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# Managing Economic Leakages for Building Resilient and Sustainable Tourism Destination Performance

## Abstract

Tourism yields substantial economic benefits to destinations. However, economic leakages often undermine these benefits, weakening local value chains and hindering long-term economic sustainability. While existing research predominantly emphasises supply-side interventions to address leakages, limited attention has been given to demand-side determinants and to tourists' behaviour in exacerbating or mitigating leakages. This study develops a conceptual framework integrating economic leakages, particularly demand-side determinants, behavioural nudges and destination resilience, to investigate how nudging interventions can influence tourists' choices and preferences toward local products and services. By synthesising insights from economic leakages, behavioural economics and sustainable tourism, this study highlights both theoretical contributions and practical implications for policymakers and tourism stakeholders. Additionally, it identifies key implementation challenges of behavioural interventions and proposes strategic measures to address them. The study concludes by outlining future research directions, emphasising empirical validation and policy-driven applications to foster sustainable tourism development and economic resilience.

**Keywords:** economic leakages, destination resilience, tourist behaviour, behavioural economics, nudge theory, economic sustainability

## 1. Introduction

Over the decades, tourism has been recognised as a pivotal driver of economic development, contributing significantly to employment generation, infrastructure development, tax revenues, foreign exchange earnings, and many more (Chaitanya & Swain, 2024; Rinne & Saastamoinen, 2005). Both academic discourse and policy directives have underscored the instrumental role of tourism in propelling economic development worldwide. This impact is particularly pronounced in developing and small island economies, where tourism catalyses economic growth (Mehmood et al., 2024; Pata, 2021; Rylance & Spenceley, 2017; Yan & Wall, 2002). For example, an empirical study by Faber and Gaubert (2019) in Coastal Mexico demonstrated a positive relationship between tourism activity and local economic development particularly through employment generation and increased GDP contribution. However, despite yielding numerous financial benefits, the role of tourism has been severely criticized by some researchers for its potential adverse impacts on local economies (Perles-Ribes et al., 2024; Terzioglu & Gokovali, 2016).

While tourism activity is widely recognized as a catalyst for economic development, its outcomes often remain uneven without strategic and inclusive planning (George, Inbakaran, & Poyyamoli, 2010). Various empirical investigations have substantiated this theoretical concern. For instance, Faber and Gaubert (2019) found that although tourism activity positively contributed to local economic development in Mexico's coastal region through increased GDP, employment, and demand for manufacturing and services, the economic benefits

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were geographically concentrated, reinforcing inequalities and limiting broader economic spillovers. Similarly, another empirical study in Croatia's coastal regions has found that the lack of strategic tourism and housing policies has led to inflated housing prices, primarily driven by short-term rental demand during peak seasons, ultimately resulting in the emigration of educated and skilled youth. These cases underscore the paradox that, despite its development potential, tourism can exacerbate socioeconomic inequalities and undermine the long-term economic sustainability of destinations (Mikulić et al., 2024).

In this line, unplanned and unregulated tourism activities often precipitate several detrimental economic impacts on tourism destinations (Gore et al., 2021). Among these, economic leakages are widely recognised by researchers as a pervasive issue that gradually undermines the economic structure of destinations (Garrigós-Simón et al., 2015). According to Ünlüönen et al. (2011), economic leakages are defined as the proportion of tourism revenue that leaves the destination's economy. Leakages are often unavoidable in destinations and occur through various channels, including payments for imported goods and services, profit repatriation, salary remittances, and interest payments on external loans. While such processes may appear operationally necessary, they have long-term consequences for destination economies. By diverting a significant portion of tourism revenue away from the destination, leakages substantially reduce the amount that remains within the local economy. While their short-term impact may seem marginal, their persistent occurrence gradually erodes local economic structures. They constrain the integration of host communities into tourism supply chains, resulting in a negligible economic contribution to local communities. Consequently, even when tourism contributes positively to regional economic development, its full economic potential often remains unrealized for local economies and host communities. Unless these leakages are accurately identified, measured and effectively mitigated, their cumulative effects will continue to undermine inclusive economic development (Wiranatha et al., 2017). Ultimately, economic leakages pose a significant barrier to achieving long-term economic sustainability and resilience (Chaitanya & Swain, 2024; Garrigós-Simón et al., 2015).

Empirical evidence highlights the structural challenge that economic leakages pose to tourism-induced development (Bagri, Gupta, & George, 2009; Henthorne, George, & Miller, 2016). A recent empirical study conducted in Croatia estimated leakage in tourism-related firms using a novel, data-intensive methodology (Srhoj & Mikulić, 2025). The findings revealed a substantial level of economic leakage, amounting to 52.8%, including both direct and indirect leakages, within tourism-related enterprises in the Croatian economy. Complementing this, another study by Mikulić et al. (2024) has identified a novel form of non-financial leakage, conceptualised as brain drain, in which housing unaffordability, driven by unregulated short-term rentals in the overtourism-affected regions of Croatia, has led to the emigration of skilled residents. These findings reinforce the argument that economic leakages remain a critical challenge in tourism destinations and advocate targeted policy-level interventions to mitigate import dependency and strengthen local supply chains, thereby enhancing tourism's contribution to regional economic development.

Despite their significant impact on undermining the core economic structure of destinations, leakages have garnered limited scholarly attention. Moreover, the extant research worldwide has predominantly focused on supply-side determinants driving economic leakages (Sandbrook, 2010; Supradist, 2004; Suryawardani & Wiranatha, 2016; Terzioglu & Gokovali, 2016). This focus stems from the prevailing academic predilection that supply-side deficiencies, such as higher prices, inferior quality, insufficient quantities, unavailability, inconsistency, untimely delivery, etc., of locally produced goods and services, primarily drive businesses in a destination to rely heavily on imports, thereby exacerbating leakages (Torres, 2002). Consequently, the scholarly attention on demand-side factors contributing to economic leakages remains largely underexplored. Notably, previous studies indicate that the procurement patterns of tourism enterprises, including hotels, resorts, and restaurants, are significantly influenced by tourists' consumption behaviour, specifically their preferences and choices (Torres, 2002, 2003). This implies that demand-side determinants play an equally pivotal role in driving economic leakages within destinations. In this context, this study aims to address this

critical gap by examining how demand-side determinants, particularly tourist preferences and choices, contribute to economic leakages, thereby offering an essential extension to the existing discourse on economic sustainability in tourism destinations.

Furthermore, the intricate relationship between economic leakages and the economic resilience of destinations remains underexplored in the extant literature. In the context of globalisation, where cross-border operations and interdependencies among economies have become the norm, economic integration is both inevitable and often beneficial (Peric, 2005; United Nations Conference on Trade and Development [UNCTAD], 2010). However, such integration also introduces inherent challenges. Economic leakages occur because of economic integration, redirecting a substantial portion of tourism revenue to external economies. A more comprehensive discussion of this phenomenon is provided in subsequent sections. Importantly, persistent leakages render destinations extremely vulnerable to external shocks, including geopolitical instability, economic downturns, and global supply chain disruptions. In this context, mitigating economic leakages emerges as a vital strategy for strengthening long-term destination resilience (Chaitanya & Swain, 2024; Peric, 2005). Nevertheless, this relationship remains insufficiently examined in the academic discourse. Addressing this critical gap, this study endeavours to elucidate the underlying and intricate relationships between economic leakages and the economic resilience of tourism destinations, thereby contributing a novel and timely perspective to the literature on sustainable tourism development.

Finally, this study introduces a novel theoretical perspective by integrating the concepts and theories of behavioural economics, particularly the concept of “Nudging”, as a potential strategy to mitigate economic leakages. While behavioural economics has been extensively applied across various domains, its application to economic leakages in tourism remains untouched and unexplored. By exploring this interdisciplinary intersection, this study proposes an innovative framework that positions behavioural nudges as instrumental in influencing tourist decision-making and consumption patterns, thereby fostering greater economic sustainability and resilience at the destination level. This conceptual advancement underscores the study’s novelty and theoretical significance, offering far-reaching practical and policy-relevant implications for policymakers, tourism enterprises and local communities. In doing so, it paves the way for the development of empirically grounded and evidence-based strategies to strengthen economic sustainability and resilience. Furthermore, building on the literature review, this study formulates a series of theoretical and conceptual propositions that elucidate the relationships among nudging interventions, demand-side determinants, economic leakages, and destination resilience. These propositions not only address critical gaps in existing literature but also serve as a foundation for future empirical research, offering testable hypotheses that can be validated in subsequent studies through quantitative or qualitative methodologies.

**Research Question:** This study seeks to answer the following research question: *“How can behavioural nudges influence tourists’ preferences and choices toward local goods and services, thereby mitigating economic leakages and fostering economic sustainability and resilience in tourism destinations?”*

## 2. Literature review and critical analysis

### 2.1. Examining the demand-side dimension of economic leakages

As mentioned earlier, the extant research on economic leakages has predominantly focused on investigating the nature and occurrence of leakages through a supply-side perspective (Sandbrook, 2010). Empirical studies have primarily attributed economic leakages to supply-side deficiencies, such as higher prices, inferior quality, insufficient quantities, unavailability, inconsistency, and untimely delivery, etc., of locally produced goods and services (Oka Suryawardani et al., 2014). Subsequent research has largely replicated established and statistically validated methodologies to investigate leakages across tourism destinations worldwide (Hussain et al., 2012;

Terzioglu & Gokovali, 2016; Ünlüönen et al., 2011). This methodological reliance stems from the inherent complexity of quantifying economic leakages, coupled with several limitations, including the absence of standardised statistical frameworks, insufficient data availability, inadequate record-keeping practices within tourism enterprises and ambiguity regarding the data to be included in leakage estimations (Jönsson, 2015; Rylance & Spenceley, 2017; Sandbrook, 2010). Consequently, research on leakages has become increasingly repetitive, with limited methodological innovation.

A recent empirical study by Srhoj and Mikulić (2025), however, represents a significant methodological breakthrough in this context. Using firm-to-firm transaction data from Croatia, they developed a mathematical model capable of capturing supply chain linkages across multiple tiers, providing a more granular, detailed view of how tourism-related expenditures flow within and outside the national economy. Their findings revealed that direct imports by tourism-related firms accounted for only 8.4% of total supplier expenditure, while indirect imports embedded in domestic suppliers' operations increased the total leakage value to 52.8%. This novel approach overcomes the limitations of traditional macro- and micro-level methodologies, which often focus on direct import leakage while overlooking crucial indirect leakages through domestic suppliers. In addition, another empirical study by Gössling et al. (2025) explored a novel dimension of economic leakage arising from commissions paid to international online booking platforms. This macro-level study found that 2.1% of total hotel revenue in 2023 was leaked through such payments. This digital leakage channel highlights the growing relevance of platform-based financial outflows in tourism economies. This study calls for expanding the analytical lens on tourism leakages beyond import-based mechanisms. Although these pioneering studies retain a supply-side orientation, their methodological robustness and empirical depth offer a replicable framework that can significantly enhance the accuracy of leakage estimations in future tourism research. Nevertheless, despite this advancement, the broader academic discourse continues to exhibit a strong emphasis on supply-side determinants. This has perpetuated an academic bias, leading to a scarcity of research on demand-side determinants of leakages, which remain a critical yet overlooked dimension in the academic discourse (Torres, 2002).

Supply-side research typically emphasises that deficiencies such as poor quality, insufficient quantities, inconsistent supply, inflated prices, inadequate information about demand and supply, poor storage facilities, untimely delivery, etc., significantly influence the procurement decisions of tourism businesses, thereby contributing to operational leakages in destinations (Oka Suryawardani et al., 2014; Pratt et al., 2018). Contrastingly, demand-side studies have strongly argued that procurement behaviour, especially import purchases of hotels and other tourism enterprises, is primarily shaped by customer (tourist) preferences and choices (Torres, 2002). For example, when an American tourist in China or Japan prefers continental cuisine, hotels or restaurants are often compelled to import authentic ingredients from other countries to ensure authenticity and cater to such customer preferences. Therefore, leakage mitigation strategies must not only focus on supply-side improvements but also address tourists' preferences, choices and consumption patterns.

Further, demand-side research has identified that tourists' choices or preferences are mainly influenced by factors such as “nationality”, “age group” and “type of tourist” (Torres, 2003). For example, North American tourists, who constitute a significant share of visitors to the Caribbean, often exhibit strong preferences for familiar, conservative food choices (Rid et al., 2014). They usually demand foods like those in their home country, strongly resisting dishes made with locally produced ingredients. Similarly, mass Fordist tourists visiting Cancun, Mexico, have shown less interest in authentic Yucatec cuisine than off-beat tourists, who tend to seek authentic local culinary experiences (Torres, 2002, 2003).

Additionally, demand-side studies on tourist behaviour and economic leakages have identified several other factors contributing to the lower consumption of local products and services, including insufficient awareness of authentic local offerings, limited accessibility to regional products, lack of widespread availability within

the destination, inadequate promotion of local products and services by businesses, etc. (Rid et al., 2014; Torres, 2002, 2003). As a result, tourists tend to rely heavily on imported alternatives, which significantly amplifies economic leakages.

However, research demonstrates that tourists' choices and preferences can be effectively influenced toward local options through targeted strategies such as extensive promotion of local cuisine and handicrafts, increasing awareness about the availability and uniqueness of local products, offering immersive experiences, including cultural walking tours, guided tours to local arts, and opportunities to interact with indigenous communities, etc. (Mtapuri et al., 2022). Such initiatives not only enhance tourist engagement but also foster greater consumption of locally produced goods and services (Terzioglu & Gokovali, 2016; Ünlüönen et al., 2011). For instance, studies in Jamaica have revealed that effective promotional strategies, combined with the widespread offering of authentic local cuisines, have successfully shifted tourists' consumption patterns from imported temperate-climate fruits (e.g., apples, pears and peaches) to locally produced tropical fruits, such as mangoes and bananas, pineapples and papayas (Torres, 2002).

These strategies can substantially influence tourists' choices and preferences, encouraging them to choose local products, including local cuisines, locally made souvenirs, indigenous accommodations and authentic local experiences. This shift boosts demand for local products, thereby increasing the circulation of tourist expenditure within host communities (Pratt et al., 2018). Simultaneously, the increasing demand for local goods and services compels tourism businesses to incorporate more local products into their offerings. Over time, this phenomenon fosters greater self-reliance on locally produced and available goods and services, significantly reducing the destination's dependence on imported goods and services (Ministry of Tourism, Government of India, 2023).

Furthermore, traditional strategies like marketing campaigns, promotional efforts, and immersive cultural experiences, while effective, often require significant resource investments (e.g., time, cost and infrastructure). Their success largely depends on tourists' willingness to alter their behaviour consciously (Hall, 2013). Moreover, these strategies might not consistently translate tourists' attitudes into real-time behavioural change.

To overcome these limitations, there is a critical need for a more targeted and efficient approach which is cost-effective, easily implementable and capable of subtly influencing tourists' preferences and decision-making processes. Such a strategy should seamlessly bridge the gap between tourists' attitudes and their actual behaviours, drawing on principles rooted in consumer psychology and behavioural economics. By leveraging these strategies, destinations can not only promote local options but also subtly influence residents to willingly adopt sustainable choices, thereby fostering meaningful, sustainable economic impacts.

The theoretical insights from the preceding discussion reveal that tourists' preferences and consumption choices significantly influence economic leakages. A greater preference for imported goods amplifies leakages, while stronger preferences for local products promote economic retention. Accordingly, the following proposition is formulated:

**Proposition 1:** *Tourists' preferences and consumption choices are critical determinants of economic leakages in tourism destinations. Specifically, a stronger preference for imported goods and services is positively associated with increased economic leakages. In comparison, a stronger preference for locally produced goods and services reduces leakages and enhances local revenue retention.*

## 2.2. Economic leakages and destination resilience

In an increasingly globalised economic order, businesses worldwide are operating on an international scale, relying heavily on global supply chains to sustain day-to-day operations (Peric, 2005; UNCTAD, 2010). Tourism enterprises, including airlines, hotels, tour operators, etc., similarly rely on these global

supply chains to deliver seamless services to tourists (Harrison, 2014). Tourism destinations, particularly in developing and small island nations, predominantly rely on external economies for their operations, including overseas capital investments, expatriate labour, and imported goods and services. (Alzboun et al., 2016; Hampton & Jeyacheya, 2020; Pratt, 2015). This over-reliance by tourism destinations on external supply chains results in significant leakages, as substantial portions of tourism revenue flow out of the local economy rather than being retained within the destination (Chaitanya & Swain, 2024; Yan & Wall, 2002). For instance, countries such as the Maldives, Jamaica, St. Lucia, Kenya, Tanzania, Nepal, and Bhutan, among others, rely heavily on external economies to support their daily operations (Lacher & Nepal, 2010; Pratt, 2015; Yahya et al., 2005). Supporting this notion, Nowak & Sahli (2024) identified through a general equilibrium analysis that tourism expansion often escalates import dependence, amplifying leakages in host economies.

However, this over-reliance on external economies not only contributes to leakages but also renders these destinations extremely vulnerable to external shocks, including economic depressions, geopolitical disturbances, pandemics, climate change, etc. (Watson & Deller, 2022). Although global supply chains confer substantial benefits to destinations, particularly in terms of cost and time efficiency in the short run, they pose considerable risks in the long term (Chaitanya & Swain, 2024). Even a minor jolt in one region can trigger severe repercussions, disrupting the economic and business activity across other areas of the world. For instance, the recent COVID-19 pandemic underscored this fragility, wherein tourism-dependent economies were severely disrupted, bringing tourism activities to a standstill. Tourism enterprises in various destinations have struggled to survive, with some unable to continue operations due to their lack of preparedness and over-reliance on external economies for input raw materials and labour (Kukanja et al., 2021). Consequently, many businesses were compelled to operate on locally available resources to survive (World Travel & Tourism Council [WTTC], 2021). These disruptions exposed how unchecked economic leakages can compound a destination's exposure to systemic crises. Surprisingly, while the academic discourse has extensively investigated economic leakages and destinations as distinct areas of inquiry, their intersection has garnered limited attention. Specifically, the long-term implications of revenue outflows on a destination's economic resilience remain largely underexplored.

In a world characterized by pervasive uncertainties, it is high time that effective crisis management receives heightened attention. Crisis management must therefore be reconceptualised not merely as a reactive mechanism during times of crisis, but as a strategic, long-term framework aimed at building resilience against external shocks (Kukanja et al., 2021; Zhong et al., 2021). Tourism authorities, in collaboration with public and private stakeholders, should formulate strategic policy-level frameworks to reduce over-dependence on external economies for operational sustainability within destinations. Although these frameworks may not yield immediate economic resilience, their phased implementation will facilitate a smoother transition, minimising potential disruptions to businesses (Chaitanya & Swain, 2024).

As mentioned earlier, leveraging supply-side strategies to mitigate economic leakages has been extensively studied by academia and implemented by tourism authorities and private stakeholders worldwide (Mtapuri et al., 2022; Wiranatha et al., 2017). However, shifting the focus to demand-side factors is imperative to address import leakages in tourism destinations. Such an approach can inherently reduce dependence on global supply chains, enhancing resilience and self-sufficiency within destination economies.

Ultimately, the efficient implementation of these measures not only fortifies macroeconomic resilience but also yields significant positive outcomes at the micro level within destinations. These include employment creation for host communities, integration of local businesses into tourism supply chains, retention of tourism revenue within the host economy, reinvestment to uplift community livelihoods, capacity building, stimulation of local production, entrepreneurial development, redistribution of tourism revenue through

local spending and an enhanced multiplier impact (Lacher & Nepal, 2010; Pratt et al., 2018; Yahya et al., 2005).

The theoretical insights from the preceding discussion highlight that building resilience in tourism destinations necessitates a strategic shift from over-reliance on external economies toward strengthening local economic integration. While supply-side interventions have been extensively explored, demand-side interventions remain underutilised yet essential approaches to mitigating leakages and fostering long-term economic resilience.

**Proposition 2:** *Strategic demand-side interventions that encourage tourist consumption of locally sourced goods and services can effectively mitigate economic leakages, enhance self-sufficiency, and significantly strengthen destination resilience against external shocks.*

### 2.3. Behavioural nudging and tourism

Tourists' preferences and choices play a crucial role in shaping the procurement patterns of tourism businesses (Torres, 2002, 2003). An in-depth analysis of tourist behaviour offers valuable insights into how their choices and preferences can be influenced to mitigate economic leakages. In this context, a deeper examination of tourists' behavioural aspects reveals the underlying cognitive and psychological factors that shape preferences and consumption choices across various facets of the travel experience.

Tourists' preferences and choices play a critical role in determining the procurement practices of tourism businesses, often shaping their reliance on imported goods and services (Torres, 2002, 2003). However, the existing literature on economic leakages has largely overlooked the behavioural aspects underpinning tourists' consumption patterns. Exploring these dimensions through the lens of behavioural economics offers novel insights into how tourist choices can be influenced to mitigate economic leakages at the destination level. According to Thaler (2018), options are the decisions individuals make when presented with various alternatives, often referred to as "choice architecture". Unlike classical economics, which assumes individuals always make rational decisions to maximize utility, it usually overlooks the psychological and cognitive factors that significantly influence decision-making. In contrast, behavioural economics recognizes that personal choices are often influenced by psychological factors, cognitive biases, emotions and social influences (Bogan, 2019).

This implies that tourists' choices are not only shaped by economic, environmental, cultural, political, and technological factors but also by a myriad of underlying cognitive and psychological factors that are equally important in shaping consumption patterns and purchase decisions (Sharma et al., 2024). Kahneman's (2013) "Thinking Fast and Slow" provides a foundational framework which explains that the mind processes information through two systems, namely System 1, which facilitates fast, intuitive and automatic decisions with minimal cognitive effort, and System 2, which engages in deliberate, effortful mental activities, such as analytical reasoning for complex computations. Most of the time, people operate on System 1, which dominates and significantly influences System 2. This "dual-process theory" aligns with extant studies suggesting that behavioural interventions often target System 1 to guide decision-making and influence behaviour (Riedlsperger, 2024). Also, System 1 decisions are characterised by heuristics and biases, which support the key claim in behavioural economics that people are not errant; instead, humans make mistakes systematically (Purcell & Nikolova, 2021; Riedlsperger, 2024). For example, a recent empirical study by Au et al. (2024) renders a strong empirical validation for this notion by demonstrating the effectiveness of simple visual cues such as vehicle colour (particularly, blue and green) in triggering intuitive cognitive processes (System 1 thinking) and significantly influencing tourists' rental choices toward electric vehicles for intra-destination mobility. The study has identified that such low-effort, heuristic-based nudges successfully influenced tourists' behaviour without the need for complex or rational argumentation, thereby validating the practical application of System 1 targeting in tourism decision-making contexts.

The behavioural aspects of tourist decision-making have emerged as a critical area of scholarly inquiry, with growing recognition of psychological and cognitive factors shaping tourists' choices toward more sustainable travel. (Nowak et al., 2024; Purcell & Nikolova, 2021). Building on these insights, empirical research in tourism has demonstrated that behavioural interventions can significantly influence tourists' preferences and consumption patterns within the decision-making environment. As conceptualised by Thaler and Sunstein (2009), these interventions involve strategically designed actions or strategies that alter the choice architecture, subtly integrated into the decision-making environment without the consumer's or user's knowledge, yet they exert a substantial influence on the decision-making process. Such interventions, when applied strategically, can effectively shape tourists' decisions in a desirable direction, typically promoting responsible, sustainable and pro-social behaviour while safeguarding their freedom of choice (Lee et al., 2021; MacInnes et al., 2022). For instance, a meta-analysis by Nisa et al. (2017) identified that behavioural interventions, including social norms, commitment, environmental appeal, descriptive norms, donation to charity and choice architecture, were highly effective in encouraging hotel guests to adopt sustainable practices, such as towel reuse.

Behavioural economics has advanced several frameworks for shaping consumer decision-making, among which “Nudge” or “Behavioural Nudging” has gained significant prominence (Sunstein, 2019). Nudging, as a behavioural intervention, is rooted in the principle of Libertarian Paternalism, which upholds individual freedom of choice while subtly guiding individuals toward better or more desirable decisions. While “liberty” ensures the freedom of choice, “paternalism” entails structuring those choices to promote outcomes beneficial to the individual or society (Souza-Neto et al., 2023). In essence, nudging involves strategically altering the decision-making environment to encourage desirable behaviour without restricting their freedom of choice, allowing them to make decisions freely without coercion.

Unlike conventional marketing or promotional gimmicks, which often aim to persuade or manipulate customer preferences through visually appealing or attention-grabbing stimuli, nudges are non-persuasive, ethical, and transparent, focusing on subtly changing customer behaviour to help them make better choices (Thaler, 2018). While marketing strategies frequently exploit impulsive tendencies to drive purchases, nudges carefully adjust the environment to encourage informed, beneficial decisions aligned with long-term social, environmental, or economic goals (Sunstein, 2019). For instance, the Adventure Junky platform demonstrates an innovative application of nudging by gamifying sustainable travel behaviours. Through a points-and-rewards system, travellers earn badges for engaging in eco-friendly activities, which are displayed on their profiles and ranked globally. This subtle competition motivates tourists to make more responsible choices, overcoming the limitations of traditional awareness campaigns, which often fail to translate knowledge into action (Nowak et al., 2024; Loewenstein et al., 2013).

The literature has outlined various types of nudges that influence consumer behaviour, including default options, visual cues, information prompts, feedback nudges, and social norms, among others (Sunstein, 2019). Nudging has garnered global attention for its practical application across diverse domains, including public policy, healthcare, finance, and, particularly, environmental sustainability. For instance, in the USA, altering the default option in state pension plans to automatically enrol employees unless they opted out led to a remarkable 40% increase in participation rates (Brown et al., 2009; Thaler & Benartzi, 2004). Similarly, an empirical study by Virgin Atlantic, in collaboration with the University of Chicago and the London School of Economics, demonstrated how behavioural nudges could improve environmental outcomes. By providing pilots with individual performance reports and personalised fuel-efficiency targets, the airline reduced CO2 emissions by 21 million kilograms and saved 6.8 million kilograms of fuel (Purcell & Nikolova, 2021). These cases underscore the efficacy of nudges in subtly influencing behaviour towards socially and environmentally desirable outcomes without restricting individual freedom of choice.

Furthermore, behavioural nudges have been widely examined across diverse tourism contexts to assess their effectiveness in shaping tourists' decisions and preferences toward more sustainable, locally beneficial choices. For instance, the “Medimurje daje više” campaign in Croatia successfully employed coupons as a nudging tool, resulting in a notable increase in domestic tourist footfall, overnight stays, visitor spending, and employment (Haluga et al., 2021). Similarly, another study by Au et al. (2024) revealed that simple visual cues, such as using blue and green colours for electric vehicles, significantly influenced tourists' rental choices towards environmentally friendly transport options.

In India, initiatives such as the Garbage Café in Chhattisgarh incentivize waste collection by exchanging plastic for meals, a behavioural intervention aligning environmental and social goals (Sawant & Fulwari, 2020). Additionally, Sanguinetti and Amenta (2022) demonstrated the effectiveness of informational nudges in a digital flight booking interface, where displaying carbon emissions data encouraged users to choose lower-emission flights, even at higher costs. Furthermore, in the Philippines, a “Plastic for Rice” scheme similarly nudges communities toward environmentally responsible actions. Similarly, in mountain biking tourism, descriptive norm nudges increased voluntary donations for trail maintenance without triggering backfire effects, highlighting the potential of social norm-based interventions in hedonic leisure contexts (Nowak et al., 2024).

Collectively, these empirical studies and practical interventions provide robust evidence that behavioural nudges are effective in influencing tourist consumption patterns while safeguarding their freedom of choice. This opens a promising avenue for tourism authorities and other stakeholders to adopt nudging as a strategic tool to reduce economic leakage and enhance local economic retention.

**Proposition 3:** *Behavioural nudges have demonstrated effectiveness in shaping tourists' sustainable and pro-local consumption choices across diverse tourism contexts, offering considerable potential to mitigate economic leakages by redirecting demand toward locally produced goods and services.*

## 3. Methodological approach

### 3.1. Research design

This study adopts a qualitative, exploratory and literature-based conceptual research design to investigate the role of behavioural nudging in mitigating economic leakages in tourism destinations. Given the absence of prior research explicitly integrating behavioural interventions with economic leakages, an exploratory approach is adopted, prioritizing theory development as a foundation for empirical validation (Stebbins, 2001; Yin, 2016). This methodology aligns with conceptual studies that synthesize existing knowledge to propose theoretical frameworks, particularly in under-researched areas. Such an approach is appropriate when investigating a novel phenomenon that lacks a well-established theoretical foundation (Jaakkola, 2020; Torraco, 2016).

Following the principles of qualitative secondary research (Webster & Watson, 2002), this study systematically reviews and integrates multidisciplinary insights from behavioural economics, tourism sustainability and economic resilience to develop a conceptual framework. This proposed framework serves as a structured foundation for future empirical validation, enabling scholars to derive constructs, formulate hypotheses, and assess the effectiveness of nudging interventions through experimental or field-based methodologies.

### 3.2. Data collection

This study primarily draws on secondary data sources, including an extensive literature review and high-impact peer-reviewed journals, industry reports, and policy documents published by international organizations,

including the Ministry of Tourism, India, UNCTAD, and WTTC. Academic sources are retrieved from Scopus and Google Scholar, focusing on conceptual and empirical studies that explore economic leakages and behavioural nudging in tourism. The review followed a systematic approach defined by Tranfield et al. (2003):

- Defining the scope: Identifying relevant studies that investigate economic leakages and behavioural nudging in tourism.
- Screening and Selection: The studies were filtered based on relevance, quality and methodological robustness, ensuring the inclusion of high-impact journal articles and authoritative reports.
- Data extraction and Synthesis: Categorizing the literature and its key findings to construct a coherent theoretical narrative, integrating multidisciplinary analysis.

This structured approach enhances the credibility, validity and replicability of the literature synthesis, ensuring a comprehensive and globally relevant analysis.

### 3.3. Data analysis

The study employs critical content analysis to systematically examine, synthesize and interpret the existing literature (Bowen, 2009). A thematic synthesis approach (Braun & Clarke, 2006) is adopted to identify patterns, underlying theoretical constructs and conceptual relationships between behavioural nudging and economic leakage mitigation.

The critical analysis consists of three structured steps:

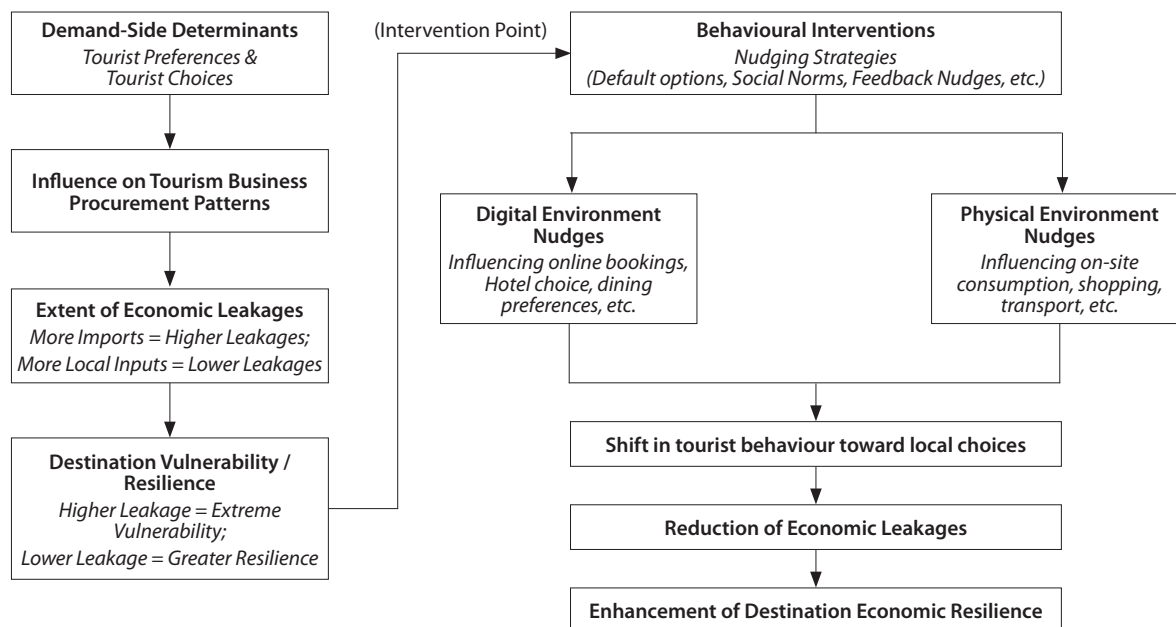
- Step 1: Thematic Classification: The existing literature is categorized into key dimensions, including “Demand-side economic leakages”, “Economic leakages and destination resilience”, and “behavioural Nudging and Economic leakages”, to establish conceptual relationships.
- Step 2: Comparative Analysis: Empirical and conceptual findings from multiple studies are critically compared to identify convergent and divergent perspectives, ensuring a nuanced understanding of the phenomenon.
- Step 3: Conceptual Framework Development: Based on the synthesis of existing research, theoretical propositions are formulated to outline how behavioural nudging can be integrated into economic leakage mitigation strategies.

This methodological approach ensures theoretical rigour, coherence and conceptual clarity, providing a structured basis for advancing research on economic sustainability and resilience in tourism destinations. The study's findings offer both theoretical and practical implications for policymakers and tourism stakeholders, emphasising the potential of behavioural nudging as a strategic intervention to mitigate economic leakages.

## 4. Conceptual framework

The preceding analysis underscores the pivotal role of tourists' consumption choices in shaping economic leakages within tourism destinations. While extant scholarship has concentrated mainly on supply-side interventions such as promoting local products and cultural experiences, this study shifts attention to demand-side interventions, particularly through the lens of behavioural nudging. Drawing upon insights from behavioural economics and the literature on economic leakages, the proposed conceptual framework illustrates how nudging techniques can reduce import dependency and enhance local economic retention. This framework serves as a foundation for future empirical validation and the development of targeted policy interventions.

**Figure 1**  
Core conceptual framework



Source: Authors' own.

This framework delineates how tourist preferences shape the procurement patterns of tourism businesses, thereby influencing the extent of economic leakage within tourism destinations. When tourists prefer imported goods and services, tourism establishments cater to these demands, leading to higher economic leakage. Alternatively, increased preferences toward local products encourage the use of local inputs, thereby mitigating leakages.

To address this, the framework introduces a critical intervention point where behavioural nudges can be deployed to steer tourists toward local choices. These nudging strategies operate across both digital and online environments (e.g., influencing online booking behaviours, hotel selections, dining choices, etc.) and physical environments (e.g., influencing on-site shopping, transportation and other consumption). By integrating these strategies, destinations can foster a shift in tourist behavior, reducing economic leakage and enhancing their economic resilience.

This conceptualisation advances the discourse on tourism economic sustainability by integrating demand-side behavioural interventions to address economic leakages, moving beyond the traditional supply-side focus in tourism and economic sustainability research. It offers a novel approach for policymakers and tourism stakeholders seeking to promote local economic retention and build more resilient tourism systems.

## 5. Discussion and inferences

Existing literature has extensively examined economic leakages in tourism, both theoretically and empirically. However, the majority of these studies have predominantly adopted a supply-side perspective, attributing leakages to local supply deficiencies such as inferior quality, insufficient quantities, higher prices, storage limitations, unavailability, and many more (Torres, 2003). The prevailing academic view is that tourism establishments rely on external economies to offset these supply-side inadequacies, leading to substantial outflows of tourism revenue.

While supply-side constraints undoubtedly play a critical role in driving leakages, this narrative presents only a partial view. It overlooks a critical dimension, i.e., demand-side determinants contributing to leakages. Supply limitations do not solely dictate the procurement decisions of tourism establishments, but are also strongly influenced by tourist preferences and consumption patterns (Torres, 2002). If international tourists predominantly demand imported goods and services, hospitality establishments cater to their needs and preferences, aligning their procurement strategies accordingly and reinforcing import dependency. This indicates that addressing economic leakages exclusively from a supply-side perspective is a unidimensional and incomplete approach.

With the rise of responsible tourism, sustainability-conscious travellers, and shifting consumer preferences, the potential for demand-side interventions is greater than ever. If tourism authorities and other stakeholders can effectively influence tourist consumption behaviours, economic leakages can be mitigated at the source, reducing reliance on restrictive supply-side measures. When tourists actively seek localised products, services, and experiences, businesses are naturally compelled to adapt their procurement strategies to meet this demand. Consequently, procurement patterns shift toward localised sourcing, making supply-side constraints less relevant. Furthermore, traditional approaches to reducing import dependency, such as import restrictions, tariff hikes, and protectionist policies, often lead to unfavourable consequences, including retaliatory trade actions, increased operational costs, and inflationary pressures. Instead of artificially inflating import prices to make them uncompetitive, behavioural nudging offers a more subtle and sustainable alternative.

By strategically embedding nudging interventions in both online and offline tourism environments, authorities can subtly steer tourists toward local, sustainable choices without imposing restrictive policies. As a result, demand for locally sourced alternatives increases, further compelling businesses to adapt their offerings and progressively reduce their dependence on imports. This demand-driven transition fosters a self-sufficient, economically resilient, and sustainable tourism ecosystem, thus mitigating economic leakages and enhancing economic retention, particularly in import-dependent destinations such as island economies and remote tourism hubs.

### 5.1. Nudging as a strategic tool to promote local consumption and mitigate leakages

Having established the feasibility of behavioural nudges in addressing economic leakages, it is essential to examine their practical influence when strategically implemented across different tourism environments.

Tourists often make economic decisions in two distinct environments, namely the online or digital environment, encompassing activities such as booking flights and accommodations, searching for dining and shopping options, planning itineraries, etc., and the physical environment at the destination, where they make various real-time choices related to food, shopping, transportation, and other activities (Mirsch et al., 2019; Schneider et al., 2018). Prior research has consistently demonstrated the effectiveness of various nudging interventions in influencing tourist behaviours across both online and physical destination environments, particularly in encouraging pro-environmental and sustainable behaviours (Anderson, 2019; Bertheim, 2018). For example, an empirical study by Sanguinetti and Amenta (2022) has investigated the effectiveness of informational nudges in a digital flight booking platform. The study adopted an experimental design to examine whether displaying information on carbon emissions during flight searches could influence consumer behaviour. Using a simulated flight booking platform, the study found that participants were significantly more likely to choose lower-emission flights when emissions data were clearly displayed, even when those options had additional costs or less convenience. The study revealed a stronger willingness of tourists to pay for carbon reduction and demonstrated how simple, well-placed informational nudges can trigger pro-environmental intentions and shift travel behaviour.

Similarly, another experimental study conducted in a field environment at a mountain biking destination in Sweden to assess the impact of descriptive norm-based nudges on tourists' willingness to donate toward bike trail maintenance has revealed that increasing the frequency of norm-nudge signage not only improved compliance but also increased average donations per tourist, without generating any backfire effect. This evidence underscores how subtle, well-designed nudges activate latent normative goals even in hedonic leisure settings, thereby encouraging more sustainable and locally beneficial behaviours (Nowak et al., 2024). Additionally, another dual-experimental study by Au et al. (2024) in China and Australia revealed that simple visual cues, specifically the use of green and blue vehicle colours, significantly influenced tourists' perceptions of eco-friendliness and boosted electric vehicle rentals. This heuristic-based intervention shortened decision times and increased uptake, highlighting how even minor visual design features can effectively nudge sustainable behaviour in tourism mobility.

These findings highlight the practical effectiveness of behavioural nudges in shaping tourists' decisions towards more sustainable choices and reinforce the potential of behaviourally informed design to reduce externalities in tourism consumption. Building on their proven efficacy in promoting environmentally responsible behaviours, nudging strategies can be strategically deployed across both digital and physical environments to influence economic behaviours, thereby guiding tourists towards local consumption choices that minimize leakages.

Existing literature on economic leakages underscores that when both tourists and tourism businesses prioritize local consumption, such as choosing local cuisines, purchasing indigenous handicrafts and souvenirs, purchasing local products and services, supporting locally owned and operated accommodations, restaurants, transport operators, etc., a substantial portion of tourism revenue is retained within the local economy (Pratt et al., 2018). This localized consumption not only enhances the economic benefits accruing to host communities but also significantly reduces dependence on imported goods and services (Supradist, 2004; Sandbrook, 2010). Therefore, strategically designed nudging interventions that guide tourist preferences toward local options hold considerable potential to redirect tourism revenue into the local economy, thereby mitigating substantial economic leakage. Furthermore, by subtly influencing tourist decision-making, behavioural nudges offer a viable pathway for tourism destinations to enhance economic sustainability and build long-term economic resilience in tourism-dependent economies.

The implementation of behavioural nudges to promote local consumption can yield dual economic impacts within tourism destinations. Firstly, as tourists increasingly prefer local products and services, such as local food dishes or authentic cuisines, indigenous handicrafts, locally owned accommodations, authentic souvenirs, etc., the demand for these offerings increases. This heightened demand stimulates demand for local ingredients, suppliers, chefs, artisans, and guides, integrating them into tourism value chains. For instance, an increase in demand for regional cuisine elevates the need for locally grown ingredients, benefitting both agricultural producers and local culinary professionals. Similarly, increased appreciation for indigenous crafts fosters greater economic opportunities for local artisans and craftsmen. These patterns reflect the "Change in Demand" (Phase 1) outlined in India's Mission for Life initiative, where individual-level behavioural shifts are seen as the first step toward achieving the Sustainable Development goals. As a result, a substantial portion of tourism revenue is retained within the local economy, delivering widespread economic benefits to host communities and fostering a more inclusive and sustainable tourism development model within destinations.

Secondly, when tourists increasingly prefer local products and services, tourism businesses are compelled to restructure their offerings, progressively shifting away from import-dependent operations. This transition necessitates implementing locally sourced alternatives, such as incorporating locally grown ingredients in restaurants and employing local chefs to prepare authentic cuisines, incorporating local artwork and handicrafts for decoration in resorts and hotels. Designing local accommodation spaces that reflect the destination's

cultural heritage and traditional architecture, prioritising local employment, and ensuring that service staff, tour guides, and other personnel embody the region's cultural and historical richness.

As tourism businesses progressively prioritise locally sourced inputs in their operations, their reliance on external supply chains diminishes, thereby substantially reducing import-related economic leakages within destinations. As a result, a substantial share of tourism revenue, which would otherwise flow out of the local economy through import payments, is retained, thereby amplifying its multiplier effect. This economic retention fosters several positive economic externalities, such as increased employment and entrepreneurial opportunities, greater local spending, a larger multiplier effect, and higher capital reinvestment in infrastructure and community development initiatives. Over time, this reduced reliance on global supply chains and the fostering of localisation within tourism value chains not only strengthen tourism value chains but also equip destinations with greater resilience to external disruptions, such as economic downturns, supply chain crises, and geopolitical instability.

These interconnected developments, ranging from shifts in tourist consumption patterns to supply chain restructuring and finally enhanced local economic retention, reflect the three-phase framework outlined in the Government of India's Mission for Life initiative. The mission mainly highlights sustainability transitions beginning with behavioural change at the individual level (Phase 1: Change in Demand), followed by adaptive responses from businesses and industries (Phase 2: Change in Supply), and finally enabling long-term structural and policy transformations (Phase 3: Change in Policy). Similarly, the Travel for Life component of the Mission for Life initiative operationalises the initiative's goals in the tourism context by encouraging localised consumption, supporting community enterprises, and promoting equitable economic distribution. Thus, the conceptual and empirical insights presented in this study not only reinforce theoretical propositions around nudging and economic leakage mitigation, but also closely align with nationally endorsed sustainability frameworks aimed at promoting inclusive, resilient and economically sustainable tourism. Therefore, nudging tourists toward local preferences and choices emerges not only as a leakage mitigation strategy but as a transformative step toward building long-term economic sustainability and resilience in tourism-dependent destinations.

## 5.2. Implementation challenges

The strategic implementation of behavioural nudges to mitigate economic leakages in tourism presents significant opportunities, yet its success depends on addressing structural and institutional challenges through well-devised solutions. Resistance from import-dependent stakeholders and hospitality enterprises adhering to global quality benchmarks necessitates targeted policy interventions, financial incentives, and phased adaptation strategies to facilitate a seamless transition to localized sourcing without compromising service excellence. Strengthening local supply chains through infrastructural enhancements, financial support, and skill development is crucial to aligning local production with the evolving demands of the tourism sector. Additionally, empowering digital travel platforms through regulatory frameworks and strategic partnerships can promote local-first tourism models, countering the dominance of multinational hospitality conglomerates. A structured and incremental transition can systematically integrate local inputs, fostering a resilient, self-sustaining, and economically inclusive tourism ecosystem.

Additionally, a strategic transition toward localised tourism economies is essential to balance adaptation with stability, allowing businesses, supply chains, and production capacities to evolve in tandem with demand. As destinations progressively integrate local goods and services, enterprises can restructure operations with minimal disruption, enhancing economic resilience. This gradual transition fosters a sustainable tourism model where revenue retention strengthens local economies, benefiting businesses, communities, and visitors alike. Ultimately, a well-orchestrated localization strategy not only ensures cost-effective sourcing and

authentic experiences but also cultivates long-term economic sustainability, reinforcing the destination's competitiveness and self-reliance.

## 6. Implications

### 6.1. Theoretical implications

This study offers significant theoretical contributions to academia and the research community.

Following an in-depth literature synthesis, this study formulates three theoretical propositions. First, tourist behaviour and preferences substantially shape demand-driven economic leakages in destinations. Second, persistent tourism leakages render destinations extremely vulnerable to external shocks, and mitigating these leakages strengthens long-term economic resilience. Third, behavioural nudging has significant potential to reduce import dependency and foster sustainable, locally embedded tourism economies. Together, these propositions offer a structured foundation for future empirical validation and theoretical advancement.

Further, the existing literature on economic leakages in tourism has predominantly focused on supply-side constraints, such as the price, quality, availability, and consistency of local goods and services, while largely overlooking demand-side determinants. This study introduces a novel theoretical perspective by positioning tourist behaviour as a pivotal driver of economic leakages. Integrating behavioural economics into the discourse shifts the analytical emphasis toward the cognitive and psychological dimensions of tourist decision-making. This demand-side orientation addresses a critical gap in the literature and establishes a behavioural framework for holistically conceptualising leakage mitigation. In doing so, the study broadens the theoretical scope of tourism economics. It lays the groundwork for future research to empirically assess the effectiveness of behavioural interventions in promoting local economic retention.

The existing literature on behavioural nudges in tourism has predominantly focused on influencing tourists to adopt pro-environmental behaviour to foster sustainability. For instance, a systematic literature review by Souza-Neto et al. (2023) identified key pro-environmental behaviours essential to sustainability, including towel and bed linen reuse, refillable toiletries, ethical dining, and energy and water conservation. Additional themes such as minimising paper use, voluntary carbon offsetting, reducing carbon footprints, and engaging in the sharing economy across various tourism-related sectors were also highlighted. These interventions not only conserve resources but also serve as behavioural nudges that cultivate a broader culture of sustainable consumption and environmental responsibility. In contrast, this study introduces a novel approach by advocating the adoption of *pro-local behaviour*, or *local economic behaviour*, as a pathway to achieving economic sustainability in destinations. This reorientation extends the conventional sustainability discourse beyond environmental concerns, underscoring the importance of economic resilience and the well-being of host communities. By encouraging tourists to engage with local goods, services, and experiences, this study advances a more holistic framework for sustainable tourism, one that foregrounds local economic empowerment as integral to the sustainability paradigm.

Additionally, this conceptual contribution lays the groundwork for future research across multidisciplinary fields, including tourism economics, behavioural economics and consumer behaviour in tourism. By advancing a conceptual hypothesis on economic sustainability, this study invites empirical and experimental validation, thereby opening new research avenues. By bridging these disciplines, this study enriches academic discourse and encourages the development of innovative theoretical frameworks that deepen understanding of economic sustainability in tourism contexts.

Finally, this study introduces a novel perspective by framing economic resilience as the outcome of reducing dependence on imported inputs and advancing a locally embedded economic approach. The existing literature

on economic leakages and destination resilience has rarely examined the convergence of leakage mitigation strategies to achieve long-term financial resilience. By addressing this gap, this study provides a foundation for future research to explore how mitigating leakages can strengthen destinations' resilience against external shocks, thereby fostering sustainable growth and self-reliance in the long run.

## 6.2. Practical implications

This study offers significant practical implications to policymakers and other stakeholders of tourism destinations.

Policymakers must extend the application of behavioural interventions beyond travel booking platforms into broader areas such as tourism planning, destination governance, and ensuring the equitable distribution of tourism benefits across both large-scale and small-scale establishments. A compelling example of such a comprehensive approach is the Government of India's "*Travel for Life*" initiative, which integrates nudging mechanisms across various dimensions of the tourism ecosystem. In the *Demand-side phase*, tourists are encouraged to adopt localised consumption behaviours, such as staying in locally owned accommodations, spending at least 5% of total expenditure on local products and souvenirs, consuming seasonal and regionally available foods, and supporting community-based enterprises. In the *Supply-side phase*, tourism businesses are nudged to prioritise local procurement of goods and services, incorporate locally made products and furnishings and promote local employment across value chains. Finally, in the *Policy response phase*, the initiative aims to structurally embed these behaviours through awareness campaigns, guidelines, and public-private partnerships, aligning national sustainability goals with destination-level practices.

Additionally, tourism authorities can also adopt behavioural design principles from other policy domains. For example, the United Kingdom's pension auto-enrolment scheme has significantly increased participation by making enrolment the default option and requiring individuals to opt out actively (Sawant & Fulwari, 2020). A similar mechanism can be applied in the tourism context by configuring destination websites and OTAs to feature local accommodations, restaurants, and cultural experiences as default options within travel packages. This design would subtly guide tourists toward more sustainable, locally embedded consumption choices unless they explicitly opt for alternatives. Furthermore, tourism authorities can issue soft policy directives that encourage online travel platforms to include a greater share of verified local enterprises in their offerings. These combined strategies, rooted in both behavioural and systemic design, can collectively nudge tourists and businesses toward choices that retain tourism revenue within local economies, mitigate economic leakages and contribute significantly to the destinations' long-term sustainability.

This study offers valuable implications for tourism establishments, particularly online travel agents (OTAs), helping mitigate economic leakage by subtly influencing tourists toward local, authentic options. Informational nudges, such as highlighting locally owned accommodations and explaining their positive impact on the local economy, can be effective, as demonstrated by Sanguinetti and Amenta (2022), who found that displaying carbon emission information on flight booking platforms significantly influenced tourists to choose lower-emission flights. Similarly, social norm nudges, such as stating "*The majority of international tourists prefer authentic local stays and experiences for enriching cultural immersion*", can largely influence behaviour, as supported by Nowak et al.'s (2024) field experiment in Sweden, where visible norm messages increased tourist donations for bike trail maintenance. Drawing on these empirical insights, this study proposes that OTAs integrate such nudges to steer tourists toward locally rooted options and reduce import dependency in tourism destinations.

Furthermore, building upon the proven efficacy of default nudges in influencing consumer behaviour across diverse tourism contexts, such as EV rentals (Au et al., 2024), flight choices (Sanguinetti & Amenta, 2022),

and sustainable food choices (Sharma et al., 2024), OTAs can embed “default nudges” with travel packages by including local accommodations, restaurants, attractions, activities, and experiences as pre-selected options while still offering tourists the freedom to opt out if they do not want to. Even if a moderate proportion of total tourists retain these default choices, the economic impact on the destination's economy would be substantial. Another innovative approach could be to add a new filter option labelled “*Locally owned or Locally Managed*” to online booking platforms. When selected, this filter would display hotels, homestays, resorts, hostels, restaurants, cafes, etc., that are either owned or operated by local communities. This not only promotes local businesses but also appeals to environmentally conscious and responsible travellers seeking authentic and sustainable tourism experiences. As Online Travel Agencies (OTAs) increasingly emerge as significant channels of economic leakage, a recent study in Norway found that 2.1% of total hotel revenue is lost through commissions to global OTAs (Gössling et al., 2025). It is imperative to embed nudging interventions within these interfaces. Encouraging tourists toward locally owned listings and experiences on OTAs can serve as a behavioural counterbalance to such leakages, fostering local economic retention through demand-side interventions.

Small and locally owned accommodations, restaurants, and transport operators can collectively form associations to adopt behavioural intervention strategies that attract more tourists to their businesses. One effective approach is for locally owned small hotels and homestays to obtain Locally Owned Certification from tourism authorities, thereby enhancing their visibility and credibility on OTAs and booking platforms. This certification would help such businesses distinguish themselves from foreign-owned establishments, making them more appealing to tourists seeking local experiences. A relevant example of such collaborative behavioural intervention is the “*Tiaki Promise*” in New Zealand, a nationwide initiative developed jointly by tourism authorities, local communities and private stakeholders. It acts as a collective nudge, encouraging tourists to adopt responsible, sustainable and respectful behaviours during their visit. This model demonstrates how multi-stakeholder coordination can effectively shape tourist behaviour while amplifying the visibility and value of locally grounded experiences.

Additionally, tourism establishments can offer “*Combo Packages*” that bundle accommodations with meals from locally operated restaurants specialising in authentic regional cuisine. This strategy not only promotes local businesses but also provides tourists with culturally immersive experiences. For example, Torres (2002, 2003) has identified that tourist preferences strongly shape procurement behaviour, and curated local food bundles can strategically realign demand by nudging tourists toward authentic culinary experiences. Such bundles simplify decision-making and increase the appeal of local offerings by packaging them as convenient, complete experiences. Moreover, on-ground “physical nudges” can be effectively employed by local restaurants and eateries to influence tourists’ food choices. For instance, placing authentic local dishes at the forefront of menus, using eye-level visuals, or highlighting dishes with tags like “local speciality” can subtly guide tourists to choose these options over international dishes. These design-based interventions have been shown to significantly increase the visibility and appeal of local cuisines.

National airlines can also play a significant role in enhancing tourism revenue within the local economy. By partnering with online travel agents (OTAs), tour operators and travel agents, national and destination-owned carriers can be positioned as the default flight option within travel packages. While tourists would retain the freedom to opt out, empirical evidence on default nudges suggests that many individuals may stick with default options. Consequently, this strategy may lead to a substantial increase in bookings for the national or destination-owned airlines. The enhanced patronage would contribute to greater revenue retention in the destination's economy, which, in turn, can support local investments, employment creation, and overall economic development in the region.

## 7. Conclusion

This study presents a novel examination of demand-side determinants, particularly tourists' preferences and decision-making processes, as a critical yet underexplored dimension for mitigating economic leakages within tourism destinations. By integrating theories and concepts from behavioural economics, this research addresses the pervasive issue of tourism leakage. It underscores the critical role of behavioural nudges in shaping tourists' decisions across digital and physical tourism environments. As posited by Sharma et al. (2024), behavioural interventions hold significant potential to engender long-term, sustainable shifts in tourism and hospitality. However, their long-term efficacy requires grounding in robust theoretical frameworks that critically examine "how" and "why" behaviour change can be sustained over time.

In this regard, this study effectively proposed a robust conceptual framework that underscores the effectiveness of behavioural interventions in subtly guiding tourists toward local alternatives, such as accommodations, restaurants, cuisines, and handicrafts, without restricting their freedom of choice. This strategic shift increases demand for locally sourced goods and services, including raw materials, ingredients, skilled labour, and artisanal souvenirs, thereby fostering greater integration of host communities into tourism supply chains. As a result, tourism businesses are incentivized to prioritize local inputs, leading to a redistribution of tourism expenditure within the local economy, reduced reliance on imported goods and services and enhanced contributions of tourism revenue to host communities.

Furthermore, the study highlights leakage mitigation as a strategic pathway to strengthen destinations' economic resilience, enabling them to withstand external shocks, including geopolitical instability, economic crises, and global supply chain disruptions. The research also identifies implementation challenges associated with behavioural interventions, such as stakeholder resistance and tourists' ingrained preferences. It proposes strategies to address these barriers effectively through tailored nudging techniques and stakeholder collaboration.

In addition to the practical implications for tourism policymakers, tourism businesses, and other stakeholders, this study offers critical theoretical implications for the interdisciplinary fields of tourism economics, behavioural economics, and sustainability. By interlinking economic leakages, tourist behaviour, economic resilience and behavioural nudging, this study demonstrates the importance of a multidisciplinary approach to addressing critical issues in tourism. It encourages future researchers from diverse academic disciplines and practitioners to collaborate in developing innovative solutions, recognising the limitations of traditional strategies in resolving economic, environmental, cultural, and political challenges. While acknowledging its limitations, this research lays a foundation for future studies, paving the way for more comprehensive and impactful interventions in tourism economics and sustainability.

## 8. Limitations

While this research offers valuable and novel insights, several limitations must be acknowledged. Notably, the study lacks experimental validation, as no real-time empirical research has been conducted to substantiate the findings. Additionally, the findings have not undergone systematic investigation or statistical validation, which may affect the robustness and generalizability of the results.

## 9. Future research

To address the identified gaps, future research should prioritise experimental designs to investigate the effectiveness of various nudging strategies, such as default options, social norms, and other behavioural interventions, in shaping tourist preferences and choices toward local products and services. The findings of such experiments must undergo rigorous statistical validation to ensure reliability, robustness, and global

applicability across diverse tourism contexts. The proposed methodology and experimental design are detailed in the supplementary file, with the experimental design adopted from the standard experimental framework proposed by Schneider et al. (2018). Additionally, future studies must focus on destination-specific nudging strategies by analysing the characteristics of source markets, including tourists' preferences and choices. This approach would facilitate the design of tailored interventions that enhance the relevance and effectiveness of nudges across different cultural and geographical settings.

Another avenue for future research involves differentiating between short-term and long-term behavioural approaches. Short-term strategies may target immediate behavioural shifts to mitigate adverse tourism impacts, such as reducing single-use plastic, promoting towel reuse, minimizing pollution, and encouraging CO<sub>2</sub>-efficient air travel. In contrast, long-term approaches could focus on achieving economic sustainability and resilience within destinations. Further research could also delve into a comparative analysis of nudging strategies targeting foreign and domestic tourists across diverse demographics, cultural contexts, nationalities and many more. Such investigations would unravel behavioural patterns unique to each group, enabling tourism authorities to formulate customized strategies that effectively guide tourists toward local options, thereby maximizing economic benefits for host communities. Finally, longitudinal studies are recommended to assess the long-term effectiveness of nudging interventions. These studies would provide valuable insights into evolving behavioural patterns and trends among tourists over extended periods.

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