

1 **Illegal Wildlife Trafficking – The Dark Side of** 2 **Traveling Across Borders: Malaysia Experience**

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4 *Wildlife tourism and international travel have expanded significantly over the*
5 *past decades, facilitating cultural exchange, economic growth, and nature-*
6 *based tourism opportunities. However, the increased movement of people,*
7 *goods, and services across borders has also created pathways for illegal*
8 *wildlife trafficking (IWT), one of the world's most profitable transnational*
9 *environmental crimes. As a biodiversity-rich nation, Malaysia occupies a*
10 *central role in the global wildlife trade network — serving as both a source*
11 *and a transit country for endangered flora and fauna. This paper examines*
12 *the dark side of wildlife trafficking through the lens of tourism and cross-*
13 *border travel, highlighting Malaysia's experience within a regional network*
14 *spanning Thailand, Indonesia and Singapore and is based on recent research*
15 *conducted with the Malaysian Anti-Corruption Agency. The focus of the study*
16 *was to analyze current trends and history of illegal wildlife trade based on a*
17 *database of seizures, arrests, and prosecutions recorded by enforcement*
18 *agencies such as the Department of Wildlife and National Park (DWNP), the*
19 *Royal Malaysian Police (PDRM), and the Royal Malaysian Customs*
20 *Department, and to develop persuasive communication messages based on the*
21 *findings of psychological studies on consumer behavior to reduce demand for*
22 *wildlife-based products across national borders. Tourism, while often*
23 *celebrated for its role in promoting environmental awareness and generating*
24 *conservation funding, paradoxically contributes to wildlife exploitation*
25 *through the demand for exotic souvenirs, live animal encounters, and pet*
26 *trade markets. The rise in cross-border travel and the proliferation of digital*
27 *tourism platforms have intensified the movement of wildlife and derived*
28 *products, often disguised as cultural commodities or ecotourism experiences.*
29 *Drawing from recent enforcement data, community perceptions, and*
30 *communication-based conservation strategies, this paper discusses how*
31 *demand reduction, legal instruments, and behavior change interventions*
32 *contribute to curbing IWT. The findings reveal that although enforcement and*
33 *policy mechanisms are in place, their success depends on community*
34 *awareness and ethical tourism practices and demonstrate the importance of*
35 *raising public awareness and changing attitudes and beliefs about IWT*
36 *behaviour. The paper concludes by recommending an integrated legislative*
37 *and communication approach involving border communities, travellers and*
38 *local institutions to foster behavioural transformation towards wildlife*
39 *protection in the country.*

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41 **Keywords:** *wildlife trafficking, conservation communication, behavioral*
42 *change, Malaysia, tourism, biodiversity governance, enforcement*

43 44 45 **Introduction**

46
47 Illegal wildlife trafficking (IWT) has become one of the world's most
48 lucrative transnational crimes, valued between USD 7–23 billion annually
49 (UNODC, 2020). Southeast Asia, particularly Malaysia, is both a biodiversity

1 hotspot and a critical node in the global wildlife supply chain (TRAFFIC, 2023).
2 Malaysia’s dual status as a source, transit, and consumer country makes its
3 experience unique and complex. Its strategic geography — bordering Thailand,
4 Indonesia, and Singapore — enables both legal trade and illegal smuggling
5 operations to flourish. The purpose of this paper is to explore the Malaysian
6 experience in combating IWT by integrating legal enforcement and conservation
7 communication. The study also assesses how behavior change models can
8 reduce consumer demand and strengthen ethical tourism.

11 Objectives

13 The objectives of this study are to:

- 15 • Analyze current trends and historical patterns of illegal wildlife trade based
16 on seizure, arrest, and prosecution databases recorded by enforcement
17 agencies such as the Department of Wildlife and National Parks
18 (PERHILITAN), the Royal Malaysia Police (PDRM), and the Royal
19 Malaysian Customs Department.
- 20 • Map wildlife trafficking hotspots using geospatial data and Geographic
21 Information System (GIS) technology to identify trafficking patterns,
22 movement routes, and the primary transit corridors utilized by trafficking
23 syndicates.
- 24 • Develop persuasive communication messages based on findings from
25 consumer behavior and psychological studies to reduce demand for wildlife-
26 based products.

29 Literature Review

31 Wildlife trafficking ranks alongside drug smuggling and arms trade in its
32 profitability and sophistication (Traffic, 2020). Southeast Asia’s dynamic
33 economy and extensive transport networks make it a hotspot for wildlife
34 trafficking (UNODC, 2020). Malaysia’s biodiversity is globally recognized,
35 harboring over 15,000 vascular plant species and more than 2,000 vertebrates
36 (DWNP, 2023). Legal frameworks such as the Wildlife Conservation Act 2010
37 (Act 716) and the International Trade in Endangered Species Act 2008 (Act 686)
38 provide the backbone for enforcement, yet addressing consumer demand
39 remains vital (Verissimo & Wan, 2019).

40 Recent incidents, such as the arrest of two customs officers among eleven
41 individuals involved in wildlife smuggling activities (Bernama, 2024),
42 demonstrate the widespread presence of illegal wildlife trafficking (IWT) in
43 Malaysia. This illicit trade, estimated to generate billions of ringgit in profits for
44 transnational organized crime groups, is regarded as one of the most lucrative
45 forms of organized crime, ranking only behind drug trafficking, counterfeit
46 goods, and human trafficking (INTERPOL–UNEP, 2016).

1 Malaysia has implemented various laws and regulations to combat wildlife
2 trafficking, including the Wildlife Conservation Act 2010 and relevant
3 provisions under the Penal Code. Nevertheless, enforcement efforts continue to
4 face significant challenges due to factors such as limited resources and the
5 involvement of highly sophisticated organized criminal syndicates. The
6 transboundary nature of wildlife crime further complicates enforcement efforts,
7 necessitating closer cooperation with neighboring countries and international
8 enforcement agencies.

9 Although enforcement remains the primary focus of government
10 interventions, lessons from previous studies indicate that a combination of
11 demand-side and supply-side measures can effectively reduce wildlife
12 trafficking globally. In Malaysia, success in combating IWT is often measured
13 through arrests and seizures; however, these indicators alone do not necessarily
14 produce long-term impacts in reducing the criminal incentives that sustain illegal
15 wildlife markets. Therefore, drawing upon previous studies such as Wyatt (2021)
16 and Duensing et al. (2023), this research was designed to provide a
17 comprehensive analysis of wildlife trafficking in Peninsular Malaysia.

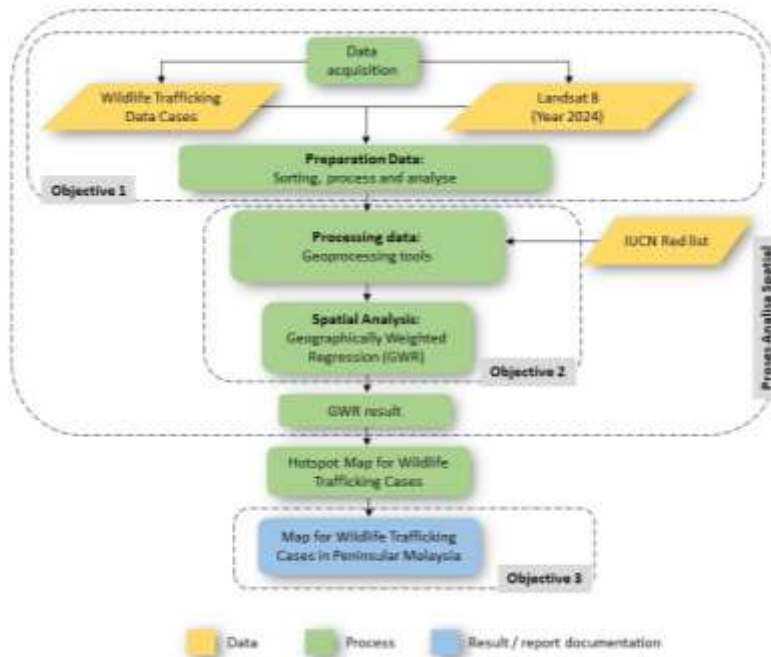
18 19 20 **Methodology**

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22 This study synthesizes data from literature, enforcement reports, and policy
23 reviews. Case studies on pangolin seizures and songbird trade were analyzed to
24 evaluate Malaysia's enforcement efficiency. Behavioral insights were applied
25 using the Theory of Planned Behavior (Ajzen, 1991) to examine demand
26 reduction.

27 For the objective of mapping wildlife trafficking hotspots in Peninsular
28 Malaysia, this study will be conducted in collaboration with the Department of
29 Wildlife and National Parks, DWNP (or PERHILITAN in its Malaysian
30 acronym) to obtain comprehensive data on wildlife trafficking cases across
31 Peninsular Malaysia. The dataset will include details such as the species
32 involved, quantities seized, locations, and dates of seizures. Landsat satellite
33 imagery with a 30-meter spatial resolution will be utilized to map the locations
34 and identify areas associated with wildlife trafficking activities. Figure 1
35 illustrates the analytical process that will be employed in this research.

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1 **Figure 1.** Data collection and analysis for hotspot mapping



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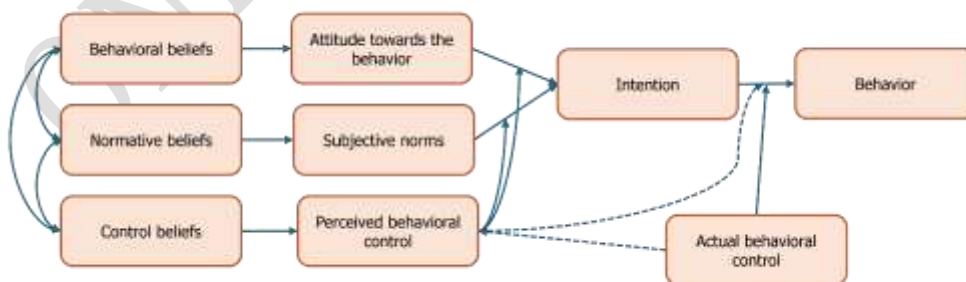
For Objectives 3 of the study, namely the development of persuasive messages and the evaluation of their effectiveness in contributing to attitude change toward Illegal Wildlife Trafficking (IWT), the research framework will be based on the approaches developed by Ham et al. (2009) and Brown et al. (2010). These approaches are grounded in the Theory of Planned Behavior (Ajzen, 1991). This theory has been widely applied in the design of persuasive communication strategies for protected areas and conservation initiatives (Brown et al., 2010; Ham et al., 2009).

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13 **Figure 2.** Theory of Planned Behavior (Ajzen, 1991)



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1 Findings and Discussion

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3 Malaysia's experience reflects a paradox: while recognized for its
4 conservation efforts, it remains a hub for illegal wildlife movement (Nijman &
5 Shepherd, 2022). Despite notable seizures, conviction rates are low, and demand
6 for wildlife products persists due to cultural and social factors. Communication
7 campaigns emphasizing empathy and conservation ethics have improved public
8 engagement (PERHILITAN, 2024).

9
10 Objective 1: current trends and historical patterns of illegal wildlife trade

11 1. Trend of iWT

12 This figure presents the various categories of public complaints received
13 by PERHILITAN during 2024 through two primary reporting channels:
14 the Hotline and Facebook. The complaints encompass wildlife-related
15 incidents such as human-wildlife conflicts, wildlife attacks, wildlife
16 sightings, wildlife crime reports, and other miscellaneous issues. The
17 data provide insights into public engagement with wildlife management
18 and indicate the relative importance of different reporting platforms in
19 facilitating communication between the public and wildlife authorities.

20 In 2024, PERHILITAN received 1,469 public complaints, with the
21 majority submitted through the Hotline (81.3%), while 18.7% were
22 reported via Facebook. The Hotline remained the preferred channel for
23 urgent wildlife-related incidents, whereas social media played an
24 increasingly important role in reporting wildlife crime and facilitating
25 public engagement.

26 2. Types and Categories of Wildlife Crime

27 Between 2020 until 2024, the analysis found that **illegal possession or**
28 **use of wildlife** was the most dominant offence, accounting for 549 cases
29 (80.38%). This was followed by wildlife smuggling with 54 cases
30 (7.91%), illegal hunting with 25 cases (3.66%), encroachment into
31 protected areas with 28 cases (4.10%), and unlicensed wildlife trade with
32 22 cases (3.22%). Cases involving zoos/exhibitions and animal cruelty
33 or provocation were relatively rare, with only 2 cases (0.29%) and 3 cases
34 (0.44%), respectively (refer to Figure 3).

35 These findings indicate that the possession and use of live wildlife are
36 the primary drivers of wildlife crime in Peninsular Malaysia. Demand for
37 wildlife as pets, exhibition animals, and symbols of social status appears
38 to be a major contributing factor. Although smuggling cases constitute a
39 smaller proportion of offences, they remain highly significant due to their
40 involvement in transboundary trafficking networks that contribute to
41 species decline and biodiversity loss. Illegal hunting and encroachment
42 into protected areas further threaten wildlife populations by degrading
43 natural habitats and placing additional pressure on endangered species.

Table 1. Summary of iWT cases as reported to the Department of Wildlife and National Park (DWNP) in 2024

Category	Jan–Mar Hotline	Jan–Mar Facebook	Apr–Jun Hotline	Apr–Jun Facebook	Jul–Sep Hotline	Jul–Sep Facebook	Oct–Dec Hotline	Oct–Dec Facebook	Total
Human–Wildlife Conflict	107	23	186	18	311	25	285	103	1,058
Wildlife Attack Incidents	19	0	18	0	29	1	33	0	100
Wildlife Presence Reports	9	3	7	0	16	0	25	0	60
Wildlife Crime Reports	2	11	8	21	3	17	4	48	114
Others	28	1	41	1	27	2	37	0	137
Total	165	38	260	40	386	45	384	151	1,469

(source: DWNP 2025)

Notes

- *Human–Wildlife Conflict* refers to complaints involving wildlife disturbances or nuisance incidents affecting people, property, or livelihoods.
- *Wildlife Attack Incidents* refer to reported cases where wildlife directly attacked or injured humans, livestock, or property.
- *Wildlife Presence Reports* involve sightings or occurrences of wildlife in residential, agricultural, or urban areas.
- *Wildlife Crime Reports* include complaints related to illegal hunting, poaching, wildlife possession, trafficking, or other offences under wildlife legislation.
- *Others* encompass miscellaneous complaints that do not fall within the primary categories.

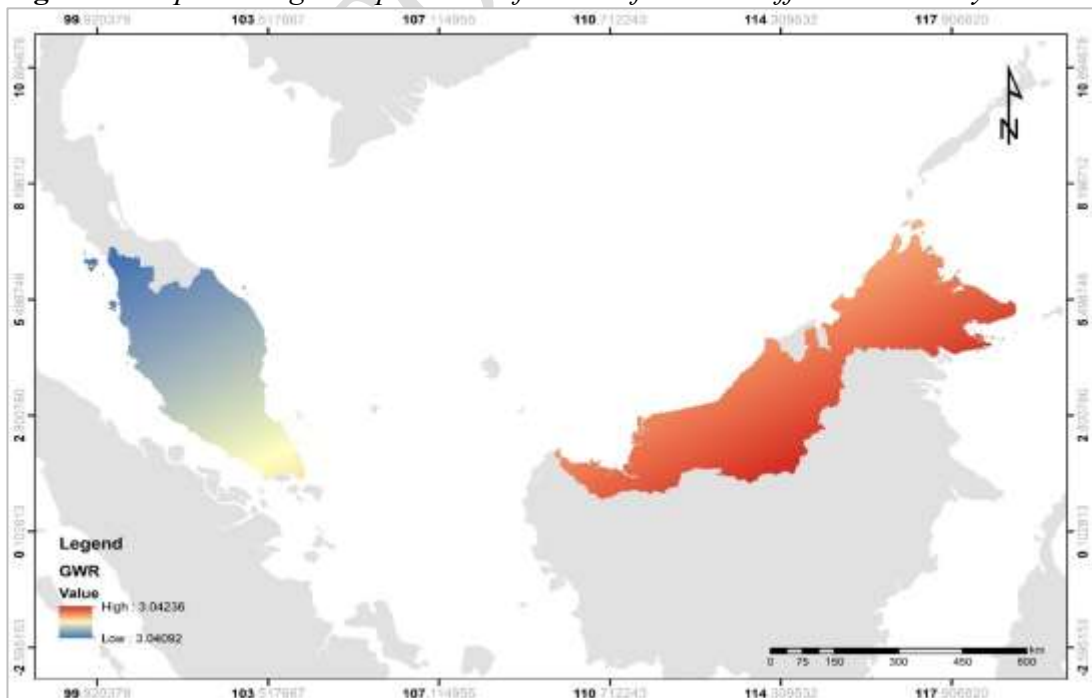
Figure 3. *Wildlife cases in Malaysia 2020-2024 (Source: DWNP, 2024)*



Objective 2: wildlife trafficking hotspots using geospatial data and Geographic Information System (GIS)

Geographically Weighted Regression (GWR) is a spatial statistical technique that examines how relationships between variables vary across geographic locations. Unlike conventional regression models that produce a single global estimate, GWR generates localized estimates, enabling researchers to identify areas where specific factors exert stronger or weaker influences on wildlife trafficking activities (Figure 4).

Figure 4. *Map showing hot-spots areas for wildlife related offenses in Malaysia*



The GWR analysis successfully identified spatial variations in wildlife trafficking risk across Malaysia. Areas with higher GWR values, represented by **red colours on the map**, indicate locations with a greater likelihood or susceptibility to wildlife trafficking activities. In contrast, areas with lower GWR values, represented by blue to yellow colours, indicate relatively lower trafficking risk.

The results revealed that the northern and eastern regions of Peninsular Malaysia, as well as large parts of **Sabah and Sarawak**, recorded the highest GWR values (3.04092–3.04236), suggesting a stronger propensity for wildlife trafficking activities in these areas. These patterns may be associated with factors such as proximity to international borders, extensive forest cover, lower accessibility for enforcement agencies, and the presence of wildlife-rich habitats.

Conversely, the western region of Peninsular Malaysia, particularly around major urban centres, exhibited lower GWR values, indicating comparatively lower wildlife trafficking risk. This may reflect stronger enforcement presence, greater accessibility, enhanced surveillance systems, and reduced opportunities for illegal harvesting activities.

Objective 3: persuasive communication

Persuasive communication plays an important role in combating illegal wildlife trafficking. It helps educate the public, influence policymakers, and encourage behavioral change among individuals involved in the trade, purchase, or consumption of wildlife products. Implementing persuasive communication programs to address illegal wildlife trade requires careful planning, implementation, and evaluation.

Based on this approach, the study on the development of persuasive messages was divided into two phases.

Thematic Analysis and were informed by the findings obtained from Phase 1.

Phase 1 of the study aimed to identify problematic behaviors related to the possession and keeping of wildlife, as well as to understand the beliefs that influence such behaviors. A series of semi-structured interviews were conducted with four individuals who had previously been involved in wildlife possession and keeping activities.

The interviews were designed based on the Theory of Planned Behavior (TPB) framework, which examines three key determinants of behavior:

Table 2. *Summary of Phase 1- Identifying Problematic Behaviors and Understanding Underlying Beliefs*

TPB Component	Focus of Investigation
Attitudinal Beliefs	Perceived benefits and disadvantages of owning and keeping wildlife
Normative Beliefs	Influence of family, friends, peers, and social groups on wildlife ownership
Control Beliefs	Factors that facilitate or hinder the ability to own and keep wildlife

Seven interview questions were developed to explore respondents' awareness of wildlife laws, perceived advantages and disadvantages of wildlife ownership, social influences, and enabling or constraining factors associated with wildlife possession.

All interviews were conducted face-to-face, recorded with participants' consent, transcribed, and analyzed using thematic analysis. The purpose of the analysis was to identify recurring themes, codes, and dominant beliefs associated with wildlife ownership and possession. These findings provided the foundation for understanding offender motivations and served as the basis for developing evidence-based persuasive communication strategies aimed at reducing demand for illegal wildlife ownership and trade.

Summary of key Thematic Analysis is presented below:

Table 3. *Summary of Thematic Analysis*

Theme	Key Code	Summary of Findings	Implications for Communication Strategy
Legal Awareness	Awareness of Wildlife Law	Several respondents demonstrated awareness that keeping, owning, or trading certain wildlife species without permits is prohibited under Malaysian law and may result in substantial penalties.	Reinforce existing legal knowledge through targeted awareness campaigns highlighting legal consequences and protected species lists.
Legal Awareness	Misunderstanding of Legality	Many respondents incorrectly assumed that products or animals passing through customs, accompanied by documentation, or available in the marketplace were automatically legal.	Address misconceptions by clarifying that availability, customs clearance, or possession of documents does not necessarily indicate legality.
Legal Awareness	Limited Understanding of Regulatory Requirements	Respondents often lacked knowledge regarding species-specific regulations, permit requirements, and differences between domestic and international wildlife laws.	Develop simplified guidance materials explaining licensing requirements, protected species regulations, and legal responsibilities of wildlife owners.

Legal Awareness	Reliance on Informal Assumptions	Some respondents relied on personal assumptions rather than verified legal information when determining whether wildlife possession was lawful.	Promote trusted information sources and encourage verification with PERHILITAN and relevant authorities before purchasing or owning wildlife.
Legal Awareness	Lack of Access to Legal Information	Respondents expressed difficulty obtaining clear, understandable, and accessible legal information concerning wildlife ownership and trade.	Improve public access to user-friendly legal information, warning systems, online verification tools, and awareness campaigns targeting small-scale wildlife traders and hobbyists.

The thematic analysis identified legal awareness as the most dominant belief influencing wildlife ownership behavior. While most respondents were aware that certain wildlife species require permits and that illegal ownership may result in penalties, there remained significant misunderstandings regarding what constitutes legal possession. Many respondents incorrectly assumed that wildlife sold openly, accompanied by documentation, or passing through customs was automatically legal.

Another prominent theme was fear of enforcement and social consequences, indicating that legal sanctions and negative public perception strongly influence decision-making. Respondents expressed concerns about prosecution, fines, and social disapproval if found to be keeping wildlife illegally.

The findings also highlighted the role of emotional attachment to wildlife, where affection for exotic pets often served as a justification for ownership despite potential legal concerns. Social influences, including support or opposition from family members, friends, and community members, were also found to shape intentions to own wildlife.

Furthermore, social media emerged as a powerful influence, contributing to the normalization and promotion of exotic wildlife ownership through repeated exposure to wildlife-related content. Respondents also identified barriers such as housing limitations, logistics, and unclear licensing procedures, suggesting that improved access to legal information and more user-friendly regulatory systems could enhance compliance.

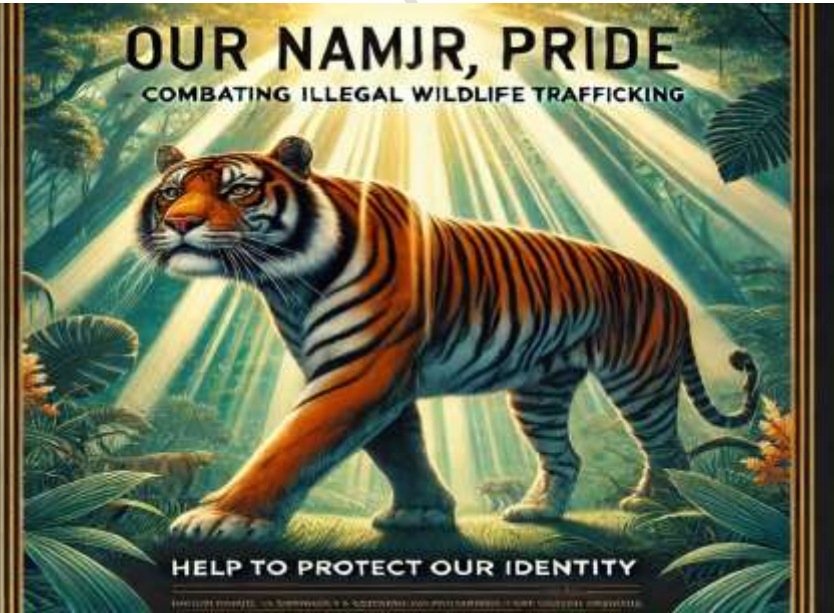
Consequently, effective demand-reduction strategies should move beyond conventional awareness campaigns and incorporate **targeted persuasive communication** that addresses misconceptions, leverages social norms, highlights enforcement risks, and promotes ethical attitudes toward wildlife conservation. Social media, identified as both a driver of demand and a potential communication channel, offers a strategic platform for influencing public perceptions and reducing the normalization of illegal wildlife ownership.

Persuasive communication

Based on the thematic analysis of respondents' beliefs, it was found that Normative Beliefs and Control Beliefs were the two most dominant dimensions, following the awareness component. Among the most frequently mentioned beliefs was **"Fear of enforcement or social reaction,"** which reflects both social norms and perceived behavioral control. This was followed by "Social support" and **"Opposition from social contacts."** These findings demonstrate the strong influence of close social networks—such as family members, neighbours, and the wider community—on an individual's intention to own or refrain from owning wildlife.

The Control Belief dimension also reflects practical challenges associated with wildlife ownership, including access, licensing systems, and the influence of the digital environment. Codes such as "Structural or personal constraint," "Improved regulatory support," and "Social media influence" suggest that perceptions of convenience, institutional support, and media exposure play important roles in shaping behavior. The findings indicate that wildlife ownership intentions are not driven solely by personal interest or attitudes, but are also influenced by social surroundings and existing regulatory structures. The findings are extremely valuable because they provide an evidence-based foundation for designing social media campaigns rather than relying on generic conservation messages. The thematic analysis tells us what beliefs actually drive wildlife ownership behavior, allowing campaign messages to target the psychological and social factors that matter most. Some proposed social media campaigns are shown below.





ONLY 1

1 Policy Implications and Recommendations

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3 An integrated approach is recommended, including a national multi-agency
4 task force on wildlife crime, behavioral interventions through social marketing,
5 and harmonization of ASEAN legal frameworks. Community empowerment
6 should be central to reducing supply pressures at border areas.
7

8 9 Conclusion

10
11 Illegal wildlife trafficking is both an ecological and moral crisis. Malaysia's
12 experience illustrates that enforcement alone is insufficient without societal
13 transformation. Combining legal frameworks with conservation communication
14 can foster behavioral change and reduce demand. Malaysia has the potential to
15 lead the ASEAN region in establishing a model for integrated wildlife crime
16 prevention.
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