time.

Taken together, these limitations do not diminish the value of the study but rather define the scope within which the findings should be interpreted. The results provide credible, policy-relevant behavioral evidence under controlled experimental conditions, offering important insights into how smokers respond to key regulatory levers. However, caution is warranted when extrapolating these findings directly to long-term outcomes or broader populations without accounting for contextual factors.

11.3 Areas for Future Studies

Building on the present evidence base, future work could strengthen both scientific and policy value through:

- i. **Expanded DCE attribute sets:** ENDS-specific characteristics (e.g., nicotine concentration, device form factor, perceived harm cues, and others) alongside combustible attributes to better represent the full consumer decision environment.
- ii. **Preference segmentation approaches:** Using latent class or random-parameter frameworks to identify distinct segments (e.g., highly combustible-attached vs. policy-responsive smokers) and to design targeted interventions accordingly.
- iii. **Scenario simulations and policy packages:** Simulating combined policies (e.g., price increases + strict enforcement + enhanced cessation support) to estimate net shifts across products and quitting rather than interpreting levers in isolation.

- iv. Linking stated preferences to real-world behavior: Where feasible, validate DCE predictions against observed behavior (e.g., follow-up tracking, market data, or behavioral outcomes) to improve predictive accuracy.
- v. Broader population focus: Conduct complementary research among youth and never-smokers to evaluate prevention and initiation risks, particularly important for ENDS regulation, while maintaining separate analyses for tobacco harm reduction pathways.

Overall Conclusions

Overall, this study demonstrates that adult smokers' choices in Nepal are strongly shaped by economic incentives (price), credible (strict) enforcement, and practical access conditions (availability). The evidence suggests that tobacco-control effectiveness is likely greatest when policies are designed as coherent packages that account for product substitution and prioritize implementable, enforceable mechanisms. By bringing together descriptive choice patterns, post-experiment behavioral reflections, and model-based inference, this research book, altogether, provides an applied evidence base to support a more realistic, behaviorally informed tobacco-control strategy in Nepal.

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Annex 1: Consent Form

नेपाली
 नेपाली English

Audio

Module B: Consent and Respondent Information

Consent Form

Interviewer reads to the respondent:

Namaste! My name is _____, I am here on behalf of a research organization, Prakriti Pragya Nepal. We are conducting a nationwide survey to understand smoking behaviors.





Before we proceed, please note:

1. This interview will take approximately 30 minutes.
2. I will ask you questions only if you consent to participate.
3. You may ask any questions related to this survey at any point.
4. Your information will be kept strictly confidential under the Nepal Statistical Act 2022.
5. Your data will be used only for research purposes.
6. Participation is voluntary. You may stop at any point if you feel uncomfortable or decline to answer any question.

Do you agree to participate in this survey?

Yes (Proceed to respondent information)
 No (Terminate the survey)

Annex 2: Choice Set Example

Attributes	Loose Cigarette 	Cigarette Pack 	Vape/ E-Cigarettes 	I do not choose any and I would attempt to QUIT tobacco products
Price	Rs 15 per stick.	Rs 150 per pack.	Rs 260 (for 300 puffs).	
Legality/Enforcement	Loose sale is legal.	Pack sale is legal.	Both loose and pack sales are legal.	
Availability	Available within 10 minutes of reach.	Available within 10 minutes of reach.	Available within 10 minutes of reach.	
Health warning	Health warning is not present.	100 percent graphical health warning 	Textual Health warning is present.	
Which option would you choose?	<input type="radio"/> Option A	<input type="radio"/> Option B	<input type="radio"/> Option C	<input type="radio"/> Option D

Annex 3: Questionnaire

Preference of Adult Smokers for THR Products: Discrete Choice Experiment in Nepal

START_TIME. Start of survey date and time:

DD	MM	YYYY	HH:	MM:	SS
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Module A. Screening

QN. A		Options	Skip / Logic
A01	Do you currently smoke cigarettes? तपाईं चुरोट सेवन गर्नुहुन्छ?	1. Yes 2. No 1. गर्हुं 2. गर्दिन	-If 1, go to A02 -If 2, terminate interview
A02	If yes, how often do you smoke cigarettes? यदि गर्नुहुन्छ भने, चुरोट सेवन कतिको गर्नुहुन्छ?	1. Everyday 2. Sometimes 1. दैनिक रुपमा 2. कहिलेकाही	
A03	Have you ever participated or refused to participate in a tobacco/vape related survey as a respondent in the past three months? के तपाईंले विगत तीन महिनाभित्र चुरोट वा भेपसँग सम्बन्धित कुनै अध्ययनमा सहभागी हुनु भएको वा सहभागी हुन अस्वीकार गर्नुभएको छ?	1. Yes 2. No 1. छ 2. छैन	-If 1, terminate -If 2, go to A04
A04	Do you work for any tobacco/vape related industry / market? (Selling tobacco/vape products, employed in tobacco/vape company, tobacco/vape marketing, promotion) के तपाईं सुर्तीजन्य पदार्थ वा भेपको बजार वा उद्योगसँग सम्बन्धित काम गर्नु हुन्छ? (सुर्तीजन्य पदार्थ वा भेप उत्पादनहरूको बिक्री, सुर्ती वा भेप उद्योगमा जागिरे, सुर्तीजन्य वा भेप उत्पादनको बजारीकरण वा प्रवर्धन)	1. Yes 2. No 1. गर्हुं 2. गर्दिन	-If 1, terminate -If 2, go to B01

Module B. Consent and Respondent information

QN. B		Options	Skip / Logic
B01	<p>SCREEN 1 [Displays organization information and purpose of the survey] Namaste! We [Prakriti Pragya Foundation] are a not-for-profit research organization. We are conducting a nationwide survey to understand smoking behaviors. The survey will take about 30 minutes to complete. We assure you that: A. Your information shall be treated with full confidentiality (as stipulated by the Nepal Statistical Act 2022). B. Your information will be solely utilized for the purposes of this study. C. You'll not be harmed in any way by responding to this survey. Do you agree to participate in this survey? YES [] NO []</p> <p>[Audio record followed by text]</p> <p>प्रकृति प्रज्ञा फाउन्डेशन को तर्फबाट नमस्कार ! हामीहरू चुरोट सेवनका विभिन्न पक्षमा देशब्यापी सर्वेक्षण गर्दैछौं । यो सर्वेक्षणमा चुरोट सेवन बारेमा तपाईंको धारणा तथा अनुभव बुझ्नेछौं । यो सर्वेक्षणको लागि करिब ३० मिनेट लाग्नेछ ।</p> <p>१. यो सर्वेक्षणका क्रममा लिइएका तपाइको धारणा (नेपाल तथ्यांक ऐन २०२२ बमोजिम) पूर्ण रुपमा गोप्य रहने छ ।</p> <p>२. यहाँले दिनुभएको जानकारी को उद्देश्यका लागि मात्र प्रयोग गरिने छ ।</p> <p>३. यो सर्वेक्षणमा भाग लिंदा तपाईंलाई कुनै पनि हानी हुने वा पुर्याइने छैन ।</p> <p>के तपाईं यो सर्वेक्षणमा सहभागी हुन सहमत हुनुहुन्छ ?</p> <p>- छु - छैन</p>	<p>1. Yes 2. No, refused</p> <p>1. छु 2. छैन</p>	<p>-If 1, go to B02</p> <p>-If 2, terminate interview</p>

B02	Province प्रदेश	1. Koshi 2. Madhesh 3. Bagmati 4. Gandaki 5. Lumbini 6. Karnali 7. Sudurpaschim १. कोशी २. मधेश ३. बाग्मती ४. गण्डकी ५. लुम्बिनी ६. कर्णाली ७. सुदूरपश्चिम	
B03	City शहर	Enter: [Write in words] शब्दमा लेख्नुहोस्	

Module C: Discrete Choice Experiment (DCE)

Pre-experiment information:

SCREEN 1: [Audio] *Ensure that the respondents spend some time listening to audio and reading the script simultaneously.*

In this survey, we would like you to choose between:

1. Combustible (traditional) cigarettes - loose cigarettes
2. Combustible (traditional) cigarettes - pack cigarettes
3. e-cigarette/vape. - Vapes, or e-cigarettes, are battery-powered devices. They work by heating a liquid to create an inhalable aerosol. The aerosol may contain nicotine, flavors, and other chemical substances.

Now imagine that both traditional cigarettes and e-cigarettes are available (accessibility may vary) for purchase wherever you usually buy them - your local store or online.

[Audio record followed by text]

सर्वेक्षण सम्बन्धी जानकारी

यस सर्वेक्षणमा तपाईंले तीन विकल्पमध्ये एक रोजनु पर्नेछ:

१. खिल्ली चुरोट
२. पुरै बट्टाको चुरोट
३. ई-सिगरेट वा भेप

चुरोट तथा ई-सिगरेट वा भेप तपाईंको क्षेत्रमा उपलब्ध छन् भन्ने मानी यो सर्वेक्षणमा उत्तर दिनु होला ।

SCREEN 2: [Audio] *Ensure that the respondents spend some time listening to audio and reading the script simultaneously.*

E-cigarettes/vapes come in various types. See the table below for examples. But for this survey, please consider all e-cigarettes/vapes as a single category.

[Please pause briefly to allow yourself to familiarize yourself with the different cigarette options available. This is only for familiarizing you on the






different types of products so that it will be easier for you to go through the survey, but not to influence your decision.]

SCREEN 2:

[Audio record followed by text]

तपाइलाई पहिचान गर्न सजिलो होस् भनेर यो सर्वेक्षणमा चुरोट र ई-सिगरेट वा भेपका प्रकारहरू देखाइएको छ । ई-सिगरेट वा भेप विभिन्न प्रकारका हुन्छन् । यहाँ बजारमा उपलब्ध हुने केही ई-सिगरेट वा भेपका नमूनाहरू छन् । तपाईंले यो भन्दा फरक खालको पनि देख्नु भएको हुनसक्छ । यो सर्वेक्षणको लागि सबै प्रकारका ई-सिगरेट वा भेपलाई एउटै मान्नु होला ।

यहाँ देखाइएका चित्रहरूलाई ध्यान दिएर हेर्नुहोला । ती चित्रहरूले यो सर्वेक्षणमा सोधिने प्रश्नहरूको उत्तर बुझेर दिन सहयोग गर्नेछ । तर तपाइंको रोजाइलाई प्रभावित पार्न भने होइन ।

Broad cigarette types चुरोटका प्रकारहरू	Specific types within each group बजारमा उपलब्ध नमूनाहरू
Combustible (traditional) cigarettes-loose cigarettes परम्परागत रूपमा उपलब्ध चुरोटको बट्टा	
Combustible (traditional) cigarettes-pack cigarettes परम्परागत रूपमा उपलब्ध चुरोटको बट्टा	
E-cigarette/Vape ई-सिगरेट वा भेप	
	
	

SCREEN 3: [Audio] *Ensure that the respondents spend some time listening to audio and reading the script simultaneously.*

Both traditional cigarettes and e-cigarettes have distinct features that are different from one another. We'll describe four of them. Each of the features has different variations or "levels." Please pay close attention to the features and their variations when you make your selections.

SCREEN 3:

[Audio record followed by text]

चुरोट र ई-सिगरेट वा भेपका फरक-फरक विशेषताहरू हुन्छन् । यी विशेषताहरूमध्ये चारवटालाई आधार मानेर यो सर्वेक्षण गरिएको छ । तपाईंले सर्वेक्षणमा उल्लेख गरिएका विशेषताहरू र तिनीहरूबीचको भिन्नताहरूलाई ध्यान दिनुहोला ।

[Audio record followed by text]

मूल्य: चुरोटको एक खिल्लीको मूल्य र २० खिल्लीको एक बट्टाको मूल्य उल्लेख गरिएको छ । ई-सिगरेट र भेपसँग तुलना गर्न सजिलो होस् भनी ई-सिगरेट र भेपको मूल्यलाई चुरोटको एक बट्टा बराबर बनाइएको छ । यहाँ उल्लेख गरिएको मूल्यहरू तपाईंले तिर्ने मूल्य भन्दा फरक हुनसक्छन । तपाईंले तुलना गर्नको लागि यहाँ उल्लेख गरिएका मूल्यलाई नै आधार मान्नु होला । सर्वेक्षणमा चुरोट र ई-सिगरेट वा भेपको मूल्यका तीन प्रकारका मूल्य उल्लेख गरिएको छ : महँगो, मध्यम र सस्तो ।

Price: The prices of traditional cigarettes are presented for both available loose and those in packs. In other words, the price of loose cigarettes is the price per stick while the price of cigarettes in the pack is the price you pay for one packet of cigarettes (usually available in 20 sticks per pack). For your convenience in comparing the prices between traditional cigarettes and e-cigarettes/vape, we have converted the price of e-cigarette/vape equivalent to the 20 sticks of traditional cigarettes. The cigarette prices in this survey may not match the prices you usually pay. That's okay! Please use the provided prices when evaluating the options, even if they differ from what you typically pay. In the choice set, each alternative has three price options indicating high, medium, and low ranges.

[Audio record followed by text]

२. कानूनी व्यवस्था: नेपालको कानूनले चुरोट पुरै बट्टामा मात्र बिक्री गर्न पाउने व्यवस्था गरेको छ । तर यसको कार्यान्वयन भने कमजोर देखिएको छ । बजारमा खिल्ली चुरोट सजिलै किन्न पाइन्छ । भेप वा ई-सिगरेटमा भने अहिलेसम्म त्यस्तो नियम लागू गरिएको छैन ।

सर्वेक्षणमा तपाईंले खिल्ली चुरोटको लागि तीनवटा विकल्पहरू देख्नुहुनेछ :

१. खिल्ली चुरोट किनबेच गर्न पाइन्छ
२. खिल्ली चुरोट बेच्न बन्देज गरिएको छ तर किनबेचमा कडाई गरिएको छैन
३. खिल्ली चुरोट बेच्न बन्देज गरिएको छ र किनबेचमा पनि कडाई गरिएको छ

बट्टा चुरोटको लागि एकमात्र व्यवस्था देख्नुहुनेछ : बट्टा चुरोट बेच्न कानुनीरूपमा पाइन्छ भेप/ई-सिगरेटको लागि पनि एक मात्र व्यवस्था देख्नु हुनेछ : खुल्ला र बट्टा दुवै कानुनीरूपमा बेच्न पाइन्छ ।

Legality/enforcement: The Tobacco Product (Control and Regulation) Act, 2011, of Nepal restricts the sale of single stick (loose) cigarettes. This means it is illegal to sell loose cigarettes in Nepal. In other words, selling cigarettes only in packs is legal. However, this rule is not strictly enforced. Likewise, for vape/e-cigarette, this rule is not applicable as of now suggesting that both loose and pack sales are legal. In this experiment, we also want to examine your response if loose sales of combustible cigarettes are legalized or strictly banned. Hence, you'll see three options for loose cigarettes:

- i. **Loose sale is legal**
- ii. **Illegal but not strictly enforced**
- iii. **Illegal and strictly enforced**
- iv. For pack cigarettes, the only option is: **Pack sale is legal**
For vapes/e-cigarettes: **Both loose and pack sales are legal**

[Audio record followed by text]

३. उपलब्धता: नेपालको शहरी क्षेत्रमा प्राय १० मिनेटको दूरीमा चुरोट किन्न पाइन्छ । तर भेप वा ई-सिगरेट भने १० मिनेटको दूरीमा उपलब्ध हुन वा नहुन पनि सक्छ ।

यो सर्वेक्षणमा तपाईंले चुरोटको लागि प्रत्येकमा एउटै विकल्प देख्नुहुनेछ: १० मिनेटको दूरीमा उपलब्ध छ

भेप वा ई-सिगरेटको लागि भने दुई विकल्पहरू देख्नुहुनेछ :

१. १० मिनेटको दूरीमा उपलब्ध छ
२. बजारमा उपलब्ध छ तर पाउन धेरै समय लाग्छ

Availability: Combustible cigarettes are usually accessible within 10 minutes of reach. Vape/e-cigarette may not be available within 10 minutes of reach, whether making purchases in shops/stores or buying online. While calculating the time, you are required to consider the one-way time taken using your usual mode of transportation to buy the product. For example, if you go walking most often to buy cigarettes, you should consider the time it takes to walk from your usual place of residence to the nearest store. For online purchases, you can consider the total time taken after the order for the product to be delivered to your usual place of residence.

Hence, you will see one option each for the combustible cigarettes (both loose and pack cigarettes): **available within 10 minutes of reach**

Two options for vape/e-cigarettes:

- a. **available within 10 minutes of reach**
- b. **available but more than 10 minutes of reach**

[Audio record followed by text]

४. **स्वास्थ्य चेतावनी:** हाल नेपालमा चुरोटको बढ्दामा ९०% सम्म ढाक्ने गरी चित्रमा स्वास्थ्य चेतावनी राख्नु पर्ने व्यवस्था छ। सरकारले २०८२ सालको भदौदेखि पूरै बढ्दामा वा शतप्रतिशत नै (१००%) त्यस्तो चित्र राख्नु पर्ने व्यवस्था लागू गर्ने भनेको छ। तर खिल्ली चुरोट र भेप वा ई-सिगरेटको लागि हालसम्म त्यस्तो कुनै व्यवस्था गरिएको छैन। यस सम्बन्धमा तपाइले यो सर्वेक्षणमा निम्न विकल्पहरू देख्नुहुनेछ।

- खिल्ली चुरोटमा एकमात्र विकल्प देख्नुहुनेछ: स्वास्थ्य चेतावनी छैन।
- बढ्दा चुरोटमा भने दुई विकल्पहरू देख्नुहुनेछ:

१. बट्टामा ९०% स्वास्थ्य चेतावनीको चित्र छ
 २. पुरै बट्टामा (१००%) स्वास्थ्य चेतावनीको चित्र छ
- भेष वा ई-सिगरेटमा पनि दुई विकल्पहरू देख्नुहुनेछ:
१. लिखित स्वास्थ्य चेतावनी छ
 २. लिखित स्वास्थ्य चेतावनी छैन

Health Warning: Currently, the government regulation requires 90 percent of the total packet area of combustible cigarettes to be covered with a pictorial health warning. From August 2025, the government is planning to increase this to 100 percent which means the pictorial health warning will cover 100 percent of its total package area (100% on the front, back, and side of packaging). Currently, no such regulations apply to vape/e-cigarette. While some vape/e-cigarettes have textual health warnings, many do not.

Hence, you will see one option for 'loose' combustible cigarettes: **Health warning is not present**,

Two options for 'pack' combustible cigarettes: **100 percent graphical health warning, and 90 percent graphical health warning**, and

Two options for e-cigarette/vape: **Textual warning present, and Textual warning is not present**.

SCREEN 4: *Ensure that the respondents spend some time listening to audio and reading the script simultaneously.*

Please take a moment to review the features and their different levels in the table. It will be important for the choices you'll make.

Nepali translation

SCREEN 4: [Audio record followed by text]

यहाँ यो सर्वेक्षणमा प्रयोग गरिएका चुरोटका विभिन्न विकल्प र विशेषताहरू देखाइएको छ । कृपया केहि समय लगाएर यसलाई अध्ययन गर्नुहोस् । यसको आधारमा नै यो सर्वेक्षण गरिएको हुनाले तपाईंलाई उत्तर दिन सजिलो हुनेछ ।

Attributes विशेषताहरू	Loose Cigarette खिल्ली चुरोट	Cigarette Pack चुरोटको बट्टा	Vape/e-cigarette भेप / ई-सिगरेट	I do not choose any and I would attempt to QUIT tobacco products कुनै पनि छान्दिन र चुरोट छोड्ने छु।
Price मूल्य	<ul style="list-style-type: none"> Rs. 20 per stick (एक खिल्लीको २० रुपैया) Rs 15 per stick (एक खिल्लीको १५ रुपैया) Rs 10 per stick (एक खिल्लीको १० रुपैया) 	<ul style="list-style-type: none"> Rs 350 per pack (एक बट्टाको ३५० रुपैया) Rs 250 per pack (एक बट्टाको २५० रुपैया) Rs. 150 per pack (एक बट्टाको १५० रुपैया) 	<ul style="list-style-type: none"> Rs 460 (for 300 puffs) (३०० पफको ४६० रुपैया) Rs 260 (for 300 puffs) (३०० पफको २६० रुपैया) Rs 100 (for 300 puffs) (३०० पफको १०० रुपैया) 	
Legality/ Enforcement कानूनी व्यवस्था	<ul style="list-style-type: none"> Loose sale is legal (खिल्ली चुरोट किनबेच गर्न पाइन्छ) Loose sale is illegal but not strictly enforced (खिल्ली चुरोट किनबेच बन्दैजमा कडाई गरिएको छैन) Loose sale is illegal and strictly enforced (खिल्ली चुरोट किनबेच बन्दैजमा कडाई गरिएको छ) 	<ul style="list-style-type: none"> Pack sale is legal (बट्टा चुरोट किनबेच गर्न पाइन्छ) 	<ul style="list-style-type: none"> Both loose and pack sales are legal (भेप वा ई-सिगरेट खुल्ला वा बट्टामा दुवैमा किनबेच गर्न पाइन्छ) 	
Availability उपलब्धता	<ul style="list-style-type: none"> Available within 10 minutes of reach (१० मिनेटको दूरीमा पाइन्छ) 	<ul style="list-style-type: none"> Available within 10 minutes of reach (१० मिनेटको दूरीमा पाइन्छ) 	<ul style="list-style-type: none"> Available within 10 minutes of reach (१० मिनेटको दूरीमा पाइन्छ) Available but may take longer time (बजारमा उपलब्ध छ तर पहन धेरै समय लाग्छ) 	
Health warning स्वास्थ्य चेतावनी	<ul style="list-style-type: none"> A health warning is not present (स्वास्थ्य चेतावनी छैन) 	<ul style="list-style-type: none"> 90 percent graphical health warning (बट्टामा ९०% स्वास्थ्य चेतावनीको चित्र छ) 	<ul style="list-style-type: none"> Textual Health warning is present (लिखित स्वास्थ्य चेतावनी छ) A Textual Health warning is absent (लिखित स्वास्थ्य चेतावनी छैन) 	
Which option would you choose? तपाईं कुन विकल्प रोज्नुहुन्छ?	Option A	Option B	Option C	Option D

SCREEN 5:

[Audio record followed by text]

अधि देखाइएको तालिकाबाट खिल्ली चुरोट, बट्टा चुरोट र भेष वा ई-सिगरेटका विभिन्न विशेषताहरू मिलाएर १० वटा फरक फरक सेट देखाउने छौं । हरेक सेटमा उल्लेख गरिएका जानकारीहरूको आधारमा तपाइको रोजाईको एक बिकल्प (खिल्ली चुरोट वा बट्टा चुरोट वा ई-सिगरेट वा कुनै पनि छान्दिने र चुरोट छोड्ने प्रयास गर्छु) छान्नु पर्नेछ । बिकल्प छान्दा निम्न कुराहरूमा ध्यान दिनुहोला :

- प्रत्येक सेटमा खिल्ली चुरोट, बट्टा चुरोट र भेष वा ई-सिगरेटका विभिन्न विशेषताहरूलाई मिलाएर देखाइने छ । हरेक सेटमा केही नयाँ जानकारी हुनेछ, त्यसलाई ध्यान दिनु होला ।
- प्रत्येक सेटमा देखाइएको विशेषताहरूको आधारमा खिल्ली चुरोट, बट्टा चुरोट र भेष वा ई-सिगरेटमध्ये एक बिकल्प छान्न सक्नु हुनेछ । कुनै बिकल्प मन नपरे 'कुनै पनि छान्दिने र चुरोट छोड्ने प्रयास गर्छु' छान्न सक्नु हुनेछ । सबै सेटमा एउटै बिकल्प रोज्नुपर्ने बाध्यता भने छैन ।
- नयाँ सेटमा बिकल्प छान्दा अधिल्लो सेटमा छानेको बिकल्पलाई आधार नमान्नु होला । तपाइको निर्णयलाई देखाइएको सेटको सूचनामा मात्र आधारित गर्नुहोला ।
- तपाइको सहजताको लागि एउटा उदाहरण देखाउने छौं, ध्यान दिएर हेर्नुहोला ।

Now, you have to choose one from the following four options .

- Loose cigarette
- packed cigarette
- e-cigarette
- quit/do not choose any

You'll have to indicate your choice in each 10 different sets of combinations.

- You'll have 10 selections to make in total.
- Take at least a minute for each set.

Please note:


- In each set, the traditional (available in loose and in packs) and e-cigarette options will present different combinations of these characteristic levels.
- You are free to choose either type of cigarette (traditional loose cigarettes or traditional pack cigarettes or e-cigarette or quit/do not choose) in each question; you are not obliged to stick with the same option throughout the survey
- In each question, select the option you prefer based on the specific combination of characteristics presented, regardless of what you chose in previous questions. Your choice should reflect your preference for that particular combination.
- Please check the next screen for an example question or choice set.

SCREEN 6:**[Audio record followed by text]**

यहाँ एउटा उदाहरण देखाइएको छ । यसमा उल्लेख गरिएको सूचनाको आधारमा खिल्ली चुरोट, बट्टा चुरोट र भेप वा ई-सिगरेटमध्ये एक विकल्प छान्नु पर्नेछ । यी तीन विकल्पमध्ये कुनैपनि नछान्ने हो भने “कुनै पनि छान्दिनँ र चुरोट छोड्ने प्रयास गर्नेछु” लाई छान्न सक्नुहुन्छ ।

यो उदाहरणमा दिईएको सूचनाको आधारमा तेस्रो विकल्प (ई-सिगरेट वा भेप) छानिएको छ । अर्को सेटमा उही व्यक्तिले अर्को विकल्प छान्न सक्दछ किनभने दिईएका सूचनाहरू प्रत्येक सेटमा फरक हुनेछ ।

कृपया केही समय लगाएर यो उदाहरण हेर्नुहोला ।

Attributes	Loose Cigarette	Cigarette Pack	Vape/e-cigarette	I do not choose any and I would attempt to QUIT tobacco products कुनै पनि छान्दैन र चुपेट छोड्ने छु ।
Price मूल्य	Rs 10 per stick (एक छिल्लीको १० सँपण) 	Rs 250 per pack (एक बट्टाको २५० सँपण) 	Rs 460 (for 300 puffs) (३०० पफको ४६० सँपण) 	
Legality/Enforcement कानूनी व्यवस्था	Loose sale is illegal and strictly enforced छिल्ली चुपेट किनबेच बन्दैजमा कडाई गरिएको छ	Pack sale is legal बट्टा चुपेट किनबेच गर्न पाइन्छ	Both loose and pack sales are legal भेप वा ई-सिगरेट खुल्ला वा बट्टामा दुवैमा किनबेच गर्न पाइन्छ	
Availability उपलब्धता	Available within 10 minutes of reach १० मिनेटको दूरीमा पाइन्छ	Available within 10 minutes of reach १० मिनेटको दूरीमा पाइन्छ	Available within 10 minutes of reach १० मिनेटको दूरीमा पाइन्छ	
Health warning स्वास्थ्य चेतावनी	A health warning is not present स्वास्थ्य चेतावनी छैन	 <p>100 percent graphical health warning १००% स्वास्थ्य चेतावनीको चित्र छ</p>	A Textual Health warning is absent लेखित स्वास्थ्य चेतावनी छ	
Which option would you choose? तपाईं कुन विकल्प रोज्नुहुन्छ?	Option(A)	Option(B)	Option C ●	Option(D)

SCREEN 7:

[Audio record followed by text]

अब तपाईंलाई १० वटा सेटहरू क्रमैसँग देखाइने छ । बिकल्प रोज्दा निम्न कुरामा ध्यान दिन अनुरोध छ :

- प्रत्येक सेटमा उपलब्ध सूचनाहरूमा केही भिन्नता हुनेछ ।
- बिकल्प रोज्नु अघि सेटमा उल्लेख गरिएको सूचनालाई राम्रोसँग विचार गरेर विकल्पहरू रोज्नुहोला ।
- नयाँ सेटमा बिकल्प रोज्दा पहिलाको सेटलाई आधार नमान्नु होला ।
- कुनै पनि रोजाई सही वा गलत हुदैन ।
- कसैको सहयोग नलिई उत्तर दिनुहुन अनुरोध छ ।

[Insert choice sets in 3 different blocks here]

Instructions to survey design company: *[Altogether, we will have 30 choice sets, which will be randomly divided into three blocks (Blocks A, B, and C) of 10 choice sets each. The survey company should ensure that each respondent is assigned randomly to one of these blocks. It should, however, be ensured that the total number of respondents should be assigned to three blocks in equal proportion. For example, if 600 respondents choose to respond, then each block should have 200 respondents. Please note that, in the data file, we should know the block number or code each respondent was assigned to.*

Respondents should have the option to save the incomplete survey but they should not be able to edit the part they have completed.

Module D: Post-Experiment Questions

QN.D		Options	Skip
D01	<p>Thinking back to the choices you made before, what attribute did you consider the most important while making the choices?</p> <p>तपाईंले बिभिन्न सेटहरूमा बिकल्पहरू छनौट गर्दा के लाई बढी ध्यान दिनुभयो ? प्राथमिकताको आधारमा तिनीहरूलाई क्रमबद्ध गर्नुहोस् ।</p>	<p>1. Price 2. Legality/Enforcement 3. Availability 4. Health Warning</p> <p>१. मूल्य २. कानूनको कार्यान्वयन ३. उपलब्धता ४. स्वास्थ्य चेतवनी</p>	<p>[Rank from 1 to 4: 1: Highest priority; 4: Lowest Priority]</p> <p>१ देखि ४ सम्मको रैंक: १: सबैभन्दा उच्च प्राथमिकता; ४: सबैभन्दा कम प्राथमिकता</p>
D02	<p>Suppose you won a prize of NRs 1000 and were given two options for collecting your money - a) to collect now or b) wait for a month to get Rs 1000 plus interest at the prevailing rate. Would you want to receive the money now or wait for a month to receive higher amount?</p> <p>मानौं तपाईंले रु १००० पुरस्कार जित्नुभयो । तपाईंलाई उक्त पुरस्कार र कम अहिले नै लिने वा ब्याजसहित एक महिना पछि लिने बिकल्प दिइएको छ । तपाईं कुन बिकल्प रोज्नु हुन्छ?</p>	<p>1. Now 2. A month later</p> <p>१. अहिले नै लिने २. एक महिना पछि ब्याज सहित लिने</p>	<p>-If D02 =2, go to D02_1</p>
D02_1	<p>If you will wait for a month, what's the least amount of money in total that would make you wait for a month instead of getting NRs 1000 now?</p> <p>यदि तपाईंले एक महिनापछि उक्त पैसा लिने हो भने रु १००० को सट्टा कति अपेक्षा गर्नुहुन्छ?</p>	<p>Enter:</p> <p>[Write in words also]</p> <p>संख्या र शब्द दुवैमा लेख्नुहोस्</p>	

D03	<p>Suppose you won a prize of NRs 1000 and were given two options for collecting your money - a) to collect now or b) wait for two months to get Rs 1000 plus interest at the prevailing rate. Would you want to receive the money now or wait for two months to receive higher amount?</p> <p>त्यसैगरी तपाइले प्राप्त गरेको रु १००० अहिले नै लिनुहुन्छ वा ब्याजसहित बढी पैसा लिन दुई महिना पर्खनुहुन्छ?</p>	<ul style="list-style-type: none"> ● Now ● Two months later <p>१. अहिले नै लिन्छु २. दुई महिना पछि लिन्छु</p>	-If D03 =2, go to D03_1
D03_1	<p>If you will wait for two months, what's the least amount of money in total that would make you wait for two months instead of getting NRs 1000 now?</p> <p>दुई महिना पछि उक्त पैसा लिने हो भने रु १००० को साटो कति अपेक्षा गर्नुहुन्छ?</p>	<p>Enter:</p> <p>[Write in words also]</p> <p>संख्या र शब्द दुवैमा लेख्नुहोस्</p>	
D04	<p>On a day you smoke, how many cigarettes do you smoke, on average?</p> <p>तपाईंले चुरोट खाएको दिनमा औसतमा कति ओटासम्म चुरोट खानुहुन्छ?</p>	<p>Enter:</p>	
D04_V	<p>Write again:</p> <p>फेरी लेख्नुहोस्:</p>	<p>Enter:</p>	-If D04 = D04_V, go to D05
D05	<p>Do you usually buy loose cigarettes or in packets?</p> <p>तपाईं प्रायः खिल्ली चुरोट किन्नुहुन्छ कि बट्टामा?</p>	<p>1. Loose 2. Packet</p> <p>१. खुला / खिल्ली चुरोट २. प्याकेट / बट्टामा</p>	-If D05 =1, go to D05_1

D05_1	<p>If you buy loose cigarettes, what are the reasons?</p> <p>यदि तपाईं खिल्ली चुरोट किन्नुहुन्छ भने, त्यसको कारणहरू के होलान्?</p>	<ol style="list-style-type: none"> 1. Cheap 2. Convenience to purchase 3. Avoid seeing GHW 4. Limit over smoking 5. Difficult to keep packet secretly 6. Others specify: <ol style="list-style-type: none"> १. सस्तो हुन्छ २. सजिलै किन्न पाइन्छ ३. बट्टामा भएको चित्र हेर्न मन नलागेर ४. धेरै सेवन नगर्नका लागि ५. बट्टा लुकाउन असहज हुने भएर ६. अन्य उल्लेख गर्नुहोस् : 	Multiple response possible
D06	<p>How do you compare the health risks between combustible cigarettes and vape/e-cigarette?</p> <p>तपाइको विचारमा चुरोट र भेप वा ई-सिगरेटबीचको स्वास्थ्य जोखिम तुलना गर्दा कस्तो लाग्छ?</p>	<ol style="list-style-type: none"> 1. Vape/e-cigarettes are less harmful than combustible cigarettes. 2. Vape/e-cigarettes are more harmful than combustible 3. Vape/e-cigarettes and combustible cigarettes are equally harmful. <ol style="list-style-type: none"> १. भेप वा ई-सिगरेट चुरोटको तुलनामा कम हानिकारक हुन्छ । २. भेप वा ई-सिगरेट चुरोटको तुलनामा बढी हानिकारक हुन्छ । ३. भेप वा ई-सिगरेट र चुरोट उस्तै हानिकारक हुन्छ । 	

D07	<p>Have you recently faced any smoking-related health problems?</p> <p>चुरोट सेवनका कारणले तपाइको स्वास्थ्यमा कुनै समस्या भए जस्तो लाग्छ?</p>	<p>1. Yes 2. No 99. Don't know / Can't say</p> <p>१. लाग्छ २. लाग्दैन ९९. थाहा छैन/ भन्न चाहन्न</p>	
D08	<p>Did you receive any quitting advice in the past 6 months?</p> <p>के तपाईंले विगत ६ महिनामा चुरोट छोड्ने सल्लाह पाउनुभएको छ?</p>	<p>1. Yes 2. No</p> <p>१. छ २. छैन</p>	
D09	<p>Have you ever tried quitting smoking in the past 6 months?</p> <p>पछिल्लो ६ महिनाभित्र तपाईंले चुरोट छोड्ने प्रयास गर्नु भयो ?</p>	<p>1. Yes 2. No</p> <p>१. गरे २. गरिन</p>	
D10	<p>What will be your smoking behavior in the next 6 months?</p> <p>अबको छ महिनामा तपाइको चुरोट खाने बानी कस्तो हुन्छ होला?</p>	<p>1. Continue smoking 2. Quit smoking 3. Switch to vape/e-cigarette 4. Use both 5. Do not know</p> <p>१. चुरोट खाइरहन्छु २. चुरोट खान छोड्छु ३. भेप वा ईसिगरेट खान्छु ४. चुरोट र भेप वा ई-सिगरेट दुवै खान्छु ५. थाहा छैन</p>	
D11	<p>Have you ever used or tried vape or e-cigarettes?</p> <p>के तपाईंले कहिल्यै भेप वा ई-सिगरेट प्रयोग गर्नु भएको छ?</p>	<p>1. Yes 2. No</p> <p>१. छ २. छैन</p>	

D12	<p>If yes, how many times have you tried or used vape or e-cigarettes in the past week?</p> <p>यदि छ भने, गत एक हप्तामा कति पटक प्रयोग गर्नुभयो ?</p>	<p><i>Enter numeric:</i></p> <p>99. <i>Don't know/ can't say</i></p> <p>९९. थाहा छैन/ भन्न चाहन्न</p>	<p>Enter '00' if you have not used it in the last week.</p> <p>यदि तपाईंले गत हप्ता प्रयोग गर्नुभएको छैन भने '००' लेख्नुहोला ।</p>
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Module E: Socio-economic and Demographic Characteristics

QN.E		Options	Skip / Logic
E01	Age उमेर	<i>Enter numeric:</i>	
E02	Gender लिंग	1. Male 2. Female 3. Others १. पुरुष २. महिला ३. अन्य	
E03	Marital status वैवाहिक अवस्था	1. Never married 2. Currently married 3. Separated 4. Single १. अविवाहित २. विवाहित ३. छुट्टिएको ४. एकल पुरुष/महिला	<p><i>[Select one]</i></p> <p><i>[एउटा छान्नुहोस्]</i></p>

E04	Caste / Ethnic group जात / जातीय समूह	<ol style="list-style-type: none"> 1. Hill Brahmin/Chettri 2. Hill indigenous (Janajati) 3. Hill Dalit 4. Newar 5. Terai Brahmin/Chettri 6. Terai indigenous (Janajati) 7. Terai Dalit 8. Other Terai caste 9. Muslim 10. Others specify..... <ol style="list-style-type: none"> १. पहाडी ब्राह्मण/ क्षेत्री २. पहाडी जनजाति ३. पहाडी दलित ४. नेवार ५. तराई ब्राह्मण/ क्षेत्री ६. तराई जनजाति ७. तराई दलित ८. अन्य तराई जाति ९. मुसलमान १०. अन्य खुलाउनुहोस् 	<p>[Select one]</p> <p>[एउटा छान्नुहोस्]</p>
E05	Educational status शैक्षिक योग्यता	<ol style="list-style-type: none"> 1. Attending secondary level (9-12) 2. Completed Secondary level (Grade 12/ Intermediate) 3. Higher education (Bachelor or above) 4. Professional/Vocational/ Technical education <ol style="list-style-type: none"> १. माध्यमिक तह पढ्दै गरेको (कक्षा ९-१२) २. माध्यमिक तह उत्तीर्ण ३. उच्च शिक्षा (स्नातक वा माथि) ४. व्यवसायिक/ प्राविधिक शिक्षा 	<p>[Select one]</p> <p>[एउटा छान्नुहोस्]</p>

E06	<p>What is your usual engagement activity (your occupation)?</p> <p>तपाईं प्राय के गर्नु हुन्छ (तपाईंको व्यवसाय)?</p>	<ol style="list-style-type: none"> 1. Salaried, working now 2. Temporarily not working, leave or switching 3. Foreign employment 4. Business, self-employed 5. Unemployed, looking for work 6. Unemployed, unable to work 7. Retired 8. Homemaker 9. Students 10. Social work/politics 11. Others (Specify) <ol style="list-style-type: none"> १. तलवी जागिर २. केहि समयको लागि काम नगर्ने/बिदा वा काम परिवर्तन गर्दै ३. वैदेशिक रोजगार ४. व्यापार, स्वरोजगार ५. बेरोजगार, काम खोजिरहेको ६. बेरोजगार, काम गर्न नसक्ने ७. अवकाश ८. घरायसी काम ९. विद्यार्थी १०. समाजसेवा/राजनीति ११. अन्य खुलाउनुहोस्: 	<p>[Select one]</p> <p>[एउटा छान्नुहोस्]</p>
E07	<p>Which of the following best describes your approximate household income in the past 12 months?</p> <p>बिगत १२ महिनामा तपाईंको परिवारको आम्दानी कति थियो ?</p>	<ol style="list-style-type: none"> 1. No earning 2. Up to 2 lakhs 3. 2 to 5 lakhs 4. 5 to 10 lakhs 5. 10 to 20 lakhs 6. Above 20 lakhs 99. Don't Know / Can't Say <ol style="list-style-type: none"> १. आम्दानी छैन २. २ लाखसम्म ३. २ - ५ लाखसम्म ४. ५ - १० लाखसम्म ५. १० - २० लाखसम्म ६. २० लाखभन्दामाथि ९९. भन्न चाहन्न 	

RC. Re-contact

QN	Question	Options	Skip
RC1	<p>Would you be willing to provide us with your contact details for us to contact you in the future?</p> <p>भविष्यमा गरिने यस्तै सर्वेक्षणमा भाग लिन तपाईंको सम्पर्क फोन न र इमेल दिन चाहनुहुन्छ?</p>	<p>1. Yes 2. No</p> <p>१. चाहन्छु २. चाहन्न</p>	<p>- If yes, go to RC2</p> <p>- If no, end the survey</p>
RC2	<p>If yes, record the following:</p> <p>यदि चाहनुहुन्छ भने तल उल्लेख गरिएका जानकारी उपलब्ध गराउनुहोस् ।</p>		
	<p>Name:</p> <p>नाम:</p>		
	<p>Phone:</p> <p>फोन:</p>		
	<p>Email:</p> <p>इमेल:</p>		

END_TIME. Start of survey date and time stamp:

DD	MM	YYYY	HH:	MM:	SS
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