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PREFACE

Dear Readers,

I am pleased to present this special edition of the journal “Eunomia – Sustainable Development”. The initiative to create this issue stems from the Swiss Institute of Management and Sciences (SIMS) seeking a fitting platform to showcase the research achievements of its faculty and doctoral students. As the Chancellor of SIMS – and having previously spent many years at the State Academy of Applied Sciences in Racibórz – I was delighted to confidently recommend “Eunomia” as a reliable and supportive publisher. Today, that initiative has come to fruition; in addition to articles by SIMS academics, this issue features contributions from invited Guests – an approach that reflects the core values guiding my institution: openness and an interest in diverse perspectives.

The Swiss Institute of Management and Science is a private higher education institution based in Zug, Switzerland. It is deeply committed to making the opportunity to study in Switzerland accessible to students from Asia and beyond. The institution champions the concept of "flat education" – a study model based on up-to-date, practical curricula that allows students to learn across various global campuses as well as online. Students select their field of study and complete coursework partly online and partly at one of several partner institutions; thanks to credit transfer agreements, they can ultimately earn a double degree. Our partner institutions are located in countries such as Malaysia, Sri Lanka, Vietnam, France, Portugal, and Poland. They also conduct research and are sharing the fruits of it today. Beyond our academic partnerships, they actively contribute to research and are here today to share the valuable outcomes of their work.

In this issue of “Eunomia”, we present eleven articles grouped by theme. Seven of the Authors are affiliated with SIMS (a fact noted alongside their primary affiliation).

The *Sociocultural and Socioeconomic Analyses* section contains five articles. Pal Tapas (SIMS) from Raiganj University in West Bengal, India, opens the issue with the article *Hijras in Gender Geography: A Study on Identical Lucidity of North Bengal, India*. The Author examines the structural marginalization of Hijras – representatives of a historically recognized third gender – drawing on, among other sources, over 300 interviews with members of this community. Next, Ly Le, a SIMS doctoral student from Vietnam, presents a paper titled *“Failure Is a Moral Diagnosis”: How Vietnamese IELTS Applicants Define, Narrate, and Internalise Failure Across Age, Gender, Geography, and English Proficiency*. Analyzing approximately 2,000 registration forms, she found that failure is frequently internalized as the respondent's own responsibility – a tendency most pronounced among women. Dr hab. Danuta Kaźmierczak, Prof. UKEN,

publishes an article resulting from a research internship she completed at SIMS in May 2026, titled *A Business Hub as a Students' Career Starting Point*. The case study on Zug presents the results of an analysis of the city – recognized in Switzerland as a startup hub and a tax haven – from the perspective of business students considering professional internships. The final article in this section is titled *An Analysis of Thai Product Use and Impacts of Nationalism and the Boycott Movement on Continuous Intention to Use Thai Products among University Students*. Its Author is Narith Por, a SIMS doctoral student. He analyzes the consumption choices of over 300 Cambodian students – choices driven by patriotism in the wake of the border conflict between Cambodia and Thailand in July 2025.

The second thematic area of the publication is *New Tools and Services*. Three papers are presented here. The first, authored by Irina Di Ruocco from the University of Trieste (Italy), is titled *Why Invest in Parcel Lockers? An Economic Assessment Across Italian Metropolitan Cities*. This study proposes a method for assessing the investment potential of parcel lockers across 14 Italian metropolitan areas. Next, Vu Thanh Tung, Vu Thi Huong Giang both from SIMS (Vietnam), presents *Analyzing Some Successful AI Models for Stock Investment Today*, which examines AI models successfully employed in securities investment. This section concludes with the paper *Auditory Cues and Sustainable Consumption: a Scoping Review*. Its author, Marco Antonio Barišić – a master's student at Juraj Dobrila University of Pula (Croatia) – provides an interesting literature review. Increasingly, auditory cues – such as playing nature sounds in the health food aisle – are being used to encourage consumers to adopt sustainable consumption habits.

The third section focuses on tourism in the post-COVID era. Vo Thuy Nhat Minh, a SIMS PhD student from Vietnam, presents the paper *The Economic Resilience of Domestic Tourism Demand in Post-Pandemic Vietnam: a Structural Equation Modelling Approach*. He surveyed nearly 500 Vietnamese tourists in the period immediately following the pandemic. The findings suggest that domestic tourism can serve as a "resilience mechanism" during times of crisis. Meanwhile, Giuseppe Catenazzo, Magali Dubosson, Emmanuel Fragnière, and Denis Rochat – representing several Swiss universities – discuss post-COVID tourist behavior in French-speaking Switzerland in their article *Shifting Priorities in Post-COVID Tourism: Behavioural Dynamics in French-speaking Switzerland*, basing their findings on interviews with over 50 respondents.

The final thematic area of our publication is titled *State Autonomy and Resilience*. We present two texts here. The first is *Digital Autonomy through Leverage: Vietnam and the Logic of Power in Dependent Digital Systems* by Nguyen Lan Huong and Nguyen Thi Thanh Huong from IEAS – Vietnam's partner of SIMS. The authors argue that despite lacking control over key technologies, Vietnam has developed various forms of leverage that it can utilize to achieve autonomy in the digital sphere. The publication in this section concludes with an article titled *Emerging Risks Getting Real: Assessment Approaches and the Governance Framework* by Stavros Pantos, a doctoral candidate at the University of Reading in the UK. This text examines the design and implementation of a framework for managing emerging risks.

This issue concludes with an interview with the Rector of the State University of Applied Sciences (ANS) in Racibórz, Dr. Paweł Strózik, University Professor, regarding his latest book. We thank the Rector for the interview. For my part, I would also like to express my gratitude for the signing of the cooperation agreement between our institutions, which has enabled us to carry out this publishing project.

As both an editor and the University Chancellor, I am delighted to see this publication come to fruition. This sentiment is shared by the university boards and, I believe, by the academics themselves – our esteemed Authors. This is an achievement for our entire SIMS community. I thank the Authors for the effort put into preparing their articles and everyone involved for their cooperation. I also greatly appreciate our Guest Authors, whom I was able to recruit through our partner scientific society, SPARK. Thank you for your trust and commitment (some of you also assisted as reviewers) and for being with us. I would also like to express my sincere gratitude to the Editor-in-Chief, Piotr Mucha, and the journal's Scientific Board for this wonderful opportunity to publish a special issue of "Eunomia". I am especially grateful to the Editor-in-Chief for his openness, patience, and support at every stage of the publishing process. Your professionalism is invaluable. This is not our first collaboration, and I hope it will not be the last.

I wish the Readers an inspiring read and offer my sincere congratulations to the Authors and everyone involved in the creation of this publication; I hope you are satisfied with the final form of this special edition of "Eunomia".

Aleksandra Zając

PRZEDMOWA

Drodzy Czytelnicy,

Oddaję w Państwa ręce specjalnie wydanie czasopisma „Eunomia – Zrównoważony Rozwój – Sustainable Development". Inicjatywa powstania tego numeru wiąże się ze staraniem Swiss Institute of Management and Sciences (SIMS), żeby znaleźć godne miejsce dla prezentacji dokonań badawczych wykładowców i doktorantów uczelni. Było mi niezmiernie miło, że jako Kanclerz SIMS, a w przeszłości wieloletni pracownik Akademii Nauk Stosowanych w Raciborzu, mogłam z pełnym zaufaniem polecić „Eunomię" jako rzetelnego i życzliwego Wydawcę. Dziś inicjatywa ta się urzeczywistnia, a oprócz artykułów autorstwa akademików z SIMS, w niniejszym wydaniu odnajdziecie Państwo także kilka tekstów gości zaproszonych do współpracy, co jest bardzo w duchu wartości, którymi kieruje się moja uczelnia: otwartości i zainteresowania różnymi perspektywami.

Swiss Institute of Management and Science to prywatna uczelnia wyższa z siedzibą w Zug w Szwajcarii. Instytucja ta jest głęboko zaangażowana w to, by umożliwić studentom z Azji oraz innych regionów świata podjęcie nauki w Szwajcarii. Obecnie w Zug powstaje kampus uczelni, jednak oferta SIMS wykracza daleko poza to. Instytucja promuje koncepcję „flat education" – modelu opartego na aktualnych, praktycznych programach nauczania, który umożliwia studentom naukę zarówno w różnych kampusach na całym świecie, jak i w trybie online. Studenci wybierają kierunek i realizują zajęcia częściowo online, a częściowo w jednej z kilku uczelni partnerskich; dzięki porozumieniom o uznawaniu punktów mogą ostatecznie uzyskać podwójny dyplom. Nasze uczelnie partnerskie mają siedziby w różnych krajach, m.in. w Malezji, na Sri Lance, w Wietnamie, Francji, Portugalii oraz Polsce. Oprócz współpracy akademickiej, podmioty te aktywnie uczestniczą w pracach badawczych i są dziś z nami, aby podzielić się cennymi rezultatami swoich działań.

W niniejszy wydaniu „Eunomii" pomieściliśmy jedenaście artykułów, które pogrupowano tematycznie. Siedem Autorów jest związanych z SIMS (zaznaczam ten fakt obok podstawowej afiliacji Autora).

W sekcji *Analizy socjokulturalne i socjoekonomiczne* znajdą Państwo pięć artykułów. Pal Tapas (SIMS) z Uniwersytetu Raiganj w Zachodnim Bengalu w Indiach rozpoczyna publikację artykułem pod tytułem *Hijras in Gender Geography: A Study on Identical Lucidity of North Bengal, India*. Autor bada strukturalną marginalizację *Hiras*,

reprezentantów historycznie uznawanej trzeciej płci, posługując się m. in. ponad 300 wywiadami z reprezentantami tej społeczności. Następnie doktorantka SIMS z Wietnamu, Ly Le, prezentuje tekst zatytułowany *"Failure Is a Moral Diagnosis": How Vietnamese IELTS Applicants Define, Narrate, and Internalise Failure Across Age, Gender, Geography, and English Proficiency*. Mając dostęp do około 2000 formularzy rejestracyjnych zbadała, że wielokrotnie, a najdobitniej w przypadku kobiet, niepowodzenie jest internalizowane jako własna odpowiedzialność respondenta. Dr hab. Danuta Kaźmierczak, Prof. UKEN publikuje artykuł będący rezultatem stażu, który odbyła w maju 2026 roku w SIMS. *A Business Hub as a Students' Career Starting Point. A Case Study on Zug* przedstawia wyniki analiz miasta Zug, uznanej w Szwajcarii stolicy start-upów oraz raju podatkowego, z punktu widzenia studentów kierunków biznesowych myślących o stażu zawodowym. Ostatni artykuł w tej sekcji nosi tytuł *Analysis of Thai Product Use and Impacts of Nationalism and the Boycott Movement on Continuous Intention to Use Thai Products among university students*. Jego Autorem jest Narith Por, doktorant SIMS. Analizuje wybory konsumpcyjne kambodżańskich studentów (przeszło 300) podyktowane patriotyzmem w związku z konfliktem granicznym, który miał miejsce między Kambodżą a Tajlandią w lipcu 2025 roku.

Drugim obszar tematycznym publikacji jest *Nowe Narzędzia i Usługi*. Tutaj publikowane są trzy teksty. Pierwszy z nich, którego Autorką jest Irina Di Ruocco z Uniwersytetu w Trieście, we Włoszech, to *Why Invest in Parcel Lockers? An Economic Assessment Across Italian Metropolitan Cities*. Studium proponuje sposób oceny potencjału inwestycyjnego automatów paczkowych w 14 włoskich obszarach metropolitalnych. Następnie Vu Thanh Tung, Vu Thi Huong Giang, oboje związani z SIMS, prezentują *Analyzing Some Successful AI Models for Stock Investment Today*. W tym tekście zostały poddane analizie pewne modele AI używane z powodzeniem przy inwestycjach w papiery wartościowe. Tę sekcję tematyczną zamyka tekst: *Auditory Cues and Sustainable Consumption: a Scoping Review*. Jego Autor, Barišić Marco Antonio, magistrant Uniwersytetu Juraja Dobrili w Puli, w Chorwacji dostarcza ciekawego przeglądu literatury. Coraz częściej to sygnały dźwiękowe, jak chociażby włączenie nagrania przyrodniczego w alejce ze zdrową żywnością, są wykorzystywane, żeby przekonać klienta do zrównoważonej konsumpcji.

W trzeciej sekcji zajmujemy się turystyką doby post-Covid. Vo Thuy Nhat Minh, doktorant SIMS z Wietnamu, prezentuje tekst: *The Economic Resilience of Domestic Tourism Demand in Post-Pandemic Vietnam: a Structural Equation Modelling Approach*. Odpytuje niespełna 500 turystów z Wietnamu w czasie bezpośrednio po ustaniu pandemii. Okazuje się, że turystyka wewnętrzna może być traktowana jako mechanizm odpornościowy ("resilience mechanism") w czasie kryzysu. Z kolei Giuseppe Catenazzo, Magali Dubosson, Emmanuel Fragnière oraz Denis Rochat, reprezentujący kilka szwajcarskich uniwersytetów, w artykule pod tytułem *Shifting Priorities in Post-COVID Tourism: Behavioural Dynamics in French-speaking Switzerland* piszą o zachowaniach turystów post-Covid we francuskojęzycznej Szwajcarii na podstawie wywiadów przeprowadzonych z ponad 50 respondentami.

Ostatni obszar tematyczny naszej publikacji zatytułowany został *Autonomia i odporność państwa*. Publikujemy tutaj dwa teksty. Pierwszy z nich to *Digital Autonomy through Leverage: Vietnam and the Logic of Power in Dependent Digital Systems* autorstwa Nguyen Lan Huong i Nguyen Thi Thanh Huong z IEAS – wietnamskiego partnera SIMS. Autorzy argumentują, że mimo braku kontroli nad kluczowymi technologiami, Wietnam wypracował różne formy dźwigni i może ją wykorzystać do uzyskania autonomii w przestrzeni cyfrowej. Publikację w tej sekcji zamyka artykuł pod tytułem *Emerging Risks Getting Real: Assessment Approaches and the Governance Framework*, którego Autorem jest Stavros Pantos, doktorant uniwersytetu w Reading w Wielkiej Brytanii. Tekst pochyla się nad projektowaniem i wdrażaniem pewnych ram ("framework") umożliwiających zarządzanie pojawiającymi się ryzykami.

Na końcu numeru zamieszczony został wywiad z Jego Magnificencją Rektorem ANS w Raciborzu, Panem Dr. Pawłem Strózikiem, prof. Uczelni dotyczący jego najnowszej książki. Dziękujemy Panu Rektorowi za udzielenie wywiadu. Ja ze swojej strony chciałabym również podziękować za podpisanie Porozumienia o Współpracy między naszymi uczelniami, na którego podstawie możemy realizować obecne przedsięwzięcie wydawnicze.

Jako redaktor i jednocześnie Kanclerz uczelni niezmiernie się cieszę, że ta publikacja dochodzi do skutku. Podobne nastawienie podzielają ze mną właściciele uniwersytetu i, jak sądzę, sami akademicy – nasi zacni Autorzy. Jest to dokonanie dla całej naszej społeczności SIMS. Dziękuję Autorom za wysiłek włożony w przygotowanie artykułów a wszystkim zaangażowanym za współpracę. Bardzo doceniam także naszych gościnnych Autorów, których udało mi się pozyskać dzięki zaprzyjaźnionemu stowarzyszeniu naukowemu SPARK. Dziękuję Państwu za zaufanie, zaangażowanie (niektórzy z Państwa pomogli też jako recenzenci); za to, że jesteście z nami. Chciałam również bardzo podziękować Panu Redaktorowi Naczelnemu Piotrowi Mucha oraz Radzie Naukowej czasopisma za tę wspaniałą możliwość wydania specjalnego numeru „Eunomii". Panu Redaktorowi Naczelnemu dziękuję szczególnie za otwartość, cierpliwość i wsparcie na każdym etapie procesu wydawniczego. Pana profesjonalizm jest nie do przecenienia. To nie pierwsza nasza współpraca i mam nadzieję, że nie ostatnia.

Życzę Czytelnikom inspirującej lektury, a Autorom oraz osobom zaangażowanym w powstanie tej publikacji serdecznie gratuluję i mam nadzieję, że będziecie usatysfakcjonowani z ostatecznego kształtu naszego specjalnego wydania „Eunomii".

Aleksandra Zając

CHAPTER I

SOCIO-CULTURAL AND SOCIO-ECONOMIC ANALYSES

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HIJRAS IN GENDER GEOGRAPHY: A STUDY ON IDENTICAL LUCIDITY OF NORTH BENGAL, INDIA

Abstract: Hijras, a marginal term in gender geography, and that community are facing the sporadic identical crisis in most of the countries, like in India. This study explores the socio-spatial identities and marginalisation of Hijras, a historically recognised third gender community, within the gendered geography of 8 districts of North Bengal, India. Drawing on the framework of gendered geography and intersectionality, the study explores how cultural, spatial, and institutional forces shape the everyday experiences, self-identities, and social recognition of Hijras in this region. Using a mixed-methods approach that includes ethnographic fieldwork, spatial mapping, and qualitative interviews with around 333 Hijra community members of 19 akhadas (9 akhadas in rural and 12 akhadas in urban and rurban landscapes) and stakeholders, the study uncovers the subtle ways in which Hijras negotiate visibility, survival, livelihood, and status within a two-way socio-legal environment. The concept of "uniform visibility" is introduced to describe the paradoxical state in which Hijras are hyper-visible as cultural symbols and structurally invisible within civic and spatial discourses. The findings illuminate how spatial isolation, religious syncretism, and colonial legacies continue to influence the stigmatisation and spatial displacement of Hijras. By situating these practical realities within broader discussions of gender, place, and postcolonial identity politics, this study contributes to the growing body of critical geographical literature on non-binary gender identities in North Bengal. The study advocates for inclusive gender planning, rights-based policy frameworks, and the recognition of Hijras not simply as subjects of marginalisation but as active agents of geo-spatial and cultural entities.

Keywords: gender geography, ethnographic fieldwork, socio-legal environment, uniform visibility, religious syncretism, stigmatization, inclusive gender planning, rights-based policy frameworks, marginalization

HIJRAS W GEOGRAFII PŁCI: BADANIE NAD IDENTYCZNĄ ŚWIADOMOŚCIĄ W PÓŁNOCNYM BENGALU W INDIACH

Streszczenie (abstrakt): Hijras, jako marginalizowana kategoria w geografii płci, oraz społeczność ta mierzą się w wielu krajach, w tym w Indiach, z okresowo nasilającymi się kryzysami tożsamościowymi. Niniejsze badanie analizuje tożsamości społeczno-przestrzenne oraz marginalizację hijras, historycznie uznawanej społeczności trzeciej płci, w ramach uwarunkowanej płciowo geografii ośmiu dystryktów Bengalu Północnego w Indiach. Wykorzystując koncepcje geografii płci oraz intersekcjonalności, w badaniu analizuje się, w jaki sposób czynniki kulturowe, przestrzenne i instytucjonalne kształtują codzienne doświadczenia, tożsamość własną oraz społeczne uznanie hijras w tym regionie. Zastosowano podejście mieszane, obejmujące badania etnograficzne w terenie, kartowanie przestrzenne oraz wywiady jakościowe przeprowadzone z około 333 członkami społeczności hijras z 19 akhad (9 akhad na obszarach wiejskich oraz 12 akhad w przestrzeni miejskiej i podmiejskiej) oraz z przedstawicielami interesariuszy. Badanie ujawnia subtelne sposoby, za pomocą których hijras negocjują swoją

widoczność, przetrwanie, źródła utrzymania i status społeczny w ramach dwutorowego środowiska społeczno-prawnego. Wprowadzono pojęcie „jednolitej widoczności” (uniform visibility) w celu opisania paradoksalnego stanu, w którym hijras są nadmiernie widoczne jako symbole kulturowe, a jednocześnie pozostają strukturalnie niewidoczne w dyskursach obywatelskich i przestrzennych. Wyniki wskazują, że izolacja przestrzenna, synkretyzm religijny oraz dziedzictwo kolonialne nadal wpływają na stygmatyzację i przestrzenne wysiedlanie hijras. Umieszczając te rzeczywiste doświadczenia w szerszym kontekście dyskusji dotyczących płci, miejsca oraz postkolonialnej polityki tożsamości, badanie wnosi wkład w rozwijającą się literaturę z zakresu geografii krytycznej poświęconą niebinarnym tożsamościom płciowym w Bengalu Północnym. Autorzy postulują prowadzenie inkluzywnego planowania uwzględniającego kwestie płci, tworzenie opartych na prawach człowieka ram polityki publicznej oraz uznanie hijras nie tylko za osoby doświadczające marginalizacji, lecz także za aktywne podmioty kształtujące jednostki geograficzno-przestrzenne i kulturowe.

Słowa kluczowe: geografia płci, etnograficzne badania terenowe, środowisko społeczno-prawne, jednolita widoczność, synkretyzm religijny, stygmatyzacja, inkluzywne planowanie uwzględniające kwestie płci, ramy polityki oparte na prawach, marginalizacja

1. Introduction

The Hijra community of North Bengal experienced various issues, such as unemployment, rare access to state & central government schemes, illiteracy, social discrimination, sexual & psychological harassment (Devashis, 2021), maltreatment, dishonor (SK, 2020), low income, experienced violence, abused, low social status, and violence in working lives, and low family security (Sharman, 2017). Hijras of North Bengal are living in a somewhat insecure environment. They clap hands, perform dances, and beat traditional double-headed drums, or dhols (fig. 9), in the houses of the newborn babies. Until now, some Hijras have been begging on trains, buses, and at the side of toll gates in North Bengal. Actually mainstream society does not recognise the identity of Hijras (Maal, 2018). However, if we recognise their needs as policymakers, then Hijras can overcome various issues (Sah, 2021). For livelihood a special 'guru-shishya' model of economy (Singh and Kumar, 2020) is followed by hijras of North Bengal which is based on collective economy. Sometime Hijras of North Bengal wish to leave their akhadas and try to make a relationship with mainstream society, but it is very hard for them, because they select the people from mainstream society who love them personally, but they become outsider & expelled to get the adore of society. Hijraj of North Bengal does not have the capability to opt for a suitable name for oneself. Hijras of North Bengal are entitled by different names in different places of India, such as Kinnar in Delhi & adjacent metropolitan region, Aravani in Tamil Nadu state, Hijra in West Bengal state, etc. Again, the term "Hijras" is controversial to many of them. Actually the word "Hijra" does not mean maltreatment or rudeness.

The term is never derogatory in general, but it becomes derogatory when used against a specific man or woman (Haati, 2021). Society believes that the Hijras community has the power to bless anybody, which is very fruitful. Be a Hijra people. Sushant Divyagika concluded the controversy through the statement like ‘Hijra is not an abusive term; it is

actually a community that means the journey you take to reach the door of God; and they are closest to God; therefore, they have the power to bless' (Nanda, 1999). They are deprived of the field of employment and education. As a consequence, they are often poor and forced to beg or prostitute themselves for sustenance on earth. The police sometimes harass Hijras of North Bengal and deny them medical treatment in government hospitals or private nursing homes. But very recently, Hijras have started to access some rights and freedoms that they previously denied. For example on 2014, the counties like Bangladesh, India, and Nepal had officially acknowledged that Hijras as citizens allowed equaling rights (UNDP & USAID, 2014). For example on 2014, the counties like Bangladesh, India, and Nepal had officially acknowledged that hijras as citizens allowed to equal rights (UNDP & USAID 2014). The Honorable Supreme Court of India has declared that "every person has the right to choose their gender", and the gender identity means "not a social or medical issue but a human rights issue" (Limaye, 2014). Again, the Supreme Court of India has ordered every state & central government to provide opportunities of education and employment to third-gender groups. Afterthat though the progress has been recorded very slow, but in 2015, the first transgender mayor was elected in the Raigad city of Chhattisgarh of India (Rudd, 2018). Another piece of developmental data has been found in 2017: the city of Kochi in the state of Kerala was hired 23 Hijras to run the public transport system (Rudd, 2018). A large portion of society has no idea of the differences between sex and gender. Logically, gender is our 'thought', and 'sex' is our biological identity of an individual (Pal, 2019). The concept 'gender differences' is making the differences of respect to the gender identity (UNICEF, 2017). A portion of the general public is not giving sufficient respect to the Hijra community as the third gender because they maintain the ignorance. Till now, Hijras are identified as an outcast and untouchable in the society, and they followed Darwin's 'struggle for existence' (Ward, 1907) to exist in civilisation. The objective of this study is to point out the crisis of the Hijra community in North Bengal, which was not available in any previous literature.

2. Study Area

The study area (situated from 24°40'20"N to 27°13'N latitude and 87°45'50"E to 89°53'E longitude) covered eight districts of North Bengal (total area approx. 21,855 sq. km.) e.g. Alipurduar, Dakshin Dinajpur, Darjeeling, Cooch Behar, Malda, Jalpaiguri, Uttar Dinajpur, and Kalimpon (Paul and Paul, 2021). North Bengal is the northern part of the state of West Bengal in India which has so many national & international boundaries like Sikkim state of India, Nepal, and Bhutan in the north; Assam state of India and Bangladesh in the east; Bihar and Jharkhand states in the west; and Murshidabad district of West Bengal (India) in the south.

3. Primary & Secondary Database

For primary data collection researcher visited atleast two Hijra families (is called *akhadas*) from each districts of North Bengal and followed purposive sample such as, *akhadas* of Shantimoy Ghosh Colony of Balurghat town, *akhadas* of Pan Samity-Panerhat of

Gangarampur of Dakshin Dinajpur, Balurchor & Garurhat *akhadas* of Malda town, *akhadas* of Chakirmore of Cooch Behar Sadar & Mathabhanga of Cooch Behar, *akhadas* beside Tara Kali Mandir of Gazole of Malda, *akhadas* of Jhankarmore, Bardhamanmore, Bagrakot, & Barivasa Bypass of Siliguri town, *akhadas* of Milanpara of Kaliyaganj town, *akhadas* of FCI-more of Raiganj of Uttar Dinajpur, *akhadas* of Alipurduar Sadar & Falakata Sadar of Alipurduar district, *akhadas* of Raikotpara of Jalpaiguri, and Bhaktinagar & Bhabeshmore of New Jalpaiguri (Fig. 1). The Kalimpong district's Hijra data is collected from Siliguri's akhadas due to low population and cultural differences; their income is insufficient for survival. The researcher selected only the one category of third gender, such as Hijras, rather than all the categories. The researcher selected only one category of third gender, such as Hijras, rather than all the categories of the third gender in North Bengal. During the survey, the researcher was aware of the existence of 'Lesbians, Gays, Bisexuals, and Transgender People (LGBT) who are not classified as Third Gender', in accordance with as per the April 2014 Judgment of the Supreme Court of India (The Hindu, June 30, 2016). Researchers followed literature reviews from articles, books, Sodhganga, magazines, newspapers, and documentary films on hijras as source of secondary data (Sridhar, 2014) and YouTube videos (such as, '*Shabnam Mausi*', '*Nagar Kirtan*', '*Sadak*', '*Between the Lines of India's Third Gender*', '*Arddhanari*', '*Shandha*', '*Ashrai*', '*Hijra*', and '*Debi*') *(Debnath*, 2021).

4. Methodological Aspects

It is mainly qualitative research. To prepare the locational map of akhadas in eight districts of North Bengal, the researcher used ArcGIS (ArcMap 10.3). The descriptive statistical technique (Yellapu 2018) was used for data composition, and Yamane's formula was used to select the number of samples (Adam 2020). To standardize the questionnaires, the researcher applied the content validity method (experts' opinions on the items). To validate the reliability of the questionnaires, the test-retest method (Simões et al. 2018) (applied to a 10% population) was used in this study. For proper authentication of the field information, the geo-tagged photography (Welsh et al., 2012), perception study (self-perception study method as per Daryl J. Bem, 1967), and observation (Kumar, 2022) techniques (Glaw et al., 2017) were implied here. The researcher interviewed a total of 333 hijras from 19 different akharas in eight districts of North Bengal, where both closed- and open-ended questions were used with the tool of the Bengali language.

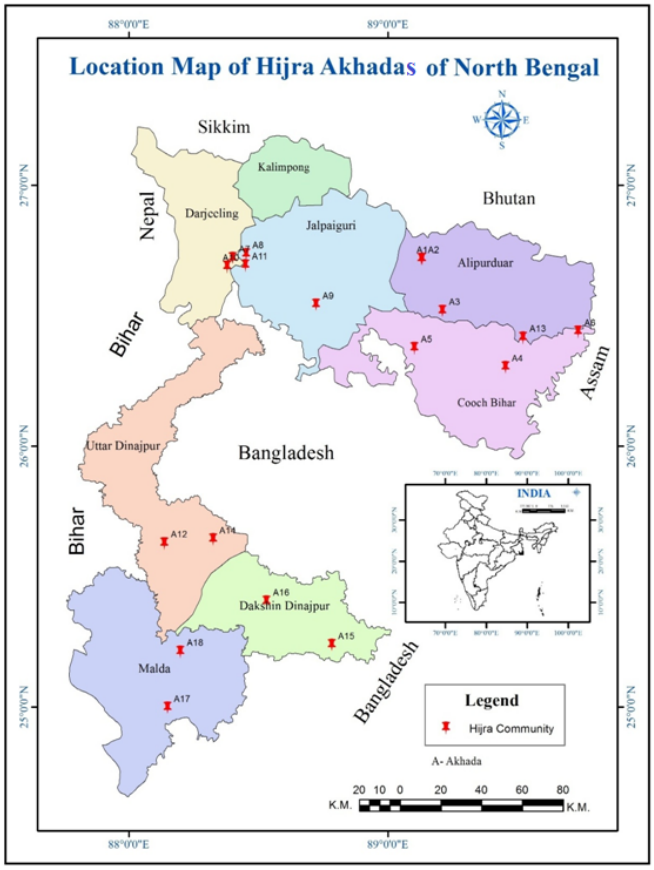


Fig. 1. *Akhadas* (total 18 is represented in name of A1 to A18) of Hijra community of North Bengal (Debnath, 2024)

5. Results & Discussions

5.1. Conceptual Distinction & Historical Identity of Hijras

Due to the biological structure of their bodies, they cannot bear children, but they are considered women by society. They wear long hair, wear *saris*, and adorn themselves like Hijas. Again the word transgender is used in a broad sense in society, and refers to all those people who have changed their biological identity. In India, many cultural groups can be targeted under this third gender category, such as *Kothi, Hijra, Aravani, Joktas, Shivshakti*, etc. *Kothi Bahijara* or *Aravani* or *Joktas* and *Shivshakti* are born men (Reddy, 2005), but, their behavior, characteristics, nature and character are all like women. Hijras are 'neither male nor female' (Srivastava, 2014), but they bear feminism. Again, 'Transgender is a general term' (Srivastava, 2014), and *Hijras* are 'the oldest transgender community in the world, with records of their existence' in the *Kama Sutra* and the *Mahabharata* (400 BC) (Wallen, 2018). The Hijra community is identified due to their unique tradition, family structure, '*divine sub-deities*' (Hossain, 2012), religion, spiritual powers, blessings for human welfare, good luck, and fortune (Bhadoria, 2020). Hindu *Puranas* mention that Lord *Vishnu's Mohini Avatara* merged with Lord Shiva and Lord *Ayyappa* was born. Lord *Ayyappa* is said to have been born as a result of the union of Lord Vishnu and Lord *Shiva*, and is called *Harihara* (Kinsley, 1986). Lord Vishnu's *Mohini*

Avatara, i.e. male but female in form, qualities, nature, and behavior, sheds light on the third gender of the present society (Pattanaik, 2002). Hindu *Puranas* mention the story of *Ardhanarishvara*, the combined form of Lord *Shiva* and Goddess *Parvati* (Zimmer, 1946). The story of *Arjuna's* female form, *Brihnanala*, is recorded in the *Mahabharata* (van Buitene, 1978). Again, the story of *Shikhandi*, who being a woman is a man in physical structure, is also mentioned (van Buitene, 1978).

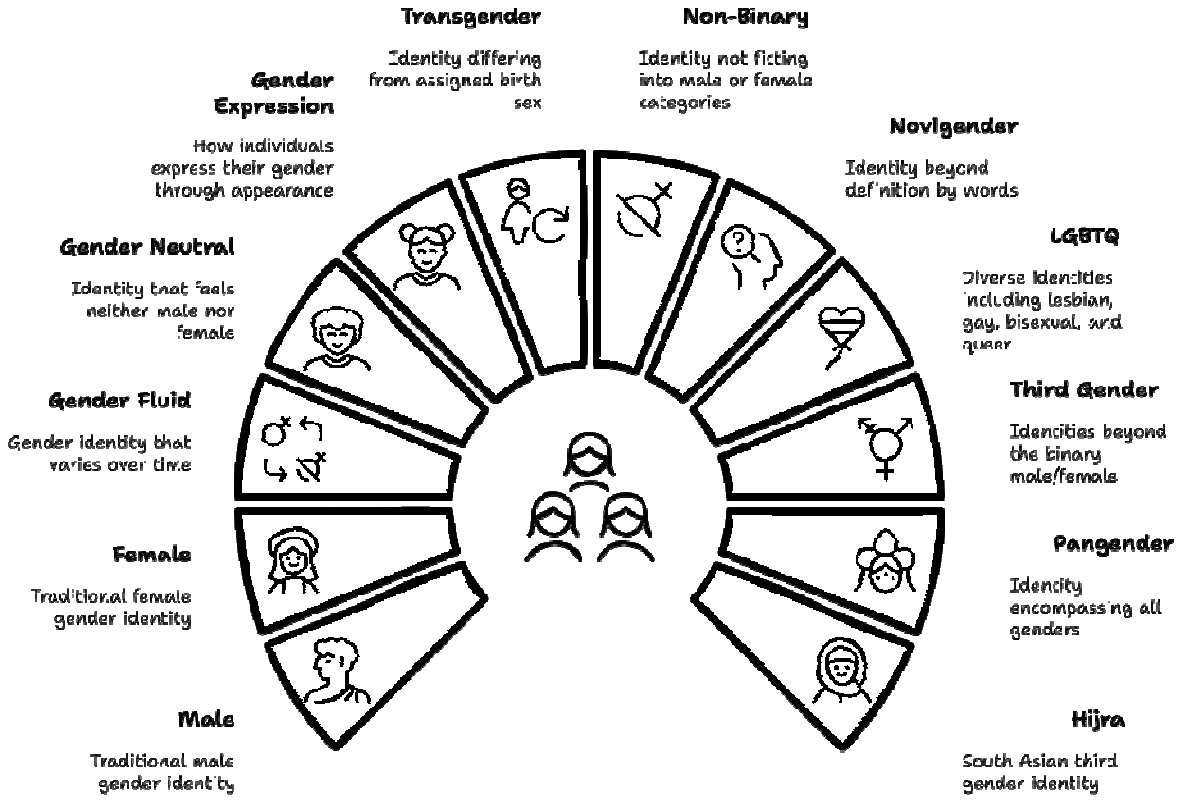


Fig. 2. Understanding the types of gender identities (Canva 2025)

Gender and sex are both different. Gender indicates biological characters, and 'se' or ‘linga’ refers to expression of character (Pal, 2018). But an orthodox thinking is present in society that gender means the identity of male and female. Actually, they are one of the wings of the Third Gebnd. They were present in Ramayan, Mahabharat (Yadav and Patni, 2019), the Mughal period (Michelraj, 2015), and even the British period to contemporary history. In India they first got the right to vote in 1994. After that, the Supreme Court of India considered them as part of the Third Gender (Mishra, 2016). The Chief Minister of West Bengal passed the bill for them on November 25th, 2022 (EiSamay, 2022), to give them rights to participate in several government examinations under the third gender category. As a result, in 2022, the ’Primary Teachers Eligibility Test’ had a total of 40 candidates who applied in the category of ‘other’ or third gender. The conceptual differences between third gender, transgender, and hijras must be known to people. Transgender, or 'transsexual' (Roy, 2010), means the person who changed their gender identity, i.e., female to male or male to female. But Hijras (Kinnar) (Singh and Kumar, 2020) are not transsexual because by birth they were born with a male identity, and after

growing with time, they felt that they were female, and simultaneously, from their childhood, Hijras started to follow the looking, gestures, and habits of girls or females.

People of the Hijras have been considered as an important part of Indian society for ages from the *Mughal* Empire to the British period, and even today (Hossain, 2021) played an important role in the royal court. They performed the duties of guards, administrative, political and even treasurer of the treasury. In the 19th and 20th centuries the British colonised government was shocked by the sight of the third gender in South Asia (Nanda, 1990). Christianity's belief that 'transvestites' (transgender) are like the criminals, and as per that belief, the British government ordered colonial authorities to arrest them on the spot in 1871 (Singh, 2022). But the '1871 law for transvestites' was repealed shortly after the Indian independence (Nanda, 1990). During the early British rule in the Indian subcontinent, people of the Hijras enjoyed some protection and privileges, which were eventually granted through British law. Later, during the colonial period in the eighteenth century, the situation began to change to a large extent. The royal courts also sought to give respect to people of the third gender who traveled to Europe in other institutions (Bailey, 2014). Later, this law was repealed in 1952 so that society could develop a favorable attitude towards people of the third gender (Meyerowitz, 2002). In 2014, the Supreme Court considered transgender and changed the legal right to be identified as the third gender (Devashish, 2021). In 2016, the 'Protection of Rights Act' was introduced in India for transgender people (De Boxi, 2025). On December 5, 2019, 'The Transgender Persons (Protection of Rights) Act, 2019' was passed (Bhattacharya & Ghosh, 2022), and Hijras are included under this act.

5.2. Identical Lucidity of Hijras

Hijras want to be represented like a woman. In their childhood they did not know whether they were girls or boys. Mainstream society called them Hijras or *chakkas* (McFadden et al. 2024). In their childhood they felt disrespect from society or even from their parents. Some Hijras exposed the truth of their childhood: that the force of their parents was present in families to go to doctors for medical treatment frequently, but after completing their childhood, they think that if God has given this identity, then what can doctors do? Among the Hindu houses of North Bengal, there is an unwritten rule of not paying rent to members of the Hijra community. Hijras during their childhood are skeptical of community treatments and refrain from admission to educational institutions due to the mistreatment they receive there. Although there are about 2000 *Hijras* in the entire North Bengal, they are still neglected in the political arena (Haldar & Mukherjee, 2019). Before elections, politicians make false promises, but no relief is received to elevate the situation of Hijras. Till now they faced mistreatment and hatred while begging in the trains and buses of North Bengal. Though the Indian government's '100-day scheme' (*Mahatma Gandhi National Rural Employment Guarantee Scheme*) is applicable to every Indian, in reality, the participation rate for Hijras is zero in North Bengal. This entire research has reflected the issues of the socio-cultural, philosophical, and lifestyle of the Hijra community. The Hijras follow a conservative philosophy related to their traditional culture and social structure.

Due to historical ignorance and rare acceptance, they are like a pocket or island in the society. Now with the help of media, they have developed their identity and status of livelihood. With the help of extensive inclusive education, their society must be developed globally.

Hijras of North Bengal faced language problems due to not knowing English completely; however, with increasing awareness, they have started. The literacy rate among Hijras in North Bengal is only 1.27%. Children who are born with the identity of Hijras become mentally weak and feel insecure from an early age. Based on a door-to-door survey, it was found that Hijra*s* faced different discrepancies from their early childhood, which made obstacles to sharing feelings with society. In India, The Supreme Court recognized hijras and other transgender persons as a "third gender" and directed the central and state governments to treat them as Socially and Educationally Backward Classes (SEBCs) as per the NALSA v. Union of India (2014) Supreme Court judgment. The Union government has stated that transgender persons can avail of existing 50% reservation quotas – available to Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC) – if they qualify. They can also access the 10% quota for Economically Weaker Sections (EWS). The Calcutta High Court has directed the state to ensure 1% reservation for transgender people. In various Hijra akhadas of North Bengal, miscreants from society intimidate them by pelting stones at their tin houses or unusual beating on tin-made walls during the night.

There are no special facilities such as separate hospital schools, specific rooms in government hospitals, or toilets in any institutions for Hijras in North Bengal to earn a living; as a result, most of them choose alternative works as a livelihood, but no such arrangement has been observed for the Hijra community. The livelihood of the Hijras is begging, playing drums, dancing, and singing if there is a child in someone's house or if they are married, or collecting money from the passengers during travels in the train or bus. In the current society, Hijras are seen with such contempt that, when a Hijra child is born in a family, the parents or relatives feel ashamed of the child's identity and even target the child by inflicting various injuries on him so that he does not behave like a woman (Hussain et al., 2020). Although the Hindu Marriage Act of 1955 was passed for the marriage of the hijra community, most of the society did not accept this community (Mishra, 2016). Some Hijras marry; despite the expansion, most in this community are unmarried yet are involved in sexual activities. As a result, mental illness is observed among many Hijras. Article 14 of the Indian Constitution talks about the right to equality (Government of India, 1950), Article 15 prohibits discrimination, Article 16 of the Indian Constitution talks about equal opportunities for all (Government of India, 1950), and Article 21 of the Indian Constitution gives rights to protection of life and personal liberty (Government of India, 1950). Yet, the Hijras are neglected and discriminated against in society. Although there is a separate accommodation system for women in the field of transportation, there is no separate accommodation facility for the Hijra community. As a result, they have been facing various problems at different times while traveling.

In North Bengal all the akhadas are situated at the fringe or outskirts of urban sites which influence to expand urban areas; such as Raiganj's FCI-more, Kaliaganj's Milanpara, Balurghat's Shantimoy Ghosh Colony, Gangarampur's Pan Samiti, Malda's Balurchar, Alipurduar's Itkhola, Cooch Behar's Chakirmore, Birpara's Subhashpalli, near Barsha Nursing Home in Falakata, Jalpaiguri's Raikotpara, New Jalpaiguri's Bhaktinagar, Bagrakot, Zebravita, Jhankarmor and Siliguri's Barivasa. The Hijra community selects the urban sites because they want to access the urban facilities like urban transportation, gathering of a large population, and urban education, which is important to face less negligence. Hiras wake up early in the morning and go back home in the evening for their earnings, so proper transportation is important for their commuter behavior. Again, urban people are comparatively more literate, and for that they are aware of the third gender; so if Hijras are present in urban environments, then they can get rental houses very easily. Moreover, due to the touch of urban culture, Hijras want to be literate after seeing others' education. In North Bengal (2022), the total number of Hijras is 333. Out of the total Hijras, 283 (84.98%) are Hindus, 45 are Muslims (i.e., 13.52%), 3 are Christians (i.e., 0.90%), and only 2 are Buddhists (i.e., 0.60%). Hijras are following religious integrity in akhadas. The present literacy rate of Hijras of North Bengal is 1.27% (i.e., 4 out of 333). Only one graduated as a Hijra of Raikotparakha of Jalpaiguri, and one MBA-qualified Hijra named Anita of Jhankarmore of Siliguri, having completed post-graduation (Debnath, 2024). Only one Hijra in the Malda district has a higher education degree. In North Bengal most of the Hijras have the story of leaving home. This community are detached from their original families and secretly hide the information of their parents' identity from society. But in the Akhadas they have their 'guru' and get lessons on life, discipline, the art of Dhol beating, traditional songs, the art of tin tali or clapping, singing, and dance.

In Hindu weddings, Hijras go for money and perform traditional dance with singing and finally blessings to the couple. Hindus have the belief that the blessing of Hijras is important for fertility in the family. Hindu families believe that if Hijras are not happy as per their demands from newlyweds or newly born babies, then that would be a curse for the family. Sometimes they are invited to perform dance and singing at the wedding. But again, most times they come to the houses where babies are born and marriages are held. If Hijras are not invited in the houses of newly born babies, then some families block their entry to the houses for their using slangs and seek family due to the huge unpaid demand of money and create some nuisance in front of neighbors. Sometimes families call the police to stop the nuisance, but the Hijra community is too strong in integrity, so the police can't do anything. Hijras are not invited to any occasions in mainstream society. They never get love and respect from males and females normally. The migration of Hijras' life is never studied in gender studies. But in reality, since their birthday, they have experienced the migration due to unhealthy social rules. From parents to family members or outside the families, they faced the ignorance of their gender crises. Since their childhood their parents denied accepting them, and since that day they handed over to any Hijra akhadas, or sometimes they were rejected by the parents and left their houses for

unknown destinations. From their childhood, Hijras realized that their life is based on separation from the nearest. That's why they travel from one city to another with unknown destiny. Finally they reached any akhadas and started a new life under the supervision of any other senior Hijra, who is called a guru. To survive, they stay in the akhadas and again start to follow as 'commuters' in life to earn money daily. In the morning they leave the akhada for earning, and in the evening they come back to the akhada. From the akhadas up to 20-30 km, they were wounded daily to search the houses where a new baby is born or a new marriage is just finished. They went there, performed dances with singing, and demanded some amount for their sustaining life. In North Bengal, the Hijras have not migrated from one district to another only; rather, there are some Hijras who have come here from Bangladesh (Hossain, 2017) illegally.

Geomorphologically, Hijras are living in a plain area of North Bengal rather than the hill area. Religiously, they prefer the Muslim houses to take rent because Hindu families are not interested in renting them. Culturally they are identified in society by performing unique 'tin *tali*' (claping three times) and playing the traditional *dhol* (Sardar & Yassin-Kassab, 2012). Hijras mainly prefer to stay nearer to urban areas because in urban areas such as Raiganj, Siliguri and Malda towns the population number is higher, which gives them the possibility of sustainable sources of income. But there are some akhadas present in rural areas where level of income of Hijras is comparatively lower than urban Hijras. Hijras do not prefer to go to government hospitals because of ignorance of the people or hesitation to accept treatment outside of akhadas. Recently most of the Hijras of North Bengal have the voter card and aadhaar card based on the identical link of Gurumaa, or the head of the akhadas. Gurumaa is the administrative head of each akhada, and she takes all the final decisions (Panigrahi & Mathew, 2019). In their akhadas they love to take care of domestic cows, dogs, cats, hens, and ducks. They mainly sleep on open floors with shared common beds where 4-5 Hijras can sleep side by side, and it is mainly for their space or room scarcity. In akhadas, they follow their own ayurvedic traditional health treatments based on nature's ingredients. Recently they have become conscious about saving money and building permanent houses; that's why the Hijras of North Bengal started permanent housing in the Raiganj and Siliguri towns. In North Bengal, Hijras need extensive education. No legal barriers are present about the participation of Hijras in the education system, but the issue is ignorance, bullying, and negligence by mainstreaming society. Even 70% of hijras have no permanent houses, land, property, and bank accounts.

Hijras of North Bengal face discrimination to get rental housing in any area. In general the owner or tenants do not stay in the same houses when Hijras took rent. Even neighbors don't like the presence of Hijras at their side. That's why Hijras take rent from the houses at the fringe of the city. As per the survey, it has come out that many Hijras were abused sexually in their childhood. Unfortunately, in India, police are unable to take actions properly when Hijras are sexually abused because constitution gives so many laws for males and females, rather than for Hijras. For example, when a lady is raped, there is a punishment of 15 years of imprisonment under Section 376, but in the case of Hijras, it is not more than 5 years of detention (Jain, 2021). People are shouting for human rights, but

nobody shouts for the Hijras' rights. People may forget that Hijras are part of humans. Hijras of South Bengal, especially Kolkata, are different from the Hijras of North Bengal. Once one Hijra named Hena Sau came to Alipurduar to stay with the Hijras of North Bengal, but after some months, Hena returned to Kolkata because psychologically she was unable to adopt the culture of North Bengal. It is observed that no sector of society is ready to give jobs to Hijras, especially for their identity crisis. Hijra's children are facing bullying and taunts by other students in the school. That's why they lost their interest in going to school. At a young age they beg at the site of traffic, sometimes in the bus or train. Local grocery or shopkeepers do not want to sell products to them, and when they visit such kinds of shops, shopkeepers lie that the item is not available in his shop. This type of incident was experienced by a Hijra named Priya Roy from Shyamangar of Kamakhyaguri. Actually shopkeepers feel fear that if Hijras are coming frequently in their shops, then the other neighbors or customers will not come easily, and their business will be damaged.

Ignorance from the society births fear within Hijras to go to local doctors, medical stores, and government offices. They tried to cure themselves with the traditional treatment of Akhadas, and sometimes they faced huge medical issues. In North Bengal the word "Hijra" is a derogatory and offensive term to call any male or female. They are not conscious about involving themselves in different economic activities; for example, they are not involved in '100 Days' work. It has come to know after an extensive survey in North Bengal that recently they use Facebook, WhatsApp, and Messenger to communicate with society even without being in the same nation. Interestingly, most of the Hijras do not open their original identity on social media and use a fake profile for making friendships with others. Hijras are given a very sad statement that a male or female should not have to show medical certificates to identify them, but a Hijra needs a medical certificate to prove that she is a Hijra. They think that they are the human without identity, and even politicians use their votes before voting. Politicians come to the houses of Hijras in North Bengal before voting to get a blessing from them, but after voting, they forget Hijras completely most of the time.

Hijras like to represent themselves as feminists. They have long hair and are often accompanied by symbols of femininity. In mind and psychology, they are female but deprived of all kinds of choices and aspirations related to motherhood. Historically, they have been deprived of opportunities in both education and the political sector. They are also confronted with various derogatory names, such as ‘Chhakka’ (Arvind, et al., 2021). In the schools, colleges, universities, and government offices of North Bengal, no Hijras are found as employees. They are not counted in the discussion of human rights and social respect. Mainstream society does not know their mind, psychology, thoughts, emotion, history, demands, and needs. Even the Government of India is concerned about the third gender, rather specifically Hijras. But recently Hijras are getting the facility to fill out any form for a job as part of the third gender. They want to leave the begging and to start with a better livelihood. Their biggest problem is that the original families of Hijras don’t want to accept their Hijra children. When families are unable to hide the gender identity of Hiras due to social prestige, then they transfer their child to Akhadas, which is far from their

home. Hijras of North Bengal are coming from out of North Bengal, mostly from the nearest Bangladesh. Many non-hijras are doing the same job as original hijras with the following Hijra's gesture. For this original Hiras are depriving socially, culturally, and economically.

In India, '*Beti Bachao Beti Padhao*' (*Save the girl child, educate the girl child*) (Office of the Government of India, 2015) or in West Bengal, '*Kanyashree*' (Office of the Women Development and Social Welfare Department of the Government of West Bengal, 2015), are strongly implemented for girls' development, but for Hijras, no such fruitful initiative, like '*Hijra Padhao Hijra Bachoo*' (*Save the Hijra child, educate the Hijra child*), is started. Different administrative buildings in North Bengal are identified in the names of girls or women, like '*Uttarkanya*' (Office of the North Bengal Development Department, 2014), but no government building is identified in the name of a famous Kinaar. There are so many non-Hijras pretending in the streets of Kolkata who are pseudohijras and earning money at traffic, and later they are caught by the original Hijras and beaten up by them. Such kinds of incidents are hampering the income of original Hijras. The technique of clapping and its sound due to the 'tin-tali' of Hijras are God-gifted. The sustainable thinking (Pal, 2019) of Hijras should be accepted by all. The widespread education is demanded to reduce all kinds of issues in their life. Society never knows the tradition and culture of Hijras. They have no own houses, so they are compelled to take rented houses with high rates. They bear the perception of the philosophy of the opposite sex in same body. A conflict between real Hijras and fake Hijras is seen in society. In Dostimore of Raiganj town, so many fake Hijras are found who adopted the gesture and behavior of original hijras to collect money from the running car.

Hijras have more than 400 years of history. Currently, they have a total population of 4-6 lakh in India (Karla, 2012). But the basic problem is lack of recognition and identity. There are so many men in West Bengal who want to adopt the hijra guest just to earn money, which is very unlawful for original Hijras. Hijras are identified in passports as 'E' (Bray, 2005). Hijras have unique body gestures, a distinct style of speaking, high self-esteem, specific behaviours and attitudes, distinctive makeup, own events, truths, freedom the use of lipsticks, expressive emotions, and the application of 'kajal' (eyeliner) on eyes which ic called '*gharana*' (tradition). They are residing in a group format, and no castism or religion conflict is present among them. They followed both the 'philosophy of existence', the philosophy of existentialism (More, 2016) and philosophy of well-being. They believe in their responsibility, and they know very well that on this earth they are alone. They believe in nihilism, i.e., have faith in God, heaven, and hell. They experience various kinds of suffering in their lives, which developed the philosophy of '*hedonism*' (Veenhoven, 2003) among them. They maintain the 'theory of well-being' or '*classical utilitarianism*' (Schmidt-Petri, 2006) for the well-being of others. Hijras prefer love and wisdom in life and have followed the '*desire theory*' (Smith, 2018). They desire to get gender identity. The '*Bahuchar Mata*' (Sharma, 2017) is the deity worshipped by the Hijras, and it is so sacred to them that they dedicate their genitals to this holy deity. By law, once again, the personal life of Hijras is restricted when Section 377 of the Indian Penal Code (1861)

prohibits homosexuality among transgenders (Government of India, 1861). In fact, human civilisation forgets that there is a word called '*individuation*' (White 2013), where each community has its own individuality. The Hijras have their own unique '*subculture*' (Dowd, 2003), e.g., a group of Hijras who sacrifice their genitals for the purpose of '*polygamy*' and are called '*eunuch men*' (Handy et al. 2016), and these '*eunuch men*' are given more respect in the Hijras.



Fig. 6. The researcher felt a sacred belonging while collecting the data from the *Hijra akhada* of *Alipurduar*, led by *Riya Sarkar*. The cooperation from *Riya Sarkar, along with Shabnoor Sarkar, Subla Sarkar, Nishi Sarkar, Mahi Sarkar, Chumki Sarkar, Pari Sarkar, and Mishti Sarkar*, depicts that they are able to develop emotional kinship even with people outside the arena.



Fig. 7. *Manab Khan*, who is a 6-year-old Muslim *Hijra* child, is getting an education at *Dooars* Hindi Medium School, and *Anjana Kinnar* of *Dalgaon* in Birpara admitted her.



Fig. 8. A sample of the visual kinship of the *Hijra* family of *Falakata* near *Barsa* Nursing Home with Dr. Tapas Pal at the time of data collection.



Fig. 9. The researcher is getting information about the usefulness of the *dhol* of the Hijra community in *Chakirmore*, *Cooch Behar.*

7. Strategic Policy Recommendations

In addition to male and female, there is also a third gender. Hijras and transgendered people are both under the third gender. Parallel to matriarchal and patriarchal societies, recently the importance of third-gender society has risen. The concept of sustainable development and the welfare approach has become important for the Hijra community.

This community has their own historical traditional environmental knowledge, and the environmental policymaker should have to analyse it. The Indian government should accept the human resources of the Hijra community for the country's development. The Indian Population Census must clearly report the number of Hijras in India instead of aggregating them with the total number of individuals classified as the third gender. The Census of India-2011 started to count the number of third gender (Nayak, 2019), but the issue was Hijras are not counted specifically. In every municipality, block-level development board, and municipality, the members of Hijra representatives should be involved to raise their voice promptly. Again, if a Hijra child is born in any house, the parents should take care of them like boys and girls. The government should start the provision that if a Hijra child is born in any family, then the parents should get some special benefits like a tax deduction from income, free education for their Hijra children, some logistic support for the baby Hijra to grow properly, or zero interest loan to cover the expenditure for the Hijra children’s growth. The government should build the separate toilet for them in every institution (India News, 2016), and in New Delhi, the Municipal Corporation has already successfully built it (Sharma, 2022). In every hospital and nursing home a separate ward and beds should be allotted for Hijras. In the school system the proper importance of admission of Hijras should be started, and the separate chapter on Hijras struggling and succeeding may be added to the contents of the syllabus. In local buses or trains, the ignorance of Hijras must be banned constitutionally.

Hijras do not like to hear the word 'aunt' or 'Maasi' (Naz Foundation, 2017). Like other people, they also need social respect. For the development of the society, the government should provide them with special training on handicrafts. Hijras can participate in different economic activities such as cottage industries, defense, tourism, hotels, restaurants, arts and crafts, microfinance, and homestays. An authorized third-gender development cooperative bank can be started by them in North Bengal. From state government to local Panchayats, they should encourage them to join in their local development projects. Here the growing confidence is the main key to overcoming all kinds of issues of the Hijra community. There are toilets for men and women, respectively, at different places in all municipal areas and all government sectors. For the overall development of the Hijras community, we should give importance to gender studies, quality education, better health, and well-being. If it is continued, then a counter-development by the Hijra community will emerge in society. With the application of human resources of the Hijra community, it is possible to develop ‘No Poverty’, ‘Zero Hunger’, and ‘Participation for Goals’ (United Nations, 2015) in this Gen-Z civilization. The Sustainable Development Goal of the United Nations is number 5, where gender equality is talked about. If we look at the logo of gender equality, it can be seen that only two gender symbols are mentioned as logos. However, the third gender logo is not given any importance here (fig. 3). Therefore, the researcher first addressed gender. Researcher talked about giving equality to the second gender and the third gender together and presented it here through a revised logo. There has been a change in judgment and thinking in society and on a big platform like the United Nations. When the third gender should also

be included (fig. 5) in the Sustainable Development Goal-5 logo, it will send a positive message to the global communities in terms of giving importance and equal rights.



Fig. 3. Currently, the logo of the United Nations Sustainable Development Goal number 5



Fig. 4. Tapas Pal's thoughts on the third gender are like this:

A separate 'old age allowance' can be started for each Hijra. The local government can arrange separate sports for Hijras to create their special identity in the society. Hijras are reflecting the symbol of world humanity by maintaining their religious culture under the same roof in North Bengal. Therefore, 'World Hijra Day' can start as 'World Humanity Day'. The existential identity of the Hijra community is suffered by 'reproductive fundamentalism' (Kaur, 2020). In the Manusamhita, the theory of reproductive genitalia is considered an important identity (Manu, 2004), where the male is identified as superior and the female is treated as non-Brahmin even she born in Brahmin family. Rigid societies do not accept the participation of Hijras in the mainstreaming process, or even if any people want to help Hijras by engaging themselves in the mainstreaming process, then that person faces troubles by orthodox society. Even in the lockup of a police station or in jail custody, males and females have separate wards and rooms, but to date for Hijras we don't have any specific cell or prison (Premkumar, 2021). Hijras have good physical fitness, and those resources may be used in the 'body massage' industry, so they can start a 'startup body massage' business. Hijras can act as 'ghotok' (marriage matchmaker) or as rail-guide to protect cows that come on the rail track suddenly from the open field and get into an accident with the rail engine.

Different short films on the hijra lifestyle and livelihood, e.g., 'Hijra', 'Devi', 'Tali Dewa Hobe Na', 'Anyara', 'Sandhe', 'Sadak', 'Sabnam Mausi', 'Ardhanayari', 'Nagar Kirtan', etc., may be attached with B.Ed. and M.Ed. courses (Debnath, 2022). Like 'Tritiya Niwas' (first developed in January 2010) of Guwahati, the North Bengal Development Authority should construct the same for education and various skill development centers for Hijras (NEVARD (n.d.). Like the 'All Assam Transgender Association' (Guwahati Plus, 2021), the 'All North Bengal Hijra Association' may be organized. Like Mother's Day and Father's Day, a special 'Third Gender Day' can be celebrated for the Hijra community. Media may encourage the performance of the ethno-culture of the Hijra community to represent their activities globally. The North Bengal Development Authority, cooperative societies, and NGOs may conduct awareness camps on the health, well-being, and nutrition of the Hijra

community. So many Hijras are scattered in the geography of North Bengal who have no voter ID card. The government should find out about them and register them in the population list. On December 3, 2022, the West Bengal government organised two camps (one at the Raiganj administrative building near the District Magistrate office of Uttar Dinajpur and another at Devinagar in Raiganj town) for registering all the Hijras of Uttar Dinajpur in a voter list.

This article investigated the socio-spatial identities and marginalisation of the Hijra community in eight districts of North Bengal through a mixed-methods approach involving ethnographic fieldwork, spatial mapping, and qualitative interviews with 333 community members. It revealed a paradoxical "uniform visibility", where Hijras are hyper-visible as cultural symbols but structurally invisible in civic and spatial discourses. The findings highlight that Hijras face spatial isolation, societal stigmatisation, and legacy effects from colonial rule that continue to marginalise them. They mainly reside on city outskirts, forming closely knit akhadas (faith-based community spaces) that regulate their social and economic lives through traditional roles like blessings at Hindu births and weddings. Despite their significant cultural role, Hijras experience widespread discrimination in employment, education, healthcare, and housing, resulting in poverty, social exclusion, and psychological hardship. The research notes an alarming literacy rate of only 1.27% within the community and limited access to formal education or healthcare tailored to their needs. Hijras from urban areas tend to have slightly better income and social security but still face societal rejection and harassment. The community's livelihood revolves around performing arts, begging, and seasonal migration to sustain themselves. The research emphasises the need for inclusive gender planning and rights-based policies that recognise Hijras not as mere subjects of marginalisation but as active agents contributing culturally and spatially to society. Suggestions include educational initiatives, legal protections, special livelihood programmes, and social awareness campaigns. The study calls for recognising the third gender in sustainable development goals and mainstream discourse to foster social acceptance, reduce stigma, and empower the Hijra community toward socioeconomic inclusion in North Bengal. This research contributes critically to gender geography and postcolonial identity politics by foregrounding the lived realities of non-binary gender identities.

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FAILURE IS A MORAL DIAGNOSIS: HOW VIETNAMESE IELTS APPLICANTS DEFINE FAILURE ACROSS AGE, GENDER, GEOGRAPHY, AND ENGLISH PROFICIENCY

Abstract: This article examines how Vietnamese IELTS applicants define failure, not only how they report experiencing it. Drawing on 2,000 naturally occurring registration narratives collected between 2021 and 2026, the article maps failure as a culturally patterned moral genre across age, gender, geography, and English proficiency. The taxonomy identifies exam and score failure (10.9 percent), regret over missed opportunity (5.8 percent), self-doubt (3.8 percent), overconfidence (3.6 percent), laziness and indiscipline (3.3 percent), lost direction (1.0 percent), unrealized potential (0.4 percent), interpersonal failure (0.2 percent), and explicit family disappointment (0.1 percent). The most analytically significant finding is the absence of the system from students' explanations of failure. Only 2.0 percent of narratives name structural conditions, while 46.2 percent contain no external attribution at all. Gendered comparison shows that male respondents more often treat failure as a bounded strategic error, with instrumental attribution appearing in 27.3 percent of male narratives compared with 14.5 percent of female narratives. Female respondents more often frame failure as a moral verdict on seriousness, discipline, or worthiness, with moral self-blame appearing in 21.4 percent of female narratives compared with 10.9 percent of male narratives. Rural and provincial respondents show a sharper pattern: 48.9 percent use growth discourse and 21.6 percent produce moral self-blame, compared with 29.4 percent and 9.5 percent among urban respondents. English proficiency does not remove this pattern. Lower-proficiency learners collapse skill gaps into self-doubt, while advanced learners redefine failure through perfectionism, score precision, and overconfidence. The article argues that Vietnamese educational culture teaches many learners to look inward so fluently that structural disadvantage becomes almost unsayable. Failure, in this corpus, is less a single psychological event than a socially distributed language of self-judgement.

Keywords: failure attribution, IELTS, moral self-blame, rural Vietnam, English proficiency

PORAŻKA JAKO DIAGNOZA MORALNA: JAK WIETNAMSCY KANDYDACI DO EGZAMINU IELTS DEFINIUJĄ PORAŻKĘ W ZALEŻNOŚCI OD WIEKU, PŁCI, POCHODZENIA GEOGRAFICZNEGO I POZIOMU ZNAJOMOŚCI JĘZYKA ANGIELSKIEGO

Streszczenie (abstrakt): W artykule przeanalizowano, w jaki sposób wietnamscy kandydaci do egzaminu IELTS definiują porażkę, a nie tylko jak opisują jej doświadczanie. Na podstawie 2,000 naturalnie powstałych narracji rejestracyjnych zebranych w latach 2021-2026 tekst ujmuje porażkę jako kulturowo uwarunkowany gatunek moralny, zróżnicowany ze względu na wiek, płeć, pochodzenie geograficzne

oraz poziom znajomości języka angielskiego. Zaproponowana taksonomia obejmuje: niepowodzenie egzaminacyjne lub wynikowe (10,9%), żal z powodu utraconej szansy (5,8%), zwątpienie w siebie (3,8%), nadmierną pewność siebie (3,6%), lenistwo i brak dyscypliny (3,3%), utratę kierunku (1,0%), niewykorzystany potencjał (0,4%), niepowodzenie interpersonalne (0,2%) oraz wyraźnie wskazane rozczarowanie rodziny jako główny wymiar porażki (0,1%). Najbardziej znaczącym ustaleniem jest nieobecność czynników systemowych w studenckich wyjaśnieniach porażki. Jedynie 2,0% narracji wskazuje na uwarunkowania strukturalne, podczas gdy 46,2% nie zawiera żadnej atrybucji zewnętrznej. Porównanie ze względu na płeć pokazuje, że respondenci płci męskiej częściej traktują porażkę jako ograniczony błąd strategiczny: atrybucja instrumentalna pojawia się w 27,3% narracji męskich wobec 14,5% narracji żeńskich. Respondentki częściej ujmują porażkę jako moralny osąd dotyczący powagi, dyscypliny lub własnej wartości: moralne samo obwinianie występuje w 21,4% narracji żeńskich wobec 10,9% narracji męskich. Jeszcze wyraźniejszy wzorzec ujawnia się wśród respondentów z obszarów wiejskich i prowincjonalnych: 48,9% z nich posługuje się dyskursem rozwoju, a 21,6% formułuje moralne obwinianie się, w porównaniu z odpowiednio 29,4% i 9,5% wśród respondentów miejskich. Poziom znajomości języka angielskiego nie usuwa tego wzorca. Osoby o niższym poziomie zaawansowania przekształcają luki kompetencyjne w zwątpienie w siebie, natomiast osoby zaawansowane redefiniują porażkę poprzez perfekcjonizm, precyzję wyników i nadmierną pewność siebie. Artykuł dowodzi, że wietnamska kultura edukacyjna uczy wielu uczących się tak płynnego kierowania spojrzenia ku sobie, że nierówność strukturalna staje się niemal niewyrażalna. W badanym korpusie porażka okazuje się nie tyle pojedynczym wydarzeniem psychologicznym, ile społecznie rozproszonym językiem samooceny.

Słowa kluczowe: atrybucja porażki, IELTS, moralne obwinianie siebie, Wietnam wiejski, znajomość języka angielskiego

1. Introduction: Failure as a Moral Diagnosis

The question that produced this dataset was not designed for research. I was trained in English language education, I teach English at university level, and I hold a view of the profession in which building linguistic competence is only the visible half of the work. The other half happens backstage: sustaining motivation across the long middle of a course, balancing learners' intrinsic and extrinsic drives (Dörnyei, 2001; Ryan and Deci, 2000), and keeping them moving through the stretches where progress feels slow. That backstage work cannot be done blind. To activate a learner's inner motivation, a teacher first has to know what it is: the learner's motives, their feelings about learning, and above all their beliefs about difficulty. Every course that succeeds passes through difficulty. What a learner does at that point depends less on ability than on what they believe the difficulty means.

For this reason, the registration form for my IELTS programme asked incoming students not only about their goals but also about their inner landscape: what they understood as their life purpose, what they counted as their most significant failure and what they had learned from it, and what the certificate meant to them. The intent was diagnostic and pedagogical. I wanted to know what demotivated each student and what moved them, so that in class I could avoid triggering the former and deliberately activate the latter; and I wanted enough insight into each student's metacognition, that is, how they

thought about their own learning (Flavell, 1979), to teach them well. What I did not anticipate was the pattern the answers would form when read together. One at a time, they were individual stories of setback and resolve. Read as a corpus, they showed an overwhelming turn inward: failure explained through the self, almost never through conditions. A pedagogical instrument had, without intending to, recorded an ideological pattern. This article is the result.

The failure question itself appeared ordinary, but it carried important theoretical and moral assumptions. It assumed that failure was available as a category, that the applicant could recognize it, that it could be narrated, and that a lesson should follow. These assumptions are familiar in contemporary education, especially in growth-mindset classrooms. They are also morally loaded.

This article does not begin by asking whether Vietnamese IELTS applicants have failed. It asks what they believe failure is. That shift matters. A missed exam score, a lost scholarship, two years of weak English progress, or a decade of postponed study abroad are not automatically the same kind of failure. They become failure through narration. They become meaningful through the language students have been taught to use about effort, discipline, family sacrifice, and the self.

The corpus examined here consists of 2,000 naturally occurring registration narratives produced by Vietnamese IELTS applicants between 2021 and 2026. The applicants included secondary school students, university students, early-career adults, and established working adults. They came from Hanoi, Ho Chi Minh City, Danang, and a wide range of provincial and rural backgrounds. Some were beginners; others already held scores that many learners would consider a success and were aiming higher. In other words, this is not a dataset of weak learners. It is a dataset of learners at different points in the English credential economy (Hamid, 2016; Pearson, 2019).

The most analytically significant pattern in the data is not the frequency of failure. It is the direction of explanation. Across the corpus, students overwhelmingly look inward. They describe failure through laziness, overconfidence, insufficient seriousness, lack of discipline, weak confidence, poor planning, or wasted time. Only 2.0 percent of narratives explicitly name structural conditions such as rural schooling, financial constraints, limited exposure, school disruption, or institutional access. Nearly half of the corpus, 46.2 percent, contains no external attribution at all.

This inward gaze is not evenly distributed. Male respondents more often define failure as a bounded error in strategy. Female respondents more often define it as evidence of insufficient seriousness, discipline, confidence, or deservingness. Rural and provincial respondents produce a wider and rawer vocabulary of failure than urban respondents. Teenagers fail exams; young adults fail time; working adults fail the life project they believe they should already have begun. English proficiency does not remove the pattern. It changes its form. Lower-proficiency learners write as if weak English reveals a weak self. Higher-proficiency learners turn the same moral machinery toward subscores, precision, and perfectionistic targets.

The argument of this article is that failure, in these narratives, is a culturally differentiated moral genre. It is learned, rehearsed, and socially rewarded. It is also costly. When students can explain failure only through the self, they can become extraordinarily persistent. They can also become unable to name the conditions that made persistence so necessary in the first place.

2. Conceptual Background: Failure, Attribution, and the Vietnamese Educational Self

Psychological research on attribution has long shown that people explain success and failure through different combinations of ability, effort, task difficulty, luck, and external context (Weiner, 1985). Educational research has also shown that students who treat ability as improvable may persist longer after setbacks (Dweck, 2006). These frameworks are useful, but they do not fully explain the Vietnamese narratives examined here. The issue is not merely whether students attribute failure to effort; it is why effort becomes a moral category so quickly.

In Vietnamese educational culture, effort is rarely neutral. It is tied to filial duty, family investment, teacher expectation, and the social value placed on disciplined learning. A student who says "I did not try hard enough" *(em chưa cố gắng đủ)* is not simply reporting a study habit. She may also be saying that she wasted parental money, failed to repay trust, or proved herself less worthy than hoped. The sentence carries more social weight than its English translation can easily show.

This is why the present work treats failure as a moral genre rather than only a psychological event. A genre has conventions. It tells speakers how to begin, what to confess, how much emotion to display, what lesson to draw, and what kind of future promise should follow. The modal narrative in this corpus moves through five steps: event identification, emotional consequence, self-attribution, lesson, and forward commitment. The form is so common that it cannot be read only as individual expression. It is a learned educational script.

Yosso's (2005) Community Cultural Wealth framework helps avoid a deficit reading of these students. Their self-discipline, family obligation, persistence, and willingness to continue after disappointment are real resources. Appadurai's (2004) Capacity to Aspire adds another layer: students need maps of possible futures, not simply private dreams. The problem appears when cultural resources that sustain aspiration also make structure disappear. A learner may keep going because she blames herself. That persistence can be admirable. It can also be politically and pedagogically dangerous.

Vietnamese gender scholarship further clarifies why the moral weight of failure differs by gender. Work on gender, migration, and family obligation shows that women's mobility and aspiration are often judged through respectability, relational duty, and moral self-control (Hoang, 2011; Rydström, 2003). Kabeer's (1999) distinction between resources, agency, and achievements sharpens the point: what a respondent narrates as a deficit of agency may equally be a question of resources. This matters in the failure narratives. Men and women both blame themselves. They do not blame the same self.

Male respondents tend to blame the strategic self, the decision-maker who prepared poorly. Female respondents more often blame the moral self, the person who was not serious, disciplined, or worthy enough.

The present work, therefore, reads the registration narratives at three levels. First, it maps what respondents define as failure. Second, it compares how these definitions vary across age, gender, geography, and English proficiency. Third, it asks what remains largely unnamed: school quality, resource geography, class position, family economy, and the unequal distribution of English exposure (London, 2011; Nguyen, 2023; Sánchez and Singh, 2018).

3. Data and Method

The analytical corpus consists of 2,000 IELTS registration records collected between 2021 and 2026 from applicants entering the researcher's IELTS preparation programme. The records were naturally occurring pedagogical data in Silverman's (2014) sense: they were not originally created as research interviews. Applicants completed the forms as part of enrolment, placement, or consultation. The form asked about learning aims, life purpose, previous difficulties (including the applicant's most significant failure and what they had learned from it), English learning history, and the meaning of IELTS for the applicant's future. Figure 1 summarizes the research design, from the source form to the analytical outputs.

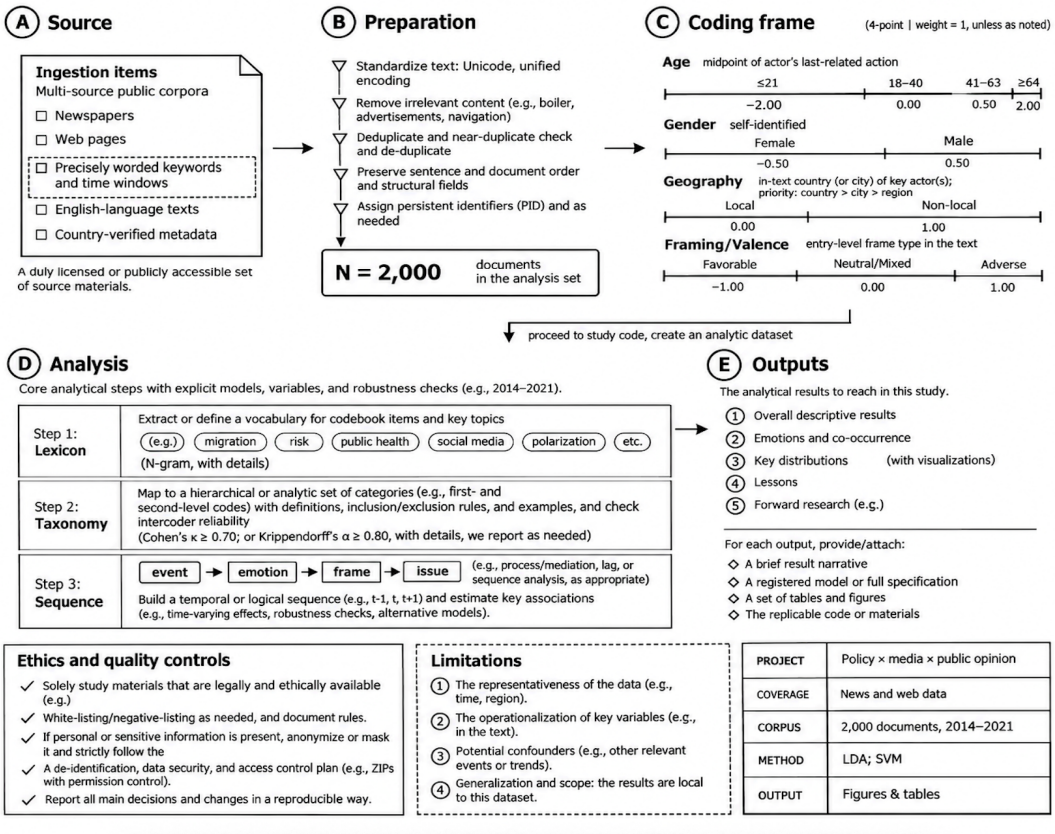


Figure 1. Research design: from registration form to analytical outputs

Source: Own elaboration

For the present study, the dataset was standardized into a consistent analytical structure. Only records containing substantive open-ended responses to the failure, difficulty, or setback prompt were retained. Administrative entries, blanks, and duplicate records were excluded. All identifying information was removed prior to analysis. Quoted participants are labelled P01, P02, and so forth. Where a Vietnamese phrase is analytically important, the English translation is provided first, followed by the Vietnamese original in parentheses.

Age at registration was calculated from the registration timestamp and date of birth. Four life-stage groups were constructed: teenagers aged 17 and below, young adults aged 18 to 22, early adults aged 23 to 30, and mature adults aged 31 and above. Gender was coded from the self-reported gender field. Geographic origin was coded as urban for Hanoi, Ho Chi Minh City, and Danang, and rural or provincial for all other locations or for respondents who explicitly described rural origin (Figure 2). English proficiency was coded from each applicant's entry level or target score: a foundation track (entry below B1, targets around band 5), an intermediate track (targets around band 6), and an advanced track (targets of band 7 or above). The resulting corpus structure is reported in Table 1 and Figure 3.

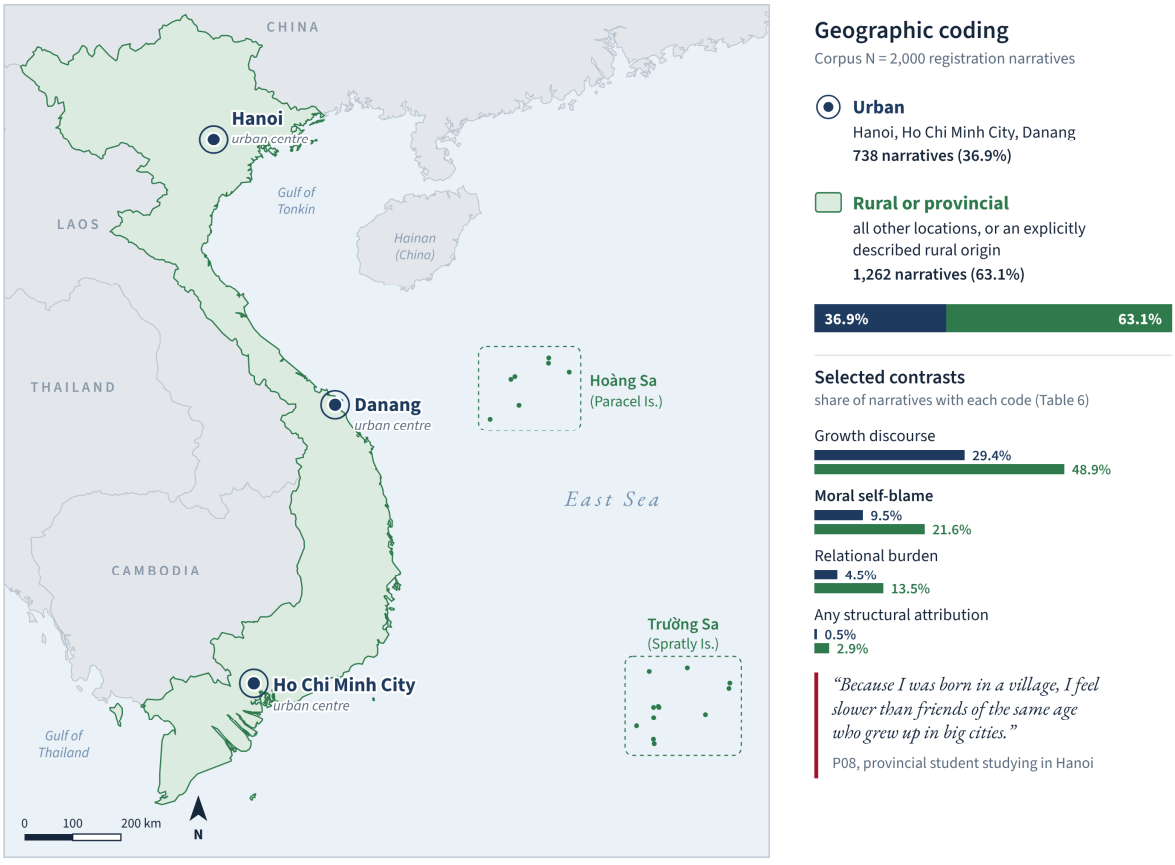


Figure 2. Geographic coding of the corpus: urban centres and rural or provincial origin

Source: Own study, based on coded IELTS registration narratives, N = 2,000. Base map: Natural Earth (public domain).

The analysis combined corpus-assisted discourse analysis (Baker, 2006) with reflexive thematic analysis (Braun and Clarke, 2021). The first coding pass identified recurring failure vocabulary. Vietnamese terms included "failed admission" *(trượt)*, "overconfident or careless" *(chủ quan)*, "lazy" *(lười)*, "not disciplined" *(thiếu kỷ luật)*, "regret" *(hối hận, tiếc nuối)*, "lost direction" *(mất phương hướng)*, "self-doubt" *(tự ti)*, and "disappointed in myself" *(thất vọng về bản thân)*. English equivalents were included where respondents wrote partly or fully in English.

The second coding pass grouped responses into a taxonomy of failure definitions. Categories were not treated as mutually exclusive in the discourse coding. A single narrative could contain exam failure, moral self-blame, and growth discourse. For the taxonomy table, the presence of a failure definition is reported. For demographic tables, the dominant register or the relevant binary code is reported, depending on the table. Percentages should therefore be read as coded rates, not as mutually exclusive totals that add to 100 percent.

The third pass involved close reading of longer narratives. This step focused on sequence: how respondents moved from event to emotion, from emotion to blame, and from blame to lesson. Particular attention was paid to pivot phrases such as "but then I realized" *(nhưng sau đó em nhận ra)*, "even so" *(cho dù vậy)*, "from then on" *(từ đó)*, and "therefore I need to" *(vì vậy em cần phải)*. These phrases often mark the moment when external difficulty is converted into personal responsibility.

Table 1. Corpus structure and analytical variables

Variable	**Groups**	**N**	**Percentage**
Full analytical corpus	Substantive registration narratives	2,000	100.0%
Gender	Female	1,182	59.1%
	Male	818	40.9%
Geography	Urban: Hanoi, Ho Chi Minh City, Danang	738	36.9%
	Rural or provincial	1,262	63.1%
Age	Teenagers, 17 and below	1,080	54.0%
	Young adults, 18 to 22	550	27.5%
	Early adults, 23 to 30	250	12.5%
	Mature adults, 31 and above	120	6.0%
English proficiency track	Foundation, 5+ or below B1	780	39.0%
	Intermediate, 6+	815	40.8%
	Advanced, 7+	405	20.2%

Source: Own study, based on coded IELTS registration narratives, N = 2,000

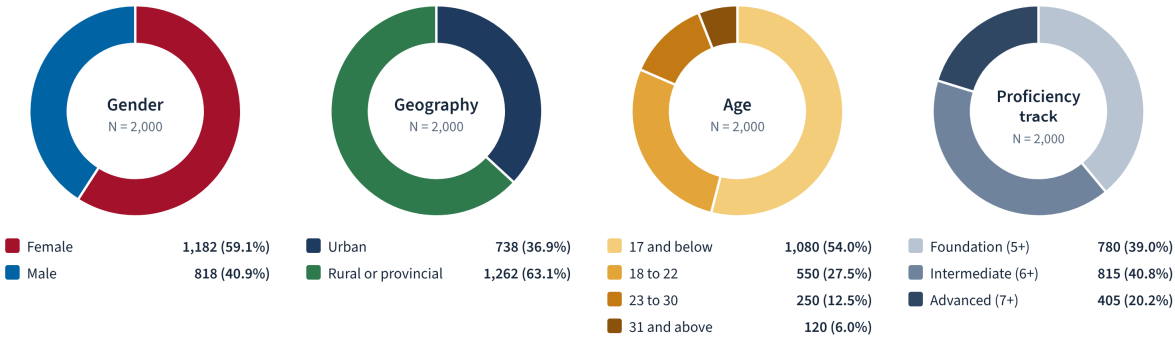


Figure 3. Composition of the analytical corpus

Source: Own study, based on Table 1; coded IELTS registration narratives, N = 2,000

3.1 Data Status, Consent, and Research Ethics

The registration narratives analysed here were originally produced for pedagogical purposes, not for research. Applicants completed the registration form as part of programme enrolment, and the form itself informed them that their responses would be used for educational purposes, including the teacher's understanding of their learning needs, goals, and aspirations. The research use of this material therefore constitutes secondary analysis of pre-existing pedagogical data (Heaton, 2004). Institutional ethical approval for the secondary analysis of the registration archive was obtained from the Swiss Institute of Management and Sciences (SIMS) as part of the author's doctoral research, and the study follows the ethical guidelines for educational research issued by the British Educational Research Association (BERA, 2018). Because the archive spans several enrolment years and re-contacting all past applicants was not feasible, fresh individual consent for research use was not sought; the institutional approval covers the retrospective, fully anonymized secondary analysis of the archive, which poses minimal risk to participants and has no bearing on any past or future educational relationship.

All identifying information, including names, email addresses, telephone numbers, and any details that could reasonably identify an individual or their school, was removed before analysis. Quoted respondents are referred to by participant codes (P01, P02, and so on), and quoted material has been checked to ensure that no combination of quoted details permits re-identification. The original registration files are stored on encrypted, password-protected devices and are kept separate from the anonymized analytical files.

The author's dual role as programme teacher and researcher is acknowledged as both an interpretive resource and an ethical obligation. Analysis was conducted retrospectively, after the enrolment processes to which the narratives belonged had concluded, and no applicant's response had any bearing on access to teaching. Mitigation strategies against confirmation bias included a reflexive research journal, peer debriefing with the doctoral supervisor, and deliberate negative case analysis, of which the resistance narratives in Section 6 are one product.

3.2 Limitations of the Study

Four limitations should be stated explicitly. First, the corpus is drawn from a single IELTS preparation programme. Respondents are therefore an educationally activated, credential-seeking population, and the findings describe how failure is narrated within this population rather than among Vietnamese young people in general. Second, the narratives were produced in a registration context, addressed to a teacher, within a recognizable institutional genre. They may be partly performative: applicants had reasons to present themselves as reflective, motivated, and growth-oriented, and the high frequency of the failure-and-lesson structure should be read partly as evidence of what this genre rewards. This does not weaken the central argument, since the article treats the genre itself as the object of analysis, but it does limit claims about respondents' private beliefs. Third, the keyword-assisted coding underestimates indirect or highly abstract formulations of failure, which appear more often among urban and advanced-proficiency respondents; the close-reading pass mitigates but does not eliminate this, and all reported percentages should be read as coded rates. Fourth, the data are cross-sectional snapshots of self-narration at the moment of registration; the same respondents may narrate the same events differently at other moments in their lives, and translated excerpts, although checked against the Vietnamese originals, inevitably lose some pragmatic nuance.

4. Findings I: Nine Ways of Defining Failure

The first finding is taxonomic. Respondents do not use failure to mean one thing. They apply the label to exam results, wasted time, weak discipline, lost direction, insufficient confidence, unrealized potential, and, much more rarely, interpersonal breakdown. The distribution itself is revealing (Table 2; Figure 4). Exam and score failure is the most frequent explicit category, but the more troubling patterns sit in the attribution codes: self-blame is common, structural attribution is rare, and a small minority reject the failure label altogether.

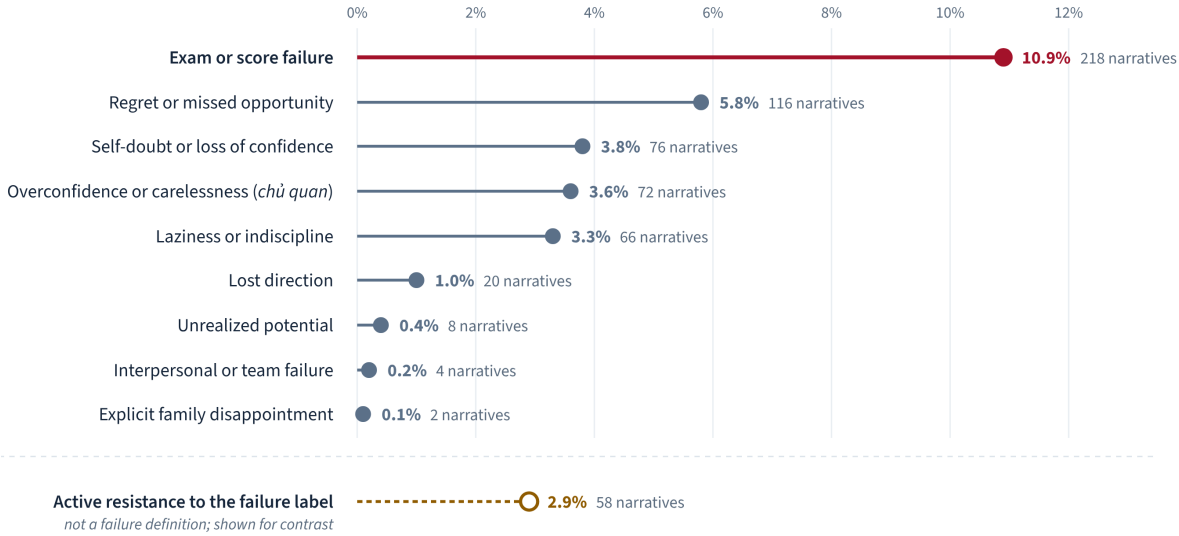


Figure 4. Failure definitions in the full corpus

Source: Own study, based on Table 2; coded IELTS registration narratives, N = 2,000

Table 2. Failure definition taxonomy in the full corpus

Failure definition	Coded narratives	Rate
Exam or score failure	218	10.9%
Regret or missed opportunity	116	5.8%
Self-doubt or loss of confidence	76	3.8%
Overconfidence or carelessness *(chủ quan)*	72	3.6%
Laziness or indiscipline	66	3.3%
Lost direction	20	1.0%
Unrealized potential	8	0.4%
Interpersonal or team failure	4	0.2%
Explicit family disappointment as the main failure	2	0.1%
Active resistance to the failure label	58	2.9%

Source: Own study, based on coded IELTS registration narratives, N = 2,000

4.1 Exam and Score Failure: The Number Becomes Moral Evidence

The most common explicit failure definition is a concrete result: a failed entrance exam, an IELTS score below target, a missed scholarship, a specialist class rejection, or a component score that did not match expectation. This category is highly specific. Respondents often remember the score, the margin, the year, and the institution. Such precision gives the failure an evidentiary quality. It seems objective. It also becomes morally interpretable.

P01, a 16-year-old applicant from outside Hanoi, wrote: "My biggest failure was not getting into the secondary school of my dreams. I was only 0.25 points short. At the time I felt self-doubting and embarrassed, but now I mostly feel regret, regret that I did not put in enough effort and was not disciplined enough for the specialist subject" *(Thất bại lớn nhất của em là không đỗ vào trường cấp ba mơ ước. Em thiếu 0,25 điểm. Em tiếc vì em chưa cố gắng đủ và chưa đủ kỷ luật với môn chuyên).*

The margin is tiny. The moral conclusion is not. A 0.25-point difference, which may reflect testing variance, coaching access, exam pressure, or concentrated urban preparation, becomes proof of insufficient discipline. The number does not remain a number. It becomes an accusation.

A university student described getting IELTS 7.0 overall but missing her component targets: "I was very disappointed even though I got 7.0 overall. The component scores were lower than what I expected and worked for" *(Em rất thất vọng dù overall là 7.0 vì điểm từng kỹ năng thấp hơn kỳ vọng).* This is a different kind of failure. The score would be considered strong by many learners. It fails because aspiration has moved upward. Exam failure is elastic. It expands to meet the next standard.

4.2 Overconfidence: The Moral Failure of the Capable Student

The Vietnamese term "chủ quan" is difficult to translate cleanly. It means overconfident, careless, insufficiently vigilant, or too sure of oneself. In educational narratives, it is the failure mode of the capable student. It implies that success was possible, perhaps expected, but the respondent did not treat the task with the seriousness it deserved.

P02, a male secondary student, wrote: "I entered a school subject competition and was confident because I studied well in class and my teacher trusted me. But when I took the test, the result was lower than expected and even lower than some classmates who were only average. I kept asking myself why I had let myself fail like that. Then I realized the questions were not difficult. I just needed to think more carefully" *(Em cứ tự hỏi vì sao mình lại để bản thân thất bại như vậy. Đề không khó, em chỉ cần suy nghĩ kỹ hơn).*

This is not a narrative of low ability. It is a narrative of mismanaged ability. The respondent's self-worth remains relatively intact because the failure is attached to a lapse: he did not think carefully enough. The solution is vigilance. This pattern appears more often among male respondents and among teenagers with prior records of school success.

Several respondents used the idiom "sleeping on victory" *(ngủ quên trên chiến thắng)*. The idiom is culturally efficient. It compresses a whole educational morality into one phrase: past success is dangerous if it weakens discipline. It also reveals why Vietnamese failure narratives so often move quickly from achievement to guilt. Success does not relax the student. It creates another standard to maintain.

4.3 Laziness and Indiscipline: When Failure Becomes Character

Laziness and indiscipline form one of the harshest self-attribution clusters in the corpus. Unlike overconfidence, which points to a bad decision or lapse in attention, laziness describes a defect that seems to live inside the person. The lazy student did not simply choose the wrong method. She allowed herself to become the wrong kind of student.

P03, a 16-year-old girl, wrote: "I had intended to study IELTS from Year 10 and join extracurricular activities to get a scholarship at an international university. But I was lazy and kept procrastinating, wasting so much time on things that were not worthwhile. I feel very, very, very regretful for wasting that time" *(Em lười và cứ trì hoãn, lãng phí rất nhiều thời gian vào những thứ không đáng. Em rất rất rất hối hận).*

The triple intensifier is unusual in a formal registration response. It makes the self-blame feel less polished and more immediate. The failure is not only that IELTS preparation started late. It is that a period of youth has already been morally misused. This is one of the more notable patterns in the corpus: teenagers have learned to narrate time as wasted with the same vocabulary that adults use for lost decades.

Another respondent wrote: "I often miss deadlines or do not complete things properly, and it keeps repeating. Each time I know I have to change, but I return to the old road" *(Em hay trễ deadline hoặc làm không tới nơi tới chốn. Lần nào em cũng biết phải thay đổi nhưng lại ngựa quen đường cũ).* The idiom "the horse returns to the old road" *(ngựa quen*

đường cũ) frames failure as habit. The student sees the pattern clearly, but recognition does not yet produce escape.

4.4 Regret and Missed Opportunity: Young People Already Living Retrospectively

Regret narratives differ from exam narratives because their object is time. The key terms are "regret" *(hối hận)*, "nostalgic regret" *(tiếc nuối)*, "if only" *(giá mà)*, "should have" *(đáng lẽ, lẽ ra)*, and "missed opportunity" *(bỏ lỡ cơ hội)*. These narratives are common among adults, but they also appear surprisingly early.

P04, aged 17, wrote: "My biggest failure is not knowing how to use my time. In Year 10 I was told when to start preparing for IELTS, but I had just entered a specialist school and thought time would not pass so quickly. Now, at the end of Year 11, I have to cram everything" *(Thất bại lớn nhất của em là không biết sử dụng thời gian. Giờ cuối lớp 11 em phải nhồi tất cả)*.

The respondent is still a teenager, yet the narration already has the structure of adult regret. A two-year delay is framed as a serious moral loss. This is not a trivial point. It shows how early Vietnamese students are trained to treat time as an investment account and delay as personal fault.

Among older respondents, the time scale lengthens. P05, a 31-year-old woman, wrote: "My failure is that after graduating I wanted to study abroad, but I did not have confidence that I was capable of going. Up to now, at 31, I still feel regret. I hope I can repair this mistake" *(Thất bại của em là sau khi tốt nghiệp em muốn đi du học nhưng không đủ tự tin. Đến 31 tuổi em vẫn tiếc. Em muốn sửa chữa sai lầm này)*.

The phrase "repair this mistake" *(sửa chữa sai lầm này)* is severe. It treats a decade of financial, institutional, emotional, and biographical conditions as a single error that the self must correct. IELTS enrolment becomes more than a language decision. It becomes an attempt to reopen a life route that the respondent believes she personally failed to enter.

4.5 Lost Direction and Self-Doubt: Failure Without a Single Event

Some narratives do not identify a discrete failure. They describe a state: being lost, drifting, circling, lacking direction, or no longer trusting oneself. This category appears less frequently than exam failure, but it matters because it shows failure becoming existential.

P06 described "four years lost without a clear future direction, moving among different short-term jobs without finding a clear life purpose or passion" *(bốn năm mất phương hướng, loay hoay giữa nhiều công việc ngắn hạn mà không tìm được mục tiêu sống rõ ràng)*. This is not a failed exam. It is a failed relation to time and direction. The person has not lost one opportunity. She feels she has lost motion itself.

Self-doubt narratives operate similarly. P07, a 29-year-old professional, wrote: "My English did not meet the demands of work, and it affected my job more than I thought. Because I could not use it well, my character at work became increasingly timid; I lacked

confidence and felt like a failure" *(Vì không dùng được tiếng Anh tốt, tính cách của em ở công ty ngày càng rụt rè, thiếu tự tin và thấy mình thất bại).*

The causal chain is revealing: English skill gap, workplace timidity, damaged self-concept. The English problem does not stay technical. It spreads. This spread from skill deficit to self-definition is one of the strongest patterns in the corpus, especially among women and lower proficiency learners.

5. Findings II: Failure Across Age, Gender, Geography, and English Proficiency

The taxonomy shows what failure means. The demographic comparisons show how unevenly those meanings are distributed. Four patterns stand out. Age changes the time scale of failure. Gender changes the part of the self that gets blamed. Geography changes the rawness and range of failure discourse. English proficiency changes the object of failure, but it does not remove the inward moral gaze. Table 3 and Figure 5 first set out the core attribution codes for the full corpus.

Table 3. Core attribution patterns in the full corpus

Code	Coded narratives	Rate
No external attribution	924	46.2%
Growth discourse	834	41.7%
Self-attribution language	564	28.2%
Instrumental attribution	394	19.7%
Moral self-blame	342	17.1%
Relational burden	204	10.2%
Any structural attribution	40	2.0%
Urban or rural educational gap explicitly named	26	1.3%
Financial constraint explicitly named	14	0.7%
COVID related learning disruption named	10	0.5%
Teacher, school, or programme transition named	6	0.3%

Source: Own study, based on coded IELTS registration narratives, N = 2,000

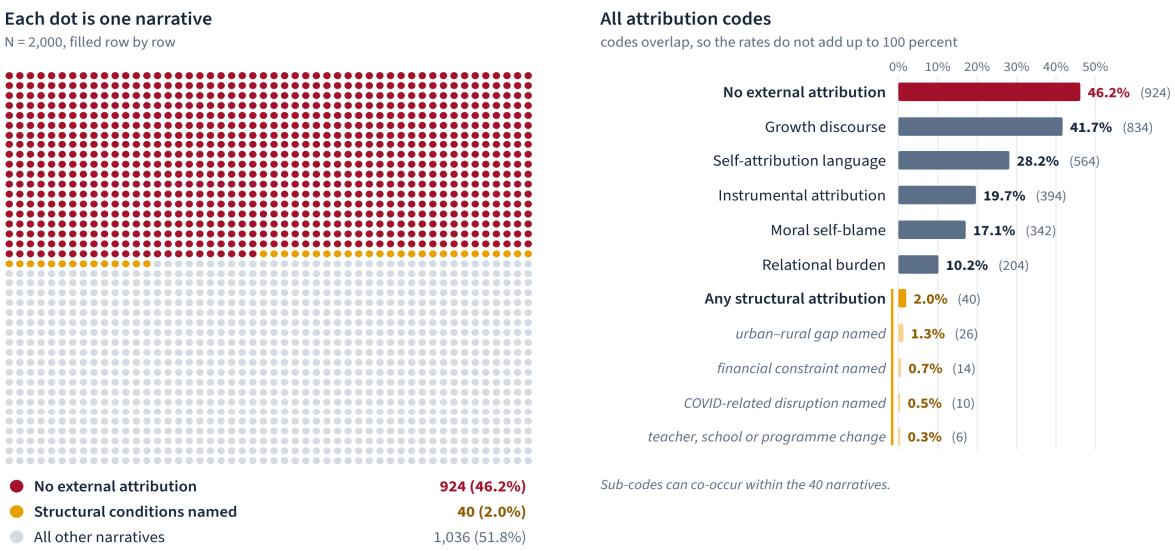


Figure 5. The missing system: external and structural attribution in the full corpus

Source: Own study, based on Table 3; coded IELTS registration narratives, N = 2,000

5.1 Age: From Event Failure to Life Failure

Age does not simply change what respondents have experienced. It changes what failure is allowed to mean. Teenagers most often describe failure as an event. They failed an entrance exam, missed a score, lost a competition, or became overconfident before a test. Young adults begin to describe failure as temporal mismanagement: they did not start early enough, chose the wrong direction, wasted two or three years, or failed to build themselves in time. Adults describe failure as deferred life: the study abroad plan not taken, the career requiring English that never became accessible, the self that should already have arrived. The coded rates show where this shift lies (Table 4; Figure 6): exam or score failure is reported at broadly similar rates across age groups (7.1 to 11.6 percent); what changes is the surrounding vocabulary, with overconfidence peaking among teenagers (4.9 percent) and regret rising from 4.4 percent among teenagers to 7.5 percent among mature adults.

A particularly consequential point is how early this retrospective language appears. Teenagers in the corpus already write as if time has been lost. They do not merely say “I did badly in an exam”. They say, “I wasted time”, “I should have started earlier”, or “I let opportunities pass”. Adolescence is the period in which self-representations become increasingly abstract, comparative, and evaluative (Harter, 1999); in this corpus, that developmental shift arrives already shaped by an educational morality of time. Vietnamese educational culture appears to teach a retrospective relationship to the self very early. Students learn to look back on themselves almost before they have had time to live forward.

Table 4. Selected failure codes by age group

Failure code	Teen ≤17 (n = 1,080)	Young adult 18-22 (n = 550)	Early adult 23-30 (n = 250)	Mature adult 31+ (n = 120)
Exam or score failure	11.0%	7.1%	11.6%	10.8%
Overconfidence *(chủ quan)*	4.9%	1.8%	2.8%	1.7%
Laziness or indiscipline	3.6%	2.0%	4.8%	2.5%
Regret or missed opportunity	4.4%	6.3%	6.0%	7.5%
Lost direction	0.7%	1.6%	1.2%	0.8%
Self-doubt or loss of confidence	4.2%	3.3%	3.2%	4.2%
No external attribution	48.0%	45.1%	44.4%	41.7%

Source: Own study, based on coded IELTS registration narratives, N = 2,000

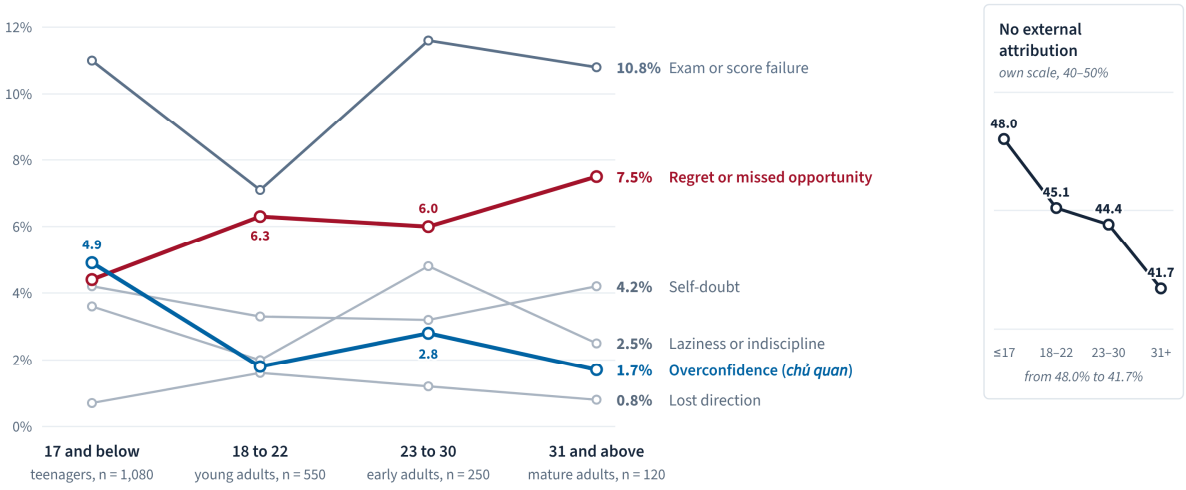


Figure 6. Selected failure codes by age group

Source: Own study, based on Table 4; coded IELTS registration narratives, N = 2,000

5.2 Gender: Men Blame Decisions, Women Blame Selves

The gendered pattern is one of the article's sharpest findings. Male and female respondents both blame themselves. The difference lies in which self is blamed.

Male respondents more often locate failure in a decision or strategy: they were overconfident, allocated time badly, underestimated an exam, chose the wrong method, or failed to prepare a specific skill. Female respondents more often locate failure in motivation, discipline, seriousness, confidence, or worthiness. The male failure is usually correctable through planning. The female failure more often requires moral repair.

The difference is visible in the numbers (Table 5; Figure 7). Instrumental attribution appears in 27.3 percent of male narratives but only 14.5 percent of female narratives. Moral self-blame appears in 21.4 percent of female narratives compared with 10.9 percent of male narratives. Relational burden, meaning the narration of failure as harm to family, parents, teachers, or those who invested in the respondent, appears in 14.1 percent of female narratives compared with 4.5 percent of male narratives.

This does not mean Vietnamese boys are carefree or Vietnamese girls are uniquely fragile. It means that the available moral grammar of failure is gendered. Boys can more easily say "I chose the wrong strategy". Girls more often write as if failure exposes insufficient discipline, insufficient gratitude, or insufficient seriousness. The practical result is stark: the same missed score may become a fixable planning error for one student and a character problem for another.

Table 5. Attribution patterns by gender

Code	Female (n = 1,182)	Male (n = 818)
Growth discourse	504 (42.6%)	330 (40.3%)
Self-attribution language	336 (28.4%)	228 (27.9%)
Instrumental attribution	171 (14.5%)	223 (27.3%)
Moral self-blame	253 (21.4%)	89 (10.9%)
Relational burden	167 (14.1%)	37 (4.5%)
Any structural attribution	28 (2.4%)	12 (1.5%)

Source: Own study, based on coded IELTS registration narratives, N = 2,000

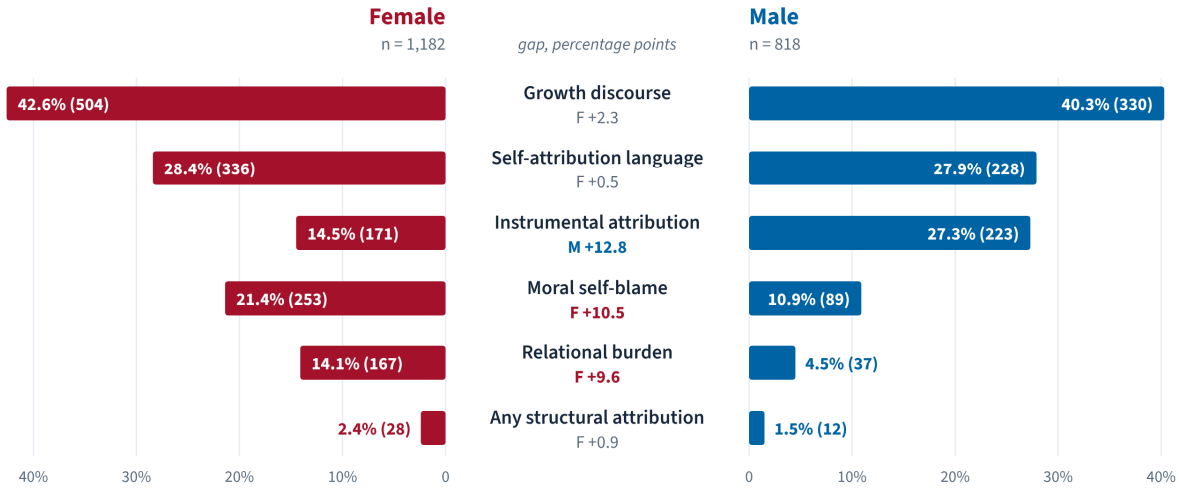


Figure 7. Attribution patterns by gender

Source: Own study, based on Table 5; coded IELTS registration narratives, N = 2,000

5.3 Geography: The Rural Student Carries the System as Personal Deficit

The geographic pattern is even more pronounced (Table 6; Figure 8). Rural and provincial respondents do not merely report more obstacles. They produce a more intense language of internal responsibility. Growth discourse appears in 48.9 percent of rural and provincial narratives compared with 29.4 percent of urban narratives. Moral self-blame appears in 21.6 percent of rural and provincial narratives compared with 9.5 percent of urban narratives. Structural attribution remains rare in both groups, but it is more visible among rural respondents, at 2.9 percent compared with 0.5 percent among urban respondents.

The raw comparison could be misread. It does not necessarily mean urban students suffer less or reflect less. Urban students often have more practice producing polished educational narratives. They may describe failure in more abstract or metacognitive language. Rural respondents often write more directly: "I am slower", "I lack confidence", "I did not have an environment", "I am afraid to speak". The directness may partly reflect genre difference. It also reveals a particularly consequential pattern: students from less resourced backgrounds are more likely to narrate deprivation as personal deficiency.

P08, a provincial female student studying in Hanoi, wrote: "Because I was born in a village, I feel slower than friends of the same age who grew up in big cities. Sometimes I feel lost and lacking in knowledge when people around me discuss English topics" *(Vì em sinh ra ở làng quê, em thấy mình chậm hơn các bạn cùng tuổi lớn lên ở thành phố lớn. Đôi khi em thấy lạc lõng và thiếu kiến thức khi mọi người xung quanh nói về các chủ đề tiếng Anh).*

The sentence names geography. Then it turns geography into the self: "I feel slower". The village becomes an internal lag. The city becomes the standard. Reay (2007) describes a comparable process among working-class children in English inner-city schools, who absorbed the negative valuations attached to their schools and neighbourhoods into their sense of themselves. This is one of the central findings of the dataset. Rural inequality does not appear mainly as anger at unequal schooling. It appears as a young person believing she is behind.

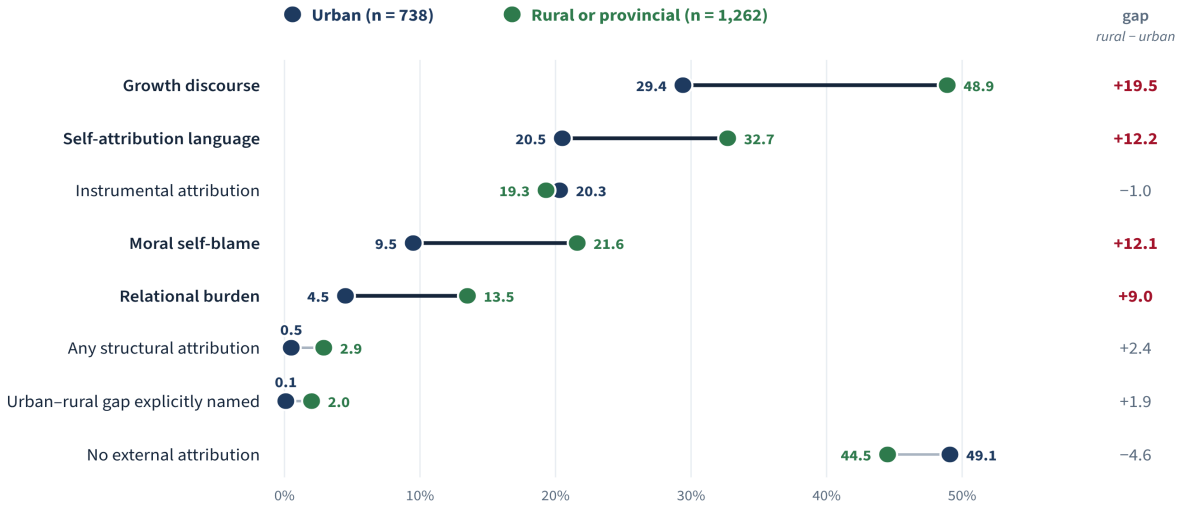


Figure 8. Attribution patterns by geographic origin

Source: Own study, based on Table 6; coded IELTS registration narratives, N = 2,000

Table 6. Attribution patterns by geographic origin

Code	Urban (n = 738)	Rural or provincial (n = 1,262)
Growth discourse	217 (29.4%)	617 (48.9%)
Self-attribution language	151 (20.5%)	413 (32.7%)
Instrumental attribution	150 (20.3%)	244 (19.3%)
Moral self-blame	70 (9.5%)	272 (21.6%)
Relational burden	33 (4.5%)	171 (13.5%)
Any structural attribution	4 (0.5%)	36 (2.9%)
Urban or rural educational gap explicitly named	1 (0.1%)	25 (2.0%)
No external attribution	362 (49.1%)	562 (44.5%)

Source: Own study, based on coded IELTS registration narratives, N = 2,000

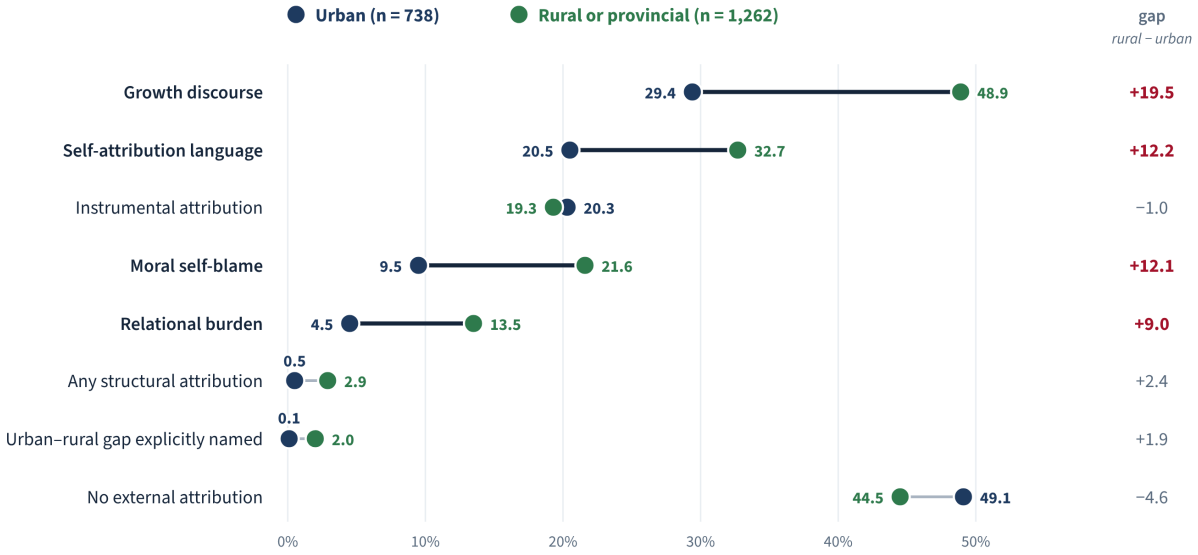


Figure 8. Attribution patterns by geographic origin

Source: Own study, based on Table 6; coded IELTS registration narratives, N = 2,000

5.4 English Proficiency: The Proficiency Paradox

English proficiency adds a further complication. One might expect higher proficiency learners to narrate failure with less shame. The data suggest a more complex pattern (Table 7; Figure 9). Proficiency changes the object of failure, but it does not remove the moral structure.

Foundation-track learners, mostly aiming for 5+ or entering below B1, show the highest rates of self-doubt and structural attribution. Their narratives often describe English as something that does not enter the body properly: "I learn more slowly than others" *(em học khó vô hơn các bạn)*, "I cannot react" *(em không phản xạ được)*, "I am afraid to speak" *(em sợ nói)*. The skill gap becomes a self-gap.

Intermediate learners, usually aiming for 6+, produce the most conventional growth narratives. They describe effort, method, discipline, and the hope of moving from unstable competence to usable competence. The failure is often framed as not yet having a system.

Advanced learners, especially those aiming for 7+, produce a different failure discourse. They are less likely to say they are incapable. They are more likely to report overconfidence, score disappointment, component imbalance, and perfectionistic failure. A 7.0 overall can become a failure if Writing or Speaking is lower than expected. Higher English proficiency does not liberate students from failure; it refines the criteria by which failure is measured.

Table 7. Failure patterns by English proficiency track

Code	**Foundation 5+ or below B1 (n = 780)**	**Intermediate 6+ (n = 815)**	**Advanced 7+ (n = 405)**
Exam or score failure	8.7%	11.3%	14.6%
Self-doubt or loss of confidence	5.9%	3.5%	1.7%
Moral self-blame	20.4%	16.8%	12.6%
Instrumental attribution	12.9%	20.1%	31.4%
Overconfidence *(chủ quan)*	1.9%	3.6%	7.4%
Any structural attribution	3.2%	1.7%	0.7%
Growth discourse	44.8%	43.2%	34.6%

Source: Own study, based on coded IELTS registration narratives, N = 2,000

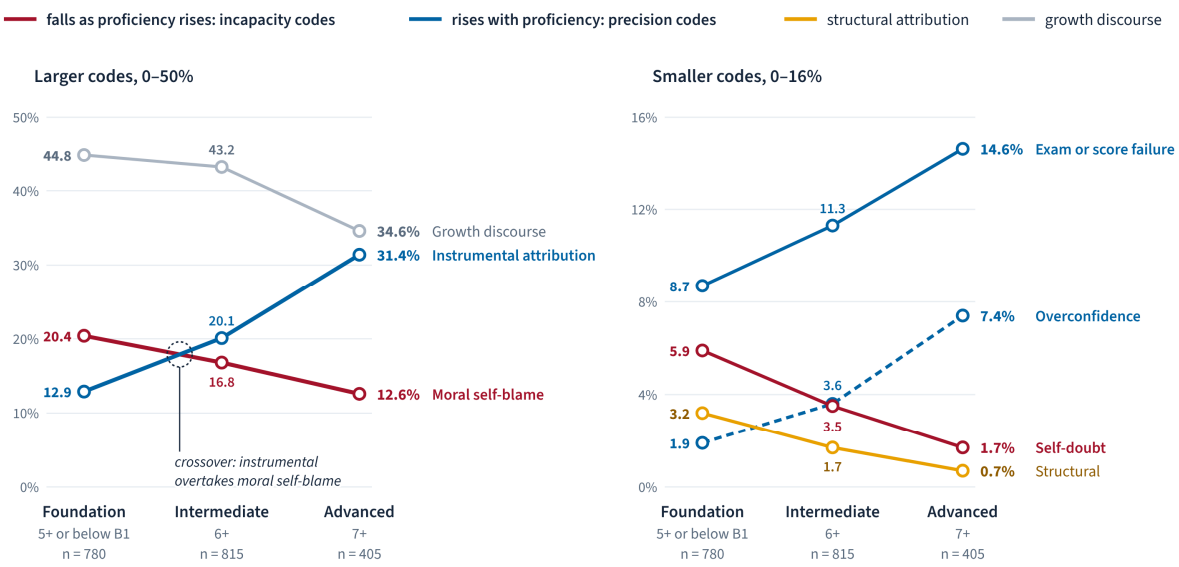


Figure 9. Failure patterns by English proficiency track

Source: Own study, based on Table 7; coded IELTS registration narratives, N = 2,000

5.5 Additional Evidence: Failure in the Respondents' Own Words

The statistical pattern becomes clearer when placed beside the language of the respondents themselves. The following excerpts were selected because they show the main conversion mechanism running through the corpus: a concrete educational event becomes a judgement on effort, seriousness, confidence, or worth. I keep the English translation first and place the Vietnamese wording in parentheses where the original phrasing carries analytical weight.

Excerpt 1. Exam failure becomes family cost and moral self-assessment

P11 described missing the public-school cutoff in the Year 10 entrance examination. The event is narrated as an academic result, but it immediately becomes a family and moral problem because the alternative is a private school with much higher tuition.

> One failure for me was not reaching the cutoff score in the Year 10 entrance examination for a public school, so I had to apply to a private school with much higher tuition. At that time, I looked down on the exam and did not really focus on studying. Even the Literature topic had been flagged by the teacher, but I only skimmed it and did badly. Now I see it as a major mistake, although it also gave me a better ability to self-study and assess my own capacity.
>
> *Một thất bại đối với em là đã không đạt đủ điểm chuẩn trong kì thi vào 10 để vào một trường công mà phải xét tuyển vào một trường tư với mức học phí cao hơn nhiều... Em hiện tại thì nhận thấy nó là một sự sai lầm lớn, nhưng nó cũng cho em khả năng tự học tốt hơn trước đó, tự đánh giá năng lực bản thân tốt hơn.*

The striking feature is not simply that the respondent failed an entrance exam. The respondent folds together public-school access, family tuition burden, insufficient focus, and moral correction. The school system remains background. The self becomes the main explanatory site.

Excerpt 2. High achievement still becomes failure when the internal standard rises

P12 had already obtained an objectively strong IELTS result but narrated the outcome as failure because the component scores did not match expectation. This is the proficiency paradox in miniature.

> My failure was probably the IELTS exam on 25 September. Even though I had revised for a long time, self-studied with quite high intensity, I still did not reach the result I wanted, especially in Speaking, the skill I had felt most confident in. I was very disappointed even though I got 7.0 overall, because the component scores were not high compared with what I had expected and worked for. I hope to improve all skills evenly and develop from the foundation I already have.
>
> *Dù đã ôn khá lâu, tự ôn với cường độ khá dày nhưng em vẫn chưa đạt được kết quả như mong muốn... Em rất thất vọng dù được overall 7.0 nhưng điểm thành phần chưa cao so với những gì mình đã mong đợi và cố gắng.*

Advanced proficiency does not end failure. It changes the threshold. The beginner fears incapacity; the advanced learner moralizes precision. A 7.0 can still be narrated as disappointment if it fails the imagined self.

Excerpt 3. English becomes a failed life project rather than a weak subject

P13, a working adult, did not describe a single exam failure. He described English learning itself as a failed project that had repeatedly restarted without results.

> I consider English learning to be my failure up to this point. During university I was determined many times to learn English in different ways: buying materials to self-study at home, registering for courses at centres, and so on. However, those attempts did not bring results. I think I did not have a really good method, or I did not invest enough time to be ready to learn English.
>
> *Em cho rằng việc học tiếng Anh là một thất bại của em đến thời điểm này... Em nghĩ mình chưa có một phương pháp học thật tốt, hoặc chưa đầu tư thời gian để sẵn sàng học tiếng Anh.*

This excerpt shows why adult failure narratives are temporally heavier. Failure is no longer a bad score. It is accumulated delay, repeated restarting, and the feeling that one has not yet become the person who should have begun earlier.

Excerpt 4. Work in the wrong role is not called failure, but is described as erosion

P14 resisted the word failure, but the alternative phrasing is even more revealing. She describes being placed in an unwanted job not as formal failure, but as a slow depletion of the self.

> The first time I applied for a job, the result was not what I wanted because the position I wanted had no quota, so I had to take a position that did not match my ability. This may not be a failure, but when you do work you do not like, it makes you wither. While doing that job, I still tried to complete my duties well and waited for the chance to move into the work I liked.
>
> *Đây có thể không phải là thất bại, nhưng khi làm một việc mình không thích sẽ làm mình bị héo mòn. Khi làm công việc đó, em luôn cố gắng hoàn thành tốt nhiệm vụ và chờ thời cơ để chuyển sang công việc yêu thích.*

This is a useful negative case. The respondent refuses the failure label, but still narrates a mismatch between aspiration and available opportunity. The language of withering is more bodily than strategic. It suggests that not all failure is experienced as an event; some of it is endured as duration.

Excerpt 5. University English turns a confident learner into a frightened self

P15 described the first encounter with English for academic or professional communication as a collapse of confidence. The movement from skill gap to self judgement is explicit.

> In my specialist English class at university, during Listening and Speaking, I was shaking because I was afraid of being called on. Even though twelve years of schooling did not make me terrible at English, when I had to listen and speak clumsily, I felt so disappointed. I was desperate. I felt very disappointed

> in myself and lost direction. I realized I could not continue being lazy; it was time for me to make more effort, and I really needed someone to guide me in English.
>
> *Đến giờ Listening Speaking em run cầy sấy chỉ sợ bị gọi... em tuyệt vọng lắm cô ạ. Lúc đó thì em thấy rất rất thất vọng về bản thân và mất định hướng, em thấy bản thân không thể tiếp tục lười biếng nữa.*

The English difficulty does not remain technical. It becomes fear, desperation, lost direction, and then laziness. The route is harsh but common: I cannot perform, therefore something in me must change.

Excerpt 6. Overconfidence is treated as the failure of a capable student

P16 used the standard overconfidence grammar. The respondent had the opportunity to enter a specialist school, but retrospectively attributes the outcome to ease, delay, and insufficient preparation.

> My failure was failing the provincial specialist high school entrance exam because I was overconfident. I learned that I need to prepare more carefully for every exam and study hard to achieve the result I want.
>
> *Thất bại là em đã thi trượt trường chuyên cấp 3 của tỉnh do chủ quan, nên em rút ra được rằng mình cần phải chuẩn bị kĩ lưỡng hơn cho mọi kì thi và cố gắng ôn luyện, học tập thật chăm chỉ để đạt kết quả mình mong muốn.*

This kind of account is less self-destroying than the laziness narratives. It protects capacity. The student did not say "I am incapable". The student says, in effect, "I had the ability but mishandled it". That difference helps explain why overconfidence is a more masculine and more strategically bounded failure type in the corpus.

Excerpt 7. Ambition itself becomes blameworthy when goals scatter

P17 narrated failure as the inability to determine a clear goal. The key moral term is not laziness but ambition that became excessive and unfocused.

> The failure I want to mention is not being able to identify a clear goal for myself. I was too competitive and too ambitious, and that made me lose many opportunities. Because I hesitated between continuing with the competition team and switching back to IELTS, I missed the opportunity to sit for the national team selection. Later, because I could not find a suitable teacher and chose cheap low-quality courses, I wasted my family's time and money. Now I have to stay home to study IELTS and cannot go abroad yet. This may be one of the major failures I am facing because of my own ambition.
>
> *Thất bại mà em muốn nhắc đến là việc không xác định được mục tiêu rõ ràng... em đã quá hiếu thắng và tham vọng... tốn thời gian và tiền bạc của gia đình... chỉ vì sự tham vọng của bản thân.*

The excerpt is important because it shows ambition turning against itself. Wanting too much, or wanting in too many directions, becomes the cause of failure. The family appears again through wasted money and delayed mobility.

Excerpt 8. Rural disadvantage is named, then softened into personal catch-up work

P18, a provincial female student, does name a structural condition: limited opportunities for real speaking practice. But the narrative quickly returns to improvement, confidence, and participation.

> In learning English, I have the most difficulty with listening and speaking. I often lose confidence when communicating, especially when native speakers talk fast or use academic vocabulary. In addition, I have not had many opportunities to practise speaking in real situations. I hope to join communication classes, English clubs, or extracurricular activities using English, so I can improve this skill and become more confident when using a foreign language.
>
> *Em thường mất tự tin khi giao tiếp... em cũng chưa có nhiều cơ hội để luyện nói trong môi trường thực tế. Em rất mong được tham gia các buổi học giao tiếp, câu lạc bộ tiếng Anh hoặc các hoạt động ngoại khóa có sử dụng tiếng Anh.*

This is one of the more balanced narratives. It contains a structural hint: lack of real speaking environment. Yet the student still frames the solution as individual catch-up through more participation. This is not wrong. It is just incomplete.

Excerpt 9. The big city advantage appears as a quiet comparative fear

P19 asked whether not being from a specialist school would block access to language study at university. The concern is not expressed as system critique. It appears as a nervous question.

> I am not a student from a specialist school. Can I still study a language major at university? I see that students from specialist schools or big cities have better advantages in foreign languages.
>
> *Em không phải học sinh trường chuyên thì lên đại học có theo ngành ngôn ngữ được không ạ, tại vì em thấy các bạn học chuyên hay ở thành phố lớn thì có lợi thế tốt hơn về học ngoại ngữ.*

The sentence is small, but it says a great deal. Urban advantage is visible to the respondent. What is missing is a vocabulary of entitlement or structural claim. The student does not say the system is unequal. She asks whether she is still allowed to aspire.

Excerpt 10. High academic status does not remove the need to be pushed

P20, a doctoral student in biomedical science abroad, resisted excessive drama around failure but still used the language of discipline and external pressure when describing English preparation.

> I feel I am no longer young enough to think too much about the times I have failed. For me, failure is part of life. Up to now, I am not too regretful, sad, or disappointed about my failures. Every day I am trying to complete the plans and goals I have set. At the same time, I want a stable learning route that will push me, help me overcome laziness, recall vocabulary, and prepare better before living and studying in an English-speaking country.

> *Đối với em thất bại đã là một phần của cuộc sống... Mỗi ngày em đang luôn cố gắng hoàn thành các kế hoạch và mục tiêu của mình... em muốn được "ốp" vì mong muốn có lộ trình học ổn định, giúp bản thân "vượt lười".*

This example complicates any simple class or proficiency story. Even a high-status academic respondent who normalizes failure still requests discipline from outside. The growth imperative remains, but it is held with more distance and less shame.

6. Resisting the Failure Label

A small but important group of respondents resisted the premise of the question. Fifty-eight narratives, 2.9 percent of the corpus, refused, softened, or redefined failure. Their number is small. Their analytical value is large.

Some respondents offered a philosophical reframe. P09, a doctoral student, wrote: "I feel I am no longer young enough to think too much about the times I have failed. For me, failure is part of life. Up to now, I am not overly regretful, sorrowful, or disappointed about my failures. Every day I am trying to complete the plans and goals I have set for myself" *(Tôi không còn trẻ để nghĩ quá nhiều về những lần thất bại. Với tôi, thất bại là một phần của cuộc sống).*

This response refuses the expected emotional script. It does not confess. It normalizes. The respondent does not deny failure; she denies that failure deserves the moral drama the question invites.

Other respondents challenged the definition. P10 wrote: "To outside eyes I certainly have many failures in exams and competitions. Throughout secondary school I was always on the school competition team but never won anything notable. But for me, that is not really a problem. I enjoyed being able to study and was able to get into good schools" *(Trong mắt người ngoài chắc em có nhiều thất bại, nhưng với em đó không hẳn là vấn đề).*

This is one of the strongest acts of interpretive resistance in the corpus. The respondent accepts the external facts but rejects the external evaluation. Not winning competitions does not automatically count as failure. Enjoying learning and entering good schools can be the more relevant measure.

Another respondent wrote: "I think I do not have a failure. What I regret is not learning language earlier, because I missed many opportunities. But currently I am remedying that, so I do not think it is a failure" *(Em nghĩ em không có thất bại. Điều em tiếc là không học ngoại ngữ sớm hơn, nhưng hiện tại em đang khắc phục nên em không nghĩ đó là thất bại).* The logic is precise: something counts as failure only if it remains unremedied. Once repair has begun, the label dissolves.

These resisters show that the failure category is not natural. It is applied. It can also be withheld. The fact that only 2.9 percent do so makes the wider pattern more visible: most respondents know the expected genre and perform it without resistance.

7. Discussion: Four Central Findings from the Corpus

The article's contribution is not simply a list of failure types. The data point toward four larger claims about Vietnamese educational subjectivity, which the article names failure privatization, gendered moral self-location, rural failure amplification, and the proficiency paradox.

First, failure is heavily privatized. Structural attribution appears in only 2.0 percent of narratives, while 46.2 percent contain no external attribution at all. This is the core finding. Students do not merely fail to mention systems; they possess an abundant vocabulary for not mentioning them. They can say lazy, careless, not serious, lacking confidence, late, undisciplined, overconfident, and regretful. They rarely say under-resourced school, unequal access, weak speaking environment, exam industry, cost barrier, or provincial disadvantage. In Bourdieu's (1977) terms, these conditions remain within doxa, the realm of the undiscussed that is taken for granted rather than contested. Bettie (2003) documents a similar absence among young women who, lacking a language of class, read class difference as individual difference.

Second, failure is gendered at the level of moral location. Male respondents more often narrate a failed decision. Female respondents more often narrate a flawed self. This is why gender difference cannot be reduced to confidence. The question is not only whether girls feel less confident. It is why lack of confidence becomes morally charged, why being insufficiently serious becomes a failure of daughterhood as well as a learning problem, and why family investment appears more often in female failure narratives.

Third, geography is internalized. Rural and provincial learners often name the consequences of unequal access, but they tend to experience those consequences as personal delay. They are slower. They lack environment. They cannot react. They feel lost. The system appears through the body and the self, not as a structure outside them. This is a consequential finding because it shows how inequality survives: it teaches the disadvantaged to describe its effects as their own traits.

Fourth, proficiency does not end failure. It reorganizes it. Lower proficiency learners moralize incapacity. Advanced learners moralize precision. The beginner says, "I cannot speak, so I lack confidence". The advanced learner says, "I got 7.0, but the component scores prove I was not ready enough". Both are inside the same moral economy, though at different levels of linguistic capital.

Taken together, these findings refine growth-mindset debates. The problem is not that students should stop learning from failure. The problem is that the failure-and-lesson genre can become too successful. It can teach students to produce a lesson before they have had permission to ask what produced the failure. A student who immediately says "I must try harder" may be demonstrating resilience. She may also be closing the door on structural understanding.

8. Implications for Educational Practice and Policy

The findings have direct implications for English language education, IELTS preparation, and wider educational policy in Vietnam.

First, teachers should separate skill diagnosis from moral diagnosis. A weak Writing score is not laziness. Slow speaking response is not necessarily low confidence as a personality trait. It may reflect limited exposure, lack of speaking practice, pronunciation anxiety, low-quality feedback, or a grammar-heavy learning history. Naming these mechanisms matters because it gives students something more precise than self-blame.

Second, growth-mindset language should be paired with structural literacy. Students can be encouraged to persist while also learning to identify the conditions that shape learning: regional access, school type, family finances, teacher quality, exam pressure, and opportunities for real communication. This is not excuse-making. It is better diagnosis. Gorski (2016) makes a parallel case for teacher education, calling for a move away from deficit and grit ideologies towards a structural understanding of disadvantage.

Third, female students may require different forms of pastoral support. When girls write that they were lazy, unserious, or unworthy of parental investment, teachers should not simply praise the honesty and move on. These statements may carry family guilt and gendered moral burden. Feedback should help the learner move from “I am not serious enough” to “I need a feasible plan, a feedback cycle, and a learning environment that matches my current level”.

Fourth, rural and provincial students need language to describe inequality without shame. A student who says she is slower than city peers may need vocabulary, speaking practice, and exam method. She may also need to hear that the comparison itself is historically and institutionally produced. That recognition does not weaken effort. It can make effort less lonely.

Finally, educational institutions should treat registration and placement narratives as valuable diagnostic data. They show not only what students know but what students believe about themselves. In this corpus, those beliefs are sometimes more urgent than grammar errors.

9. Conclusion

The question asked applicants to describe a failure and what they learned from it. Most respondents answered in accordance with the expected genre. They identified an event, described disappointment, attributed responsibility to themselves, drew a lesson, and promised improvement. On the surface, this resembles healthy educational reflection.

The deeper pattern is more complex. Across 2,000 narratives, structural attribution is rare, while moral self-blame is common. Gender shapes which part of the self is blamed. Geography shapes the intensity and language of failure. English proficiency changes the standard by which failure is measured without removing the inward direction of blame. Teenagers already describe time as wasted, while adults often frame deferred educational or professional aspirations as personal mistakes requiring repair.

The article, therefore, argues that many Vietnamese learners have learned to define failure in ways that make structural conditions difficult to name. Schools, examination systems, unequal access to English exposure, family economies, and the social distribution of confidence rarely become the explicit objects of critique. Instead, the student's own effort, discipline, seriousness, or worthiness becomes the primary site of explanation.

This does not mean that self-responsibility is irrelevant. Some students did underprepare, misjudge tasks, or delay study. The point is rather that the available language of failure is narrow. It gives learners many ways to indict themselves and relatively few ways to analyse the conditions in which learning takes place. A more productive educational response would not remove responsibility from students. It would give effort a more accurate map, allowing learners to say both: I need to work, and the path was not equally built for me.

Summary

This article analyses 2,000 IELTS registration narratives to examine how Vietnamese learners define failure across age, gender, geography, and English proficiency. It shows that failure is most often narrated as an internal problem, while structural explanations remain rare. Teenagers define failure through exam outcomes and overconfidence; young adults through missed opportunity and lost direction; working adults through deferred regret. Male respondents tend to treat failure as a strategic error, whereas female respondents more often frame it as evidence of insufficient discipline, seriousness, or worthiness. Rural and provincial respondents produce more intense and varied failure language than urban respondents. The article introduces the concepts of failure privatization, gendered moral self-location, rural failure amplification, and the proficiency paradox to explain why Vietnamese learners so often interpret unequal conditions as personal fault.

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A BUSINESS HUB AS A STUDENTS' CAREER STARTING POINT. A CASE STUDY ON ZUG

Abstract: As a highly diverse community (with migrants from 146 countries) Zug can capitalize on its assets through education as a driver for building this exceptional Swiss identity and business culture. Swiss Institute of Management and Sciences sets this course reaching for Asian students. For the best alignment of students' expectations and educational requirements the Institute have conducted research on Zug as a students' city. Consequently, the findings should support efforts to maximize city potential for Students' benefit. The article is written as an assignment of the internship completed in Swiss Institute of Management and Sciences.

Keywords: students' friendly city, internship, educational requirements, business hub

CENTRUM BIZNESU JAKO KUŹNIA KARIER NA PRZYKŁADZIE MIASTA ZUG

Streszczenie (abstrakt): Miasto Zug posiada bardzo zróżnicowaną społeczność (migrantów z 146 krajów). Stanowi ona ważny zasób, dzieki któremu może rozwijać charakterystyczną dla Szwajcarii tożsamość i kulturę biznesu, wykorzystujac edukację wyższą. Swiss Institute of Management and Sciences obrał taką właśnie strategię. W niniejszym artykule zaprezentowano wyniki analiz, które pozwolą zidentyfikować zalety miasta Zug jako przyjaznego studentom. Przedstawione wyniki mogą służyć jako wskazówki rozwoju miasta. Artykuł jest wynikiem badan prowadzonych w ramach stażu, który autorka zrealizowała w Swiss Institute of Management and Sciences.

Słowa kluczowe: miasto przyjazne studentom, praktyki, wymagania edukacyjne, centrum biznesu

Introduction

Zug is a picturesque city at the lake Zug (Zugersee) in Central Switzerland. It has evolved from a fishery settlement to a vibrant global business hub with cryptocurrencies in play. It offers luxury services, a high standard of living, and a promise of success for the persistent and creative. As a highly diverse community (with migrants from 146 countries) Zug can capitalize on its assets through education as a driver for building this exceptional Swiss identity and business culture. Swiss Institute of Management and Sciences sets this course reaching for Asian students.

Designing the dedicated academic program based on the latest teaching/learning theories (Connectivism, Experiential Learning, Social Learning) the Institute would like to include an offer of student internships which are not only to confirm the high teaching standards but also provide a practical incentive for Students' career development. For the best alignment of students' expectations and educational requirements the Institute have

conducted research on Zug as a students' city. Consequently, the findings should support efforts to maximize city potential for Students' benefit.

Method

Purpose of the research is to identify Zug's capacity as the hub for international students' internships and career development.

The conceptual framework of the research (Fig. 1) is to shows how the internship contributes to building new knowledge and preparing a student for career challenges.

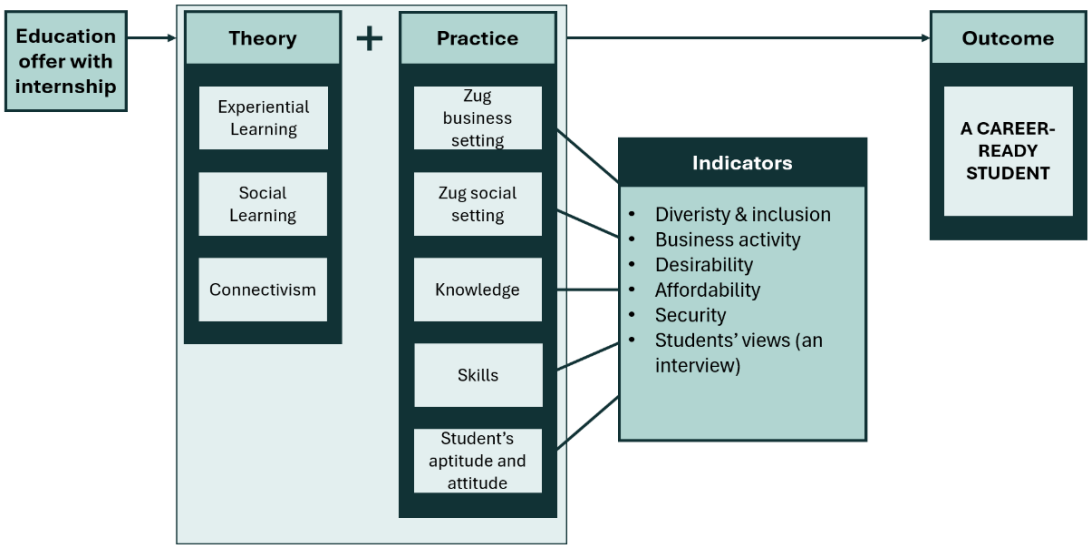


Fig.1. Theoretical model of the research. Own elaboration

Source: Own elaboration

Whereas, Zug as a student's career starting point is discussed with quantitative and qualitative methods: analysis of literature, reports, statistics as well as the interview with twelve representatives of Asian students of Swiss Institute of Management and Sciences. The list of indicators was derived mainly from those included in Best Student City ranking (https://www.topuniversities.com/best-student-cities/methodology) in six categories: university rankings, student mix, desirability, employer activity, affordability, and student view. Aligning the indicators structure with the above-mentioned methodologies allows also to position Zug among best student cities (it was not considered in the QS ranking as the city with 32,122 inhabitants does not meet a criterion of population over 250,000).

A students view indicator was originally worked out as an interview with twelve Asian students focusing on internship issues. Values for indicators were retrieved mostly form Numbeo database, similarly to QS ranking. The values unavailable in that database come from other statistics, reports and are standardized if necessary (e.g. tuition fee).

Internship

Internship is a form of experiential learning, i.e. a type of work-based experiences that usually take place outside the classroom, but which build on, complement, and/or supplement the academic learning that takes place inside the classroom. According to experiential theory learning occurs in any setting and continues throughout life. The ideal process of learning runs in four consecutive steps (David A. Kolb's Experiential Learning Cycle):

- Experiencing (Concrete Experience): Learning begins when a learner uses senses and perceptions to engage in what is happening now.
- Reflecting (Reflective Observation): a learner reflects on what happened and connects feelings with ideas about the experience.
- Thinking (Abstract Conceptualization): the learner engages in thinking to reach conclusions and form theories, concepts, or general principles that can be tested
- Acting (Active Experimentation): the learner tests the theory and applies what was learned to get feedback and create the next experience (Institute for Experiential Learning).

The experiential learning can be adopted in various teaching forms which include, but are not limited to internships, co-ops, apprenticeships, externships, practicum/clinical/field placements, job shadowing, on- or off-campus original research projects, and on-campus work study jobs in a professional workplace setting (across in-person, remote, or hybrid modalities) (NACE). Experiential Education in virtual reality is increasingly being developed and requires definitely more cognitive effort from students than consuming online content passively, for examples business education programs experiment with online classes for role-plays where students simulate stock market and investment corporation activities (Weinstein 2021). Cooperation and interactions that take place are the key elements of social learning/ peer-learning just like observing, modelling, and imitating the behaviors, attitudes, and emotional reactions of colleagues, learning within the group (community/workplace setting) (McLeod 2025). Both online internship and those at a workplace reflect the basic principles of connectivism as well. They are: learning emerges through the connection of different networked nodes (interactions with different professional and peer networks); through discovering connections among fields, ideas, and concepts (to develop new knowledge, by combining what was learnt by experience with the knowledge of other people—from or outside the work team); individuals' learning activities aim at the acquisition of current knowledge; technology facilitates learning (Siemens 2005).

These theoretical concepts which lie behind the internship idea prove that the internship programs enrich teaching practices and culture, and strengthen reflective and adaptive academic environment.

Internship as a part of the course program is undoubtedly a real instrument for the university to bridge the theory-practice gap, reach the learning outcomes (Stuvøy 2017) and in its practical dimension support students' career choices. Participating in internships

offers an insight into industry practices and a hands-on experience which are particularly valuable in business, engineering, healthcare, teaching profession, and technology. Building a network with industry professionals, mentors, and peers can lead to productive business relations. Internship is an opportunity to develop not only hard (technical) but also soft skills: communication, teamwork, and problem-solving which are appreciated by all employers. In general, being familiar with business environment boosts a student's confidence and makes them better prepared for professional challenges (Radigan 2009; QAHE). Kartika, current MA Educational Leadership at The University of Manchester comments in the following way:

Overall, the internship program that I received really helped me prepare myself to face the real world of work. I am very aware that to be able to work well, not only intellectual and theoretical skills are needed, but also social, emotional and interpersonal skills. An internship program can be a place for us to develop all these skills as a whole (HUMS 2024, March 11).

Moreover, internship translates into measurable profits for companies. In the NACE quick poll 2022, eight out of ten employers responded that internships provided the best return on investment as a recruiting strategy, compared to career fairs, on-campus visits, on-campus panels, or other activities (NACE Winter 2022 Quick Poll: Spring Recruiting and Career Services).

Business environment created in Zug and internship outcomes are strongly related. Social Learning Theory and the "bobo doll study"[1] (Bandura 1961) explain that aggression could be learned by observing aggressive behavior in others. Whereas, the research by Chu et. al. proves that creating a friendly family -, school- and community- environments was associated with improving children's prosocial behavior[2] which is desirable throughout our lives since it benefits well-being, job performance, and career success (Jingyi 2023, Jun 29). Thus, these studies are a solid argument for designing child-friendly city (Chu

[1] In this experiment, children watched a short film of an adult acting aggressively – punching, kicking, shouting toward a large, inflatable rubber doll. Then the children were divided into three groups – the first group saw the model rewarded for his aggressive behaviour, the second group saw the model punished, and the third group saw the model receive no consequences. Next, the children were given an opportunity to play with a similar doll. The children who saw the model rewarded or the model who received no consequences exhibited the most aggressive behaviour, while the children who saw the model punished exhibited the least. The fact that the latter group showed the least aggressive behaviour demonstrated the principle of vicarious punishment. In a second phase of the study, the same children were told they would be rewarded if they exhibited the behaviour of the model; all the children were able to imitate the aggressive behaviour, suggesting that all had originally learned the behaviour, but not all had demonstrated it (depending on which type of consequence they observed). This study emphasised the distinction between acquisition and performance of new behaviours. The critics claim that this kind of studies do show correlation between aggression and watching violent TV, but they do not prove causation (Kretchmar 2024).

[2] This study was based on three indicators determining friendly environment: neighbourhood relationship, cohesion, and a lack of discrimination in the community. A good neighbourhood relationship creates opportunities for social learning and friendship building and enhance the sense of belonging to the community. Community cohesion encourages residents to actively participate in community activities and cooperative projects. Children are more likely to understand the value of cooperation, sharing and mutual assistance in a friendly community where they are respected.

et.al. 2024) and student friendly city. (Russo et.al. 2003; Mohammed et.al. 2022; Dickinson 6/09/23).

A Child Friendly City Initiative implements the principles of UN Convection on the Rights of the Child at the local level. They are: non-discrimination, best interests of the child, the inherent right to life, survival and development, respect for the views of the child (UNICEF). They are interpreted and incorporated into social and physical environments in all spheres of social life: environment, city planning policy, governance, services, communities, schools, hospitals and spaces (Xiao et al., 2023). Similarly, student friendly city develops in physical and functional areas: safety and security, design and spatial configuration, transportation mode, smartness and greenness, residential pattern, stakeholders' partnership, and community engagement. Dynamics of a city – students' relationship is shaped by the society and the economy through variety of learning programs, academic activities, social initiatives, network platforms, and scientific projects (Mohammed et.al. 2022), trainings and internships.

A city has to be attractive for students, at all stages of their career: from the first moment when they have to decide on a place where to study – this decision is less and less associated with the reputation of the universities and increasingly on the quality of life that they think they will enjoy in a city –, up to the moment when they will plan for their future work and residence location (Russo et.al. 2003).

This view is also relevant to online students, who value the availability of workshops, individual courses, micro credentials, certificates, and networking opportunities (Harvard Extension, 2025). All these are career boosters and directly connected with business environment a particular city offers. Keeping the students linked to the city so that the human capital brings benefits to both business and community require, as J. Dickinson (2023) says, "implementing policies that support the creation of high-skilled knowledge jobs – and that means deciding to invest in transport, housing and infrastructure that both graduates and students would say they need".

The SIMS students (the interview respondents) opt for internships mainly in technology sectors, tourism and banking.

These socio-economic notions of the stability of livelihood, trust in social relationships and community the city should care of, are ingrained in much wider the human security concept modelled today by the Fourth Industrial Revolution (WEF 2018) which focuses on values and ethics as a key feature of technological systems (Philbeck and Davis 2019, January 22).

In response to undergoing socio-economic-technological changes it is important to bridge the gap between theory and practice but also digital and real world with a human and their values as a reference point. Students friendly cities seem to be embodiments of that.

There are numerous indices and rankings to examine the qualities of cities as students' cities. Zug has been chosen for the analysis for its business and multicultural characteristics which indicate the high capacity to support students career development

through a rich offer of internship on one hand. And on the other, that in spite of an excellent reputation the city could not be included in the global rankings because of its “size” under the established criterion.

Zug as a students’ career starting point

The results of quantitative and qualitative analysis based on statistics, reports and a student representatives’ interviews allow for the generalisations and objective opinion on the selected aspects of Zug.

Diversity and Inclusion. A diverse array of educational institutions in Zug embraces: Campus Zug-Rotkreuz of the Lucerne University of Applied Sciences and Arts with the School of Computer Science and Information Technology and the Institute of Financial Services Zug (IFZ), University of teacher education (PH Zug), professional colleges offering degree studies in economy, IT, industrial design, complementary and alternative medicine, child education, and agricultural technology in online, hybrid and in-person modules to great number of international students. There are also international primary and secondary schools. A city Zug counts about 32,000 inhabitants 47-61% of whom holds university degree.

Public primary schools in Zug offers German classes for non-German speaking pupils. Diversity score for canton Zug equals 30% and Tolerance and Inclusion Score – 75%. In Canton of Zug, people from 143 different nations live together: 6,808 Germans – 3,770 Italian – 2,198 UK – 1,428 French – 1,336 Spanish – 1,002 Austrians – 915 Dutchmen – 902 Russians – 639 form the USA – 533 Swedish – 321 Finns – 302 Brazilians – 226 Canadians – 216 citizens from South Africa. This national diversity reflects also cultural and religious heterogeneity with 40.59% Roman Catholic, approx. 10.88% Protestant and approx. 48.54% others or nonbelievers. The city takes 58th place in the Getting Settled Index, with 35% of respondents saying that they find it hard to get used to the local culture (vs. 20% globally). A Canadian respondent says: “I find that making friends is extremely difficult, and I am a very social person”. The 31% of expats feel that people are reserved towards foreign residents (vs. 19% globally) (InterNations 2019).

Employer activity a key indicator considered in terms of students’ internship Zug is the best micro-city, according to Tokyo SCCIJ 2025. The town offers foreign investors the lowest tax rate in Switzerland, which definitely attracts them across various sectors. The most important industry clusters are: blockchain, fintech, IT, life sciences, tech industry, consumer goods and commodities, financial services. This makes Zug a diverse and highly qualified talent pool. Zug is praised by expats. Near seven in ten are satisfied with their work-life balance (67% vs. 60% globally) and working hours (69% vs. 62% globally). Expats even rank Zug first in the world for the state of the local economy (91% happy vs. 66% globally). Yet, for job security the city ranks as 44th out of 82 almost a quarter of expats (24%) do not feel secure within their jobs (vs. 21% globally) (InterNations 2019) Youth Employment level is high. For more detailed view it is worth referring to the youth opportunities. In Switzerland in 2025, almost all (93.3%) economically active persons aged 15 to 24 were employees with 36.8% doing

an apprenticeship. 23.7% of young employees (excluding apprentices) have a fixed-term contract with their employer, of which 6.4% were on a paid internship (FSO). There are 763 internship Jobs in Zug advertised in April 2026 at Glassdoor site.

Desirability. Desirability is rather a blurred concept, understood and measured in various way. "Quality" of a place is often measured with indirect methods, e.g. some scholar assumes that "bigger is better" due to higher-quality production and consumption opportunities in larger cities; a primary function of cities is to provide access to enrichment opportunities, those in larger places should be happier. Others have created indices based on places' natural amenities and their cultural and economic characteristics. There are studies where respondents are asked how happy they are with their cities, and find there is a fairly high correlation between subjective measures of place quality and residents' well-being. Yet, the objective characteristics of a place may not be reflected in residents' subjective perceptions of it, and happiness may entail place satisfaction but it does not need to be true the other way round. A location's desirability is measured by whether people are "voting with their feet" and moving in more than others are moving out. However, net in-migration might be caused by other factors, for example family ties; The „quality" of a place may be assessed by wages and housing costs; However, wages and housing costs may not fully reflect local amenities, for example because of high moving costs, artificial limits on housing supply, and people's emotional attachment to "less desirable" places. The next approach is to measure well-being by asking townsmen how happy they are and then comparing their answers with the cities' objective characteristics (Morris 2023). In that paper the desirability index is built on the basis of QS Best student city index.

Desirability index for Zug includes Climate Score (81.20); Corruption Score (14.5), Globalization Index (88.69), Healthcare Score (70.28), Pollution Score (17.18), Safety Score (80.73), Traffic Score (21.88). When compared to New York and Seoul which in 2026 ranking is the best student city Zug has superior values for all indicators (a health care indicator varies in relation to Seoul).

Table 1. Desirability score – comparison

Desirability	**Zug**	**New York**	**Seoul**
Climate Score	81,2	79,66	68,39
Corruption Score	14,5	54,31	36,5
Globalization Index	88,69	79,36	78,39
Healthcare Score	70,28	62,92	82,94
Pollution Score	17,18	58,12	48,34
Safety Score	80,73	49,13	74,76
Traffic Score	21,88	43,34	40,9
(Quality of Life Index)	193,95	134,40	158,40

Source: NUMBEO https://www.numbeo.com/quality-of-life/in/Zug

Affordability. Affordability may be understood as "the extent to which goods and services are priced within the financial means of individuals, enabling them to make purchases without undue hardship. It is not solely about the face value of a price tag; affordability encompasses an individual's ability to maintain other basic necessities such as food, housing, and healthcare after making a purchase. This concept is fundamental in both economic and social contexts, as it reflects overall purchasing power and the capacity to sustain a reasonable quality of life" (Van Buren County). Zug's affordability for students has been measured by:

– Big Mac Score equals plus 48.4. Purchasing power parity;
– Cost of Living Score equals 129. Relative cost of living to New York, Calculated using average restaurant, groceries, transport, utilities, sports, childcare, clothing and shoes cost difference, also taking local purchasing power and average salary difference into consideration. Comparison between Zug and New York using Numbeo's methodology for Cost-of-Living Score;
– Relative value of average tuition fees in Switzerland to average tuition fees in New York is 48.4; The values of the average tuition fees in Zug compared to tuition fees in New York and European countries is presented in Table. 2.

Table. 2. Tuition fees for foreign students

	Tuition fees for foreign students			
	EU/EEA Students	**Non-EU/EEA Students**		
Public universities		**Bachelor (Min)**	**Bachelor (Max)**	**Add. one-time fees**
Sweden	Free	€ 7 500,00	€ 25 500,00	€ 85,00
UK	Same as non-EU/EEA	€ 7 000,00	€ 40 000,00	
Netherlands	700-2100	€ 6 000,00	€ 15 000,00	
Denmark	Free	€ 6 000,00	€ 16 000,00	€ 225,00
Finland	Free	€ 5 000,00	€ 13 000,00	
Austria	Free	€ 1 454,00	varied	
Zug	Same as non-EU/EEA	€ 1 400,00	€ 1 400,00	
Switzerland	Same as non-EU/EEA	€ 400,00	€ 3 700,00	
Germany	Free	€ 200,00	€ 700,00	
France	Same as non-EU/EEA	€ 170,00	€ 650,00	
Spain	Typically, 1000 euros less	€ 150,00	€ 4 500,00	
Norway	Free	€ 60,00	€ 120,00	
Italy	Same as non-EU/EEA	€ -	€ 5 000,00	
New York		€ 8 940,54		

Source: https://www.mastersportal.com/articles/405/tuition-fees-at-universities-in-europe-over overview-and-comparison.html

In spite of the fact that generally Switzerland has fewer encouraging scores in affordability than other world cities it attracts a considerable percentage of international students and this is becoming a long-established trend.

The most international university in Switzerland and the 8th in the world is ETH Zurich *(Times Higher Education supplement 2026).* About 22.5% of its students are foreigners and most of them are from Germany, Italy, China and the US. Whereas The *Lucerne University* of *Applied Sciences* and Art (with The Zug-Rotkreuz campus) has 7 % of students. The "International" category includes those who solely reside in Switzerland for the purpose of studying (Facts and Figures 2020).

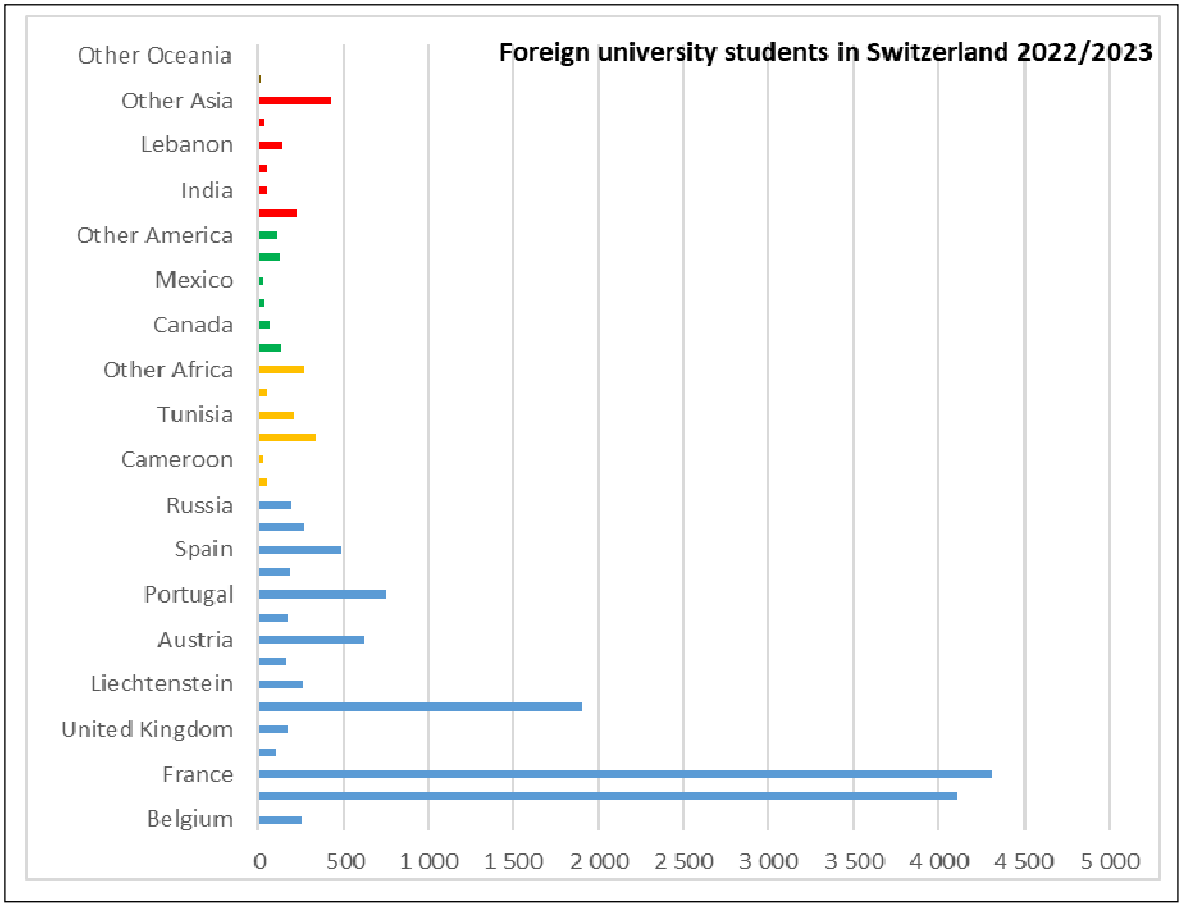


Fig. 2. Foreign university students in Switzerland 2022/2023

Source: https://www.swissinfo.ch/eng/education/how-many-international-students-study-at-swiss-universities/72921721

However, the investments in international education seem to need redressing. It was calculated that in 2019 CHF180 million a year was spent on training third-country nationals and only 10-15% of them are employed in Switzerland after their studies. The list of causes includes: immigration restrictions, visa quotas and short deadlines (Bradley & Tuluban 2024, Feb.23).

One of the Asian students of SIMS responds in the interview:

Zug appears to be a highly attractive destination for students, especially due to its strong economic environment. However, the cost of living may be a concern, so more support or affordable options for students would be beneficial.

In the interviews all twelve SIMS Asian students believe that an internship would enhance their career opportunities but eleven of them wish to complete a 3 month-long internship in Zug. Five out of twelve SIMS interviewees would consider paid internship or unpaid one on condition that they had an opportunity to earn a living at the same time. And nine of them admits that money management could be a source of stress. The interesting dependency may be discovered: the only respondent who was not interested in an internship in Zug at all (alternatively they considered an online mode) has no friends in Zug. Naturally, this is not statistically significant but gives an insight into the concerns of international students and may be worth considering in further research.

Discussion and conclusions

Zug as the best business micro-city in Europe offers a wide range of internship opportunities for students which promise future-oriented skills and competencies development. With its varied multicultural population, it is well-organized, hospitable and highly responsive to the needs of foreigners. What You Need to Know When You're Moving to Zug at InterNation, Expat Guide and other information, Moving to Zug: Tips for Navigating the First Few Months at Zug4you are the sites anyone can easily search out. Yet, there can be still a guest who do not feel at home at once. Adapting to a new reality is a process and needs to embrace all spheres of human life: excellent career/ training/internship opportunities, high-level education and a sense of security (financial, personal, social). And the security factor is the one that strongly pervades in case of the third -country students. A balanced business-education-security trifecta may be a key to effective policy of integrating internship into educational program resulting in good employability score.

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AN ANALYSIS OF THAI PRODUCT USE AND THE IMPACTS OF NATIONALISM AND THE BOYCOTT MOVEMENT ON CONTINUOUS INTENTION TO USE THAI PRODUCTS AMONG UNIVERSITY STUDENTS

Abstract: Trade between Cambodia and Thailand had increased. In July 2025, Cambodia-Thailand border conflicts occurred. The situation has caused the emergence of nationalism and boycotts in Cambodia, which led to a decline in bilateral trade worth in July 2025. This study aims to explore the factors that affect Cambodian student attitudes towards using Thai products before the border conflicts, as well as the impacts of nationalism and boycotts on their ongoing intention to use these products after the border conflict. This study was conducted with 323 students from a private university in Siem Reap in Cambodia. This study found that attitudes, subjective norms, and perceived behavioural control influenced Thai product use among Cambodian students before border conflicts. After the border conflict began in July 2025, nationalism and boycotts emerged, negatively affecting the intention to continue using Thai products. This study has significant theoretical and policy implications.

Keywords: product, nationalism, boycott, continuous intention

ANALIZA TENDENCJI DO UŻYWANIA PRODUKTÓW TAJSKICH ORAZ WPŁYWU NACJONALIZMU I BOJKOTÓW NA INTENCJĘ CIĄGŁEGO UŻYWANIA PRODUKTÓW TAJSKICH WŚRÓD STUDENTÓW WYŻSZYCH UCZELNI

Streszczenie (abstrakt): Po okresie wzrostu wymiany handlowej pomiędzy Kambodżą a Tajlandią, w lipcu 2025 roku doszło do konfliktów granicznych między tymi dwoma krajami. Sytuacja ta doprowadziła do pojawienia się nacjonalizmu i bojkotów w Kambodży, co doprowadziło do spadku wartości dwustronnego handlu w lipcu 2025 roku. Celem niniejszego badania jest zbadanie czynników wpływających na postawy kambodżańskich studentów wobec korzystania z produktów tajskich przed

konfliktami granicznymi, a także wpływu nacjonalizmu i bojkotów na ich dalsze zamiary korzystania z tych produktów po konflikcie granicznym. Badanie przeprowadzono z udziałem 323 studentów z prywatnego uniwersytetu w Siem Reap w Kambodży. Badanie wykazało, że postawy, normy subiektywne i postrzegana kontrola behawioralna wpływały na korzystanie z produktów tajskich przez kambodżańskich studentów przed konfliktami granicznymi. Po rozpoczęciu konfliktu granicznego w lipcu 2025 roku pojawiły się nacjonalizm i bojkoty, które negatywnie wpłynęły na zamiar dalszego korzystania z produktów tajskich. Niniejsze badanie ma istotne implikacje teoretyczne i polityczne.

Słowa kluczowe: produkt, nacjonalizm, bojkot, ciągły zamiar

1. Introduction

1.1. Background

Cambodia and Thailand have become the second-largest ASEAN partners and the fourth-largest trading partners globally. The trade between Thailand and Cambodia was $4.28 billion in 2024. In comparison with 2023, the trade increased by 15.5 per cent. The trade between Cambodia and Thailand continues to increase in 2025. In five months in 2025, the trade was more than $1.87 billion, which increased 8.3 per cent in comparison with 2024. In this period (five months), Cambodia exported $395 million worth, and Thailand exported $1.4 billion (Cambodianess, 16 July 2025).

In total, 3.2% of Cambodia’s exported goods were exported to Thailand. The exported goods to Thailand include agricultural products, including mangoes and cassava; vehicle spare parts; and electrical components. But 13.5% of Cambodia’s imported goods are from Thailand, such as gas and diesel, vehicles, and fruits and vegetables. Cambodia mainly relies on Thailand for petroleum products and foodstuffs. More than 30 per cent of total imported petroleum in Cambodia comes from Thailand (AMRO, 2025).

Rational considerations drive individual purchasing decisions, according to consumer behaviour. Consumer behaviour is an important factor to consider when designing an effective marketing strategy, as it enhances sales and brand loyalty (Myat et al., 2025). Numerous factors, including identical products, pricing, promotion, and distribution, influence customer behaviour. Cultural, social, psychological, and individual factors influenced a consumer's purchasing decision (Łatuszyńska et al., 2012). Abadi et al. (2020) and Bozorgparvar et al. (2018) found that environmental and social aspects, attitudes, perceived behavioural control, and subject norms influenced intention and behaviour (Abadi et al., 2020; Bozorgparvar et al., 2018).

Moreover, Thailand-Cambodia border conflicts started in July 2025. Then nationalism and boycotts have emerged, which negatively affected the perception and attitude of Cambodians towards Thai products (Cambodianess, 2025). When border conflict became tensions between Cambodia and Thailand, a boycott of Thai products among Cambodians emerged. This boycott could drive a decline in bilateral trade. The total bilateral trade in July 2025 was $206.88 million, which indicated the decline with an amount of 13.15% in comparison with the trade in July 2024 (Asia News Network, 2025).

Nationalism has a significant impact on consumer purchasing decisions. People chose to buy local goods instead of foreign ones. People chose local goods if they had a strong sense of patriotism. People thought that they needed to support their national economy, so they needed to buy local goods. When they bought products from other countries, they seemed to weaken their country's economy (Han, 1988; Rawwas et al., 1996). Nationalism also becomes more influential on consumer decisions during periods of political conflict (Verlegh & Steenkamp, 1999). Boycotts were a significant way consumer nationalism manifested. 'Boycott' refers to activities aimed reducing or avoiding products from countries considered politically or economically unfavourable (Sen et al., 2001; Liao & Xia, 2023).

The bilateral trade between Cambodia and Thailand increased. In July 2025, border conflicts occurred, leading to a surge in nationalism among Cambodian citizens and a boycott of Thai products. Moreover, there was a decline in bilateral trade after border conflicts began. There were gaps in previous studies related to factors shaping university student decision-making in using Thai products before conflicts, even with an increase in bilateral trade. Moreover, when the border conflict began, Cambodians became more nationalistic and initiated boycotts. July 2025 marked a decline in bilateral trade. There are gaps in the analysis regarding boycotts and nationalism among Cambodians, particularly students, and how these factors affect their continued use of Thai products. This study was proposed to fill the gaps in previous studies by analysing the factors that influence people's behaviour regarding Thai product use before examining the impact of nationalism and boycotts on Thai product consumption.

1.2. Research Objectives

- To analyse Cambodian student attitudes on Thai product use before Cambodia-Thailand border conflicts.
- To examine the influence of nationalism and boycotts on Cambodian students' continuance intention to use Thai products.

2. Literature Review

This part discusses concepts, theories, and empirical reviews. The first section starts with factors affecting consumer behaviour with the adoption of the Planned Behaviour Theory (PBT) and empirical review. The second part discusses nationalism, boycotts, and attitudes toward product use with the adoption of consumer behaviour theory and empirical review. The last part covers the research framework.

2.1. Factors and Customer Behaviour

This research adopted the Theory of Planned Behaviour (TPB) (Ajzen, 1991). Fishbein and Ajzen advanced this theory in 1975 (Koen et al., 2013). To explain consumer behaviour, TPB considers environmental and social aspects, including individual relations. Attitudes, perceived behavioural control, and subjective norms indirectly and directly shaped the intention and behaviour (Abadi et al., 2020; Bozorgparvar et al., 2018).

Attitude is the first factor affecting the intention. "Attitude" refers to a positive or negative assessment of behaviour in a specific situation (Kaiser and Scheuthle, 2003). People who had a positive attitude toward a particular behaviour were more likely to do it (Läpple and Kelley, 2013). Attitudes cover emotional and cognitive components (De Bruijn, 2010). The emotion frames the feeling of an individual on a subject, while the cognitive component refers to people’s beliefs in something (Arvola et al., 2008). Some studies have shown evidence of a relationship between attitude and the intention to adopt a new ecosystem (Wang et al., 2014; Yadav and Pathak, 2016). This study examines the correlation between Cambodian attitudes and Thai product use among Cambodian university students (H1).

H1: There is a positive correlation between Cambodian university students’ attitudes and Thai product use.

Subjective norms were one of the variables affecting consumer intentions. The intention refers to the extent of people's intention to perform a particular behaviour (Ajzen, 1991; De Bruijn, 2010). Subjective norms were influenced by the behaviour (Goh et al., 2017; Ahmmadi et al., 2021). It refers to what people perform based on the perception of others (Ajzen, 1991; De Bruijn, 2010). This study covers the students who have used Thai products; therefore, the second hypothesis tests the relationship between subjective norms and Thai product use.

H2: There is a positive correlation between Cambodian university students’ subjective norms and Thai product use.

Perceived behavioural control (PBC) was the third variable that affected people's intentions. This variable refers to the perception of the comfort or trouble in performing a behaviour that can prevent or facilitate a behaviour (Ajzen, 1991; Schultz and Fielding, 2014). Some factors, including opportunities, resources, time, knowledge, and skills, affected people's intentions to perform the behaviour, but these could be controlled by people (Goh et al., 2017; Ahmmadi et al., 2021). Perceived behavioural control focuses on the people's perceptions related to easiness or their trouble performing behaviour (Savari and Gharechaee, 2020). This study covers students who have used Thai products; therefore, this hypothesis examines the relationship between perceived behavioural control and Thai product use (H3).

H3: There is a positive correlation between consumers' perceived behavioural control and Thai product use among Cambodian university students.

2.2. Nationalism, Boycott and Consumer Behaviour

Consumer behaviour theory was adopted in this study. The Theory of Consumer Behaviour (CBT) explained the various factors affecting customers' decision-making. These factors included psychological, social, and cultural ones (Solomon, 2020). Boycotting, nationalism, and religiosity are examples of socio-political factors that shaped consumer intention (Rahman et al., 2021). CBT also explained psychology and economics, which shaped the decision-making of individuals. CBT also identified personal preferences,

social influences, and situational factors as important factors for the purchasing decisions of individuals (Schiffman & Wisenblit, 2019).

2.2.1. Nationalism and Consumer Behaviour

Consumer nationalism explains how the products purchased by customers are related to their national identity. When people used goods or services, their product use could reflect their national identity. Nationalism refers to the connection between nationalist ideology, consumer politics, and the study of consumer culture. Customer nationalism is defined as economic nationalism or political consumerism (Castelló & Mihelj, 2017).

Consumer nationalism arises when individuals express their national sentiments and perspectives through their purchasing decisions. This phenomenon frequently manifests as a preference for products and brands that resonate with their national identity, values, and economic aspirations. In the realm of marketing, national symbols and narratives that link consumer choices to feelings of group loyalty and pride are commonly employed to foster consumer nationalism. This, in turn, shapes consumers' perceptions of and loyalty to brands (Bhayani, 2025). In developing economies, nationalism is quite significant since a shared national identity often strengthens social unity and political stability.

Nationalism affects purchasing decision-making. Nationalism influences how people understand and respond to economic, political, and cultural relationships between countries. Such feelings could shape purchasing choices. When people felt stronger nationalists, they had strong unity and exclusion, and such attitudes could lead to reduced purchases of foreign products (Serhan & Boukrami, 2015). Nationalism, together with conflicts, could strengthen ties to national identity. In this situation, when people used foreign products, it seemed to contradict their commitment to their nation. There were negative effects of nationalism on customers' willingness to buy foreign items when political situations become more tense (Shimp & Sharma, 1987; Balabanis et al., 2001).

Hypothesis 4: Nationalism among Cambodian university boycotters is a negative predictor of the continued use of Thai products.

2.2.2 Boycotts and Consumer Behaviour

'Boycott' is defined as the strong negative feeling that drives individuals' actions and attitudes towards a country, company, or product. Klein et al. (1998) explained how international conflicts affect consumers' purchasing (Serhan & Boukrami, 2015). Consumer boycotts are instances where a group of consumers intentionally refuses to buy a company's products or services. This action usually happens because they disagree with what the firm is doing, particularly if they see its actions as unfair, unjust, or socially irresponsible. Boycotts, driven by moral principles, emotional responses, and a sense of social duty, are bolstered by shared standards, group identities, and the conviction that customers can influence firms by their collective actions. Social media and online platforms play a crucial role in the digital era, rallying participants, strengthening consumer opinions, and increasing the visibility and impact of boycotts. This feature has

turned them into potent tools for consumer activism and corporate responsibility (Yusof et al., 2025).

Boycotts could weaken consumers' intention to continue using the product. These boycotts increased opposition to buying, rebuying or using foreign products. In addition, boycotts were related to political, moral, or ethical problems. Boycotts, through collective action, social pressure, and emotional responses, weaken trust in businesses, degrade their perceived value, and reduce customers' willingness to continue long-term relationships with them (Panwar et al., 2017; Salma et al., 2024). However, some studies evidenced that boycotts could not change consumers' decisions. Such instances occurred when few choices existed. Moreover, the decision was also related to a product (Ajzen, 1991; Klein et al., 2004). Therefore, the research aims to test the relationship between boycott and continuation of product use (H5).

Hypothesis 5: Boycott participation of Cambodian university students negatively predicts the continued use of Thai products.

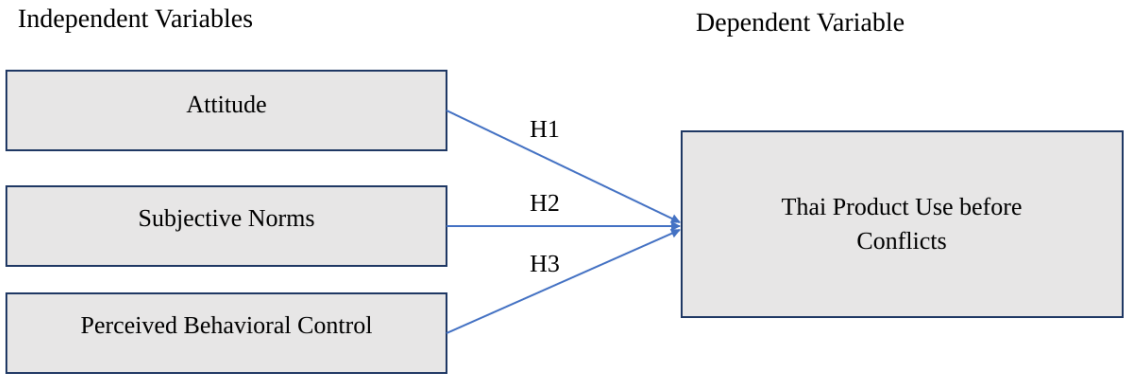


Figure 1: Framework 1 (Factors Affecting Thai Product Use Before Border Conflicts)

Source: Adapted from Azjen (1991)

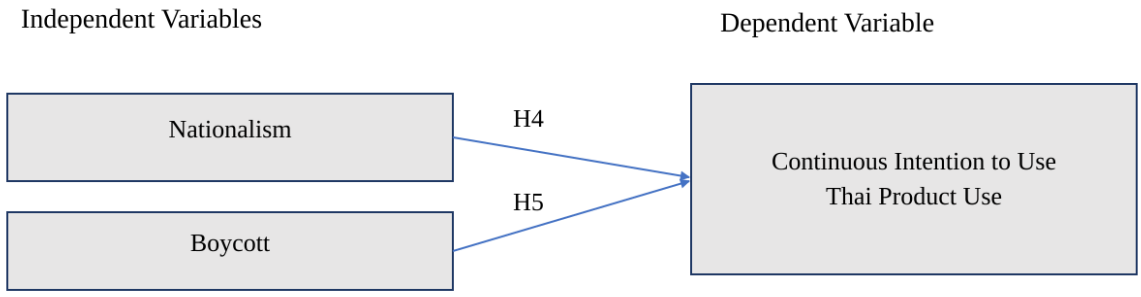


Figure 2: Framework 2 (Relation between Nationalism and Boycott on Continuous Intention to Use Thai Products)

Source: Serhan & Boukrami, 2015; Panwar et al., 2017; Salma et al., 2024

3. Methodology

This study employed mixed methods including quantitative and qualitative approaches. Quantitative analysis involves systematically examining numerical data using statistical methods (Creswell, 2017). This model was used to identify patterns, correlations, or trends and to test research ideas. This method allowed researchers to objectively and reliably measure many aspects of consumer behaviour, such as factors affecting Thai product use, and relationship between nationalism and boycott on the intention to continue using a product.

Primary data and secondary data were used. The secondary data were from online and journal sources, while the primary data were collected from 323 students from one private university in Siem Reap province in Cambodia. Stratified random sampling was employed in this research. According to Creswell (2017), secondary data refers to existing documents, reports, and studies to understand broader trends and contextual background, while primary data is crucial for attaining the research objectives.

Researchers employed an online survey questionnaire using KOBO and also an interview guide. After the creation of the questionnaire, the questionnaires were distributed to students. The questionnaires consist of a majority of closed-ended questions and a few with open-ended questions. The close-ended questions used a Likert scale with multiple-choice questions in order that the students could rate their views and opinions. An interview guide was used to gather qualitative data on students' views and opinions related to the factors affecting Thai product use, Thai product use after conflict and intention to continue the use of Thai products.

The quantitative analysis was done in SPSS, while a thematic approach was used with qualitative analysis. Descriptive statistical tools and inferential statistical tools were employed to analyse the data in this research. The descriptive tools used included mean and frequency, while the inferential tools were used, such as regression analysis. The descriptive analysis was used to examine the proportion of Thai product usage before and during conflicts, as well as the average scores for Thai product use and the continued intention to use Thai products. The regression was used to analyse the prediction of attitude, subjective norm and perceived behavioural control on Thai product use. Moreover, the regression was employed to analyse the prediction of nationalism and boycotts based on the continued intention to use Thai products among Cambodian university students. Microsoft Excel was used to visualise the data, which included graphs, tables, correlations, and regression analysis.

4. Findings and Discussions

4.1 Demographic Data

The data shows that there was a balance of genders in this research. It was reported that 52.5% of the respondents were males, while 44.5% of the respondents were females. This data showed the balance of perspectives among males and females. Most of the respondents were aged 21 to 23 years (34%), followed by those aged 24 to 26 years

(20.9%). The data showed the inputs for this research were from youths who were the university students. Most of the students were studying for a bachelor's degree (69%), while some of the respondents were studying for a master's degree. Most of the students were representatives from business majors and law majors, which accounted for 45% and 25%, respectively. Most of the respondents were from the income range of less than 500 USD per month (about 89%).

Table 1: Demographic Information of Participants

Category	**Sub-Category**	**Frequency**	**Percent**
Sex	Male	171	52.5
	Female	145	44.5
	Prefer not to say	9	2.8
Age	Less than 18	1	0.3
	18–20	56	17.2
	21–23	111	34.0
	24–26	68	20.9
	Above 26	90	27.6
Education	Bachelor	225	69.0
	Master	101	31.0
Majors	Business	148	45.4
	Information Technology (IT)	34	10.4
	Social Sciences	4	1.2
	Law	91	27.9
	Other	49	15.0
Incomes	Less than 200 USD	182	55.8
	200–500 USD	108	33.1
	501–1000 USD	26	8.0
	1001–1500 USD	4	1.2
	1501–2000 USD	5	1.5

Source: Authors, 2026

4.2. Cambodian Student Attitude on the Use of Thai Products

4.2.1 Thai Products Used before and after the Conflict

There were declines in the proportion of students who had used Thai products before and after Cambodia-Thailand border conflicts. The survey with university students confirmed that almost all students have used Thai products, which reached 98.5% of the total respondents before border conflict. After the border conflict started, the students' negative attitudes towards Thai products arose. It was reported that only 16% of the students have still used Thai products, while the majority of the students have stopped using Thai products during border conflicts because there were emergences of nationalism among Cambodian students as well as they could not find alternative products. This data aligns with the trends of imported goods from Thailand, which are valued at approximately $690 million, reflecting a sharp decline of 40.8 percent compared to $1.16 billion during the same period in 2025 (Chamrong, 2026).

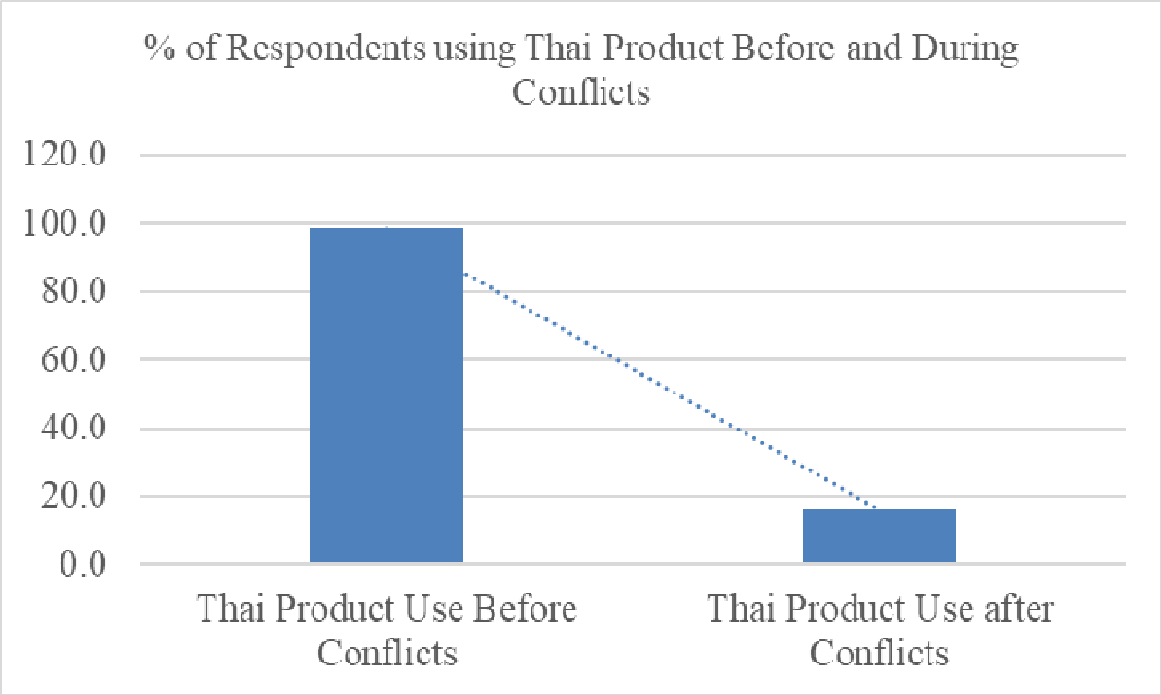


Figure 3: % of Respondents using Thai product before and during conflicts

Source: Author, 2026

4.2.2. Types of Thai Products before Border Conflicts

Before the border conflicts, Cambodian students had used different types of Thai products. These include foods, snacks, beverages, care products, cosmetics, cleaning products, clothing, electronics, motorbikes, and stationery and supplies. Among these products, it was observed that most (74%) have been used by Cambodian university students. Then, more than 50% of the students have used Thai products, including home cleaning products (55%). From 30% to 50% of the students have used some kinds of Thai products, including packaged food and snacks (45%); cosmetics and beauty products (40%); beverages (39%);

and clothing and fashion accessories (35%). Few Cambodian students have consumed some kinds of products before border conflicts, including motorbike or vehicle parts (19%), electronics (17%), and stationery and school supplies (15%).

According to Respondent 1, before the border conflict, she had used many Thai products such as snacks, beverages, cosmetics, household products, and instant foods because Thai products were very common and easy to obtain in Cambodia. She also used some Thai skincare and personal care products because she believed they had good quality.

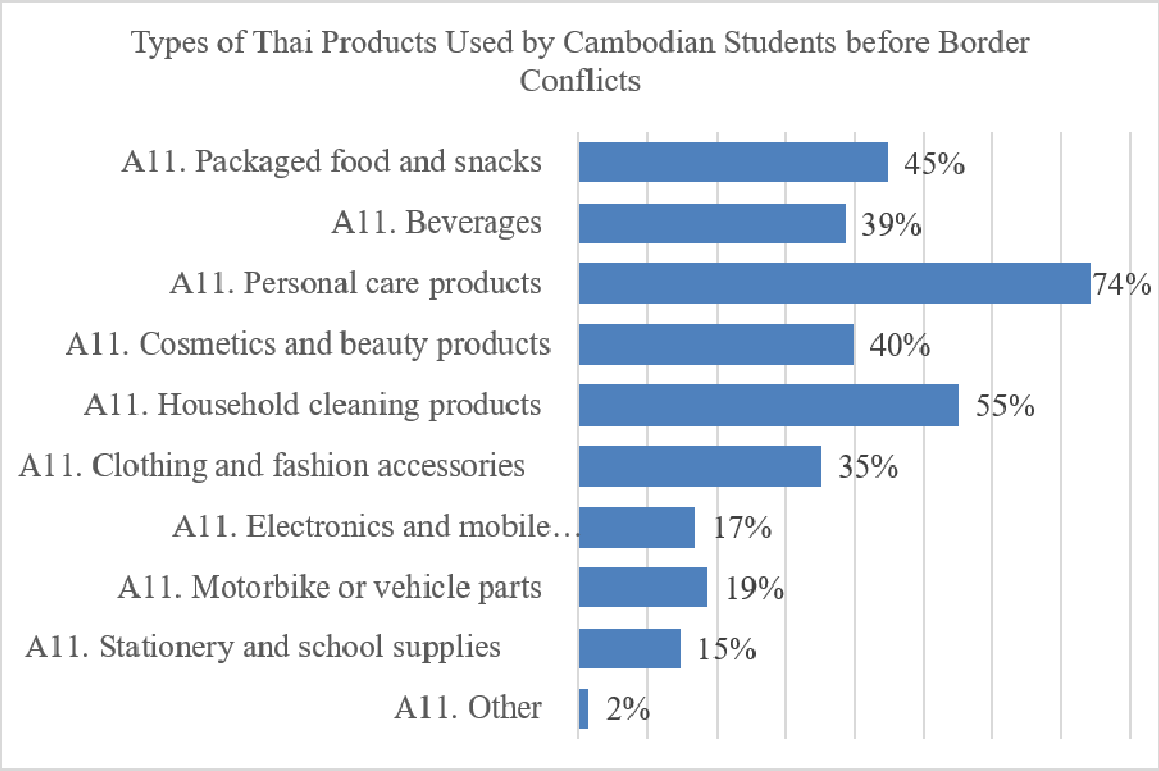


Figure 4: Types of Thai Products Used by Cambodian Students before Border Conflicts

Source: Author, 2026

4.2.3 Factors Affecting Thai Product Use

This part discusses the factors affecting Cambodian-Thai product use before border conflicts. This section addresses three hypotheses (H1-H3). H1: prediction of attitude towards Thai product use; H2: prediction of subjective norm on Thai product use; and H3: prediction of perceived behavioural control on Thai product use among Cambodian university students.

The regression assumptions were tested for H1 to H3. The test result confirmed that the data met all assumption requirements. The assumption test confirmed that Durbin-Watson ranged from 1.950 to 1.990 (H1 = 1.950, H2 = 1.990 and H3 = 1.722). VIF-H1 ranged from 1.305 to 2.090, VIF-H2 from 1.276 to 1.600 and VIF-H3 from 1.450 to 2.177. Tolerance-H1 was from 0.449 to 0.766, Tol-H2 from 0.625 to 0.784, and Tol-H3 from 0.459 to 0.690.

The regression analysis indicated that the Cambodian attitude statistically and positively predicted the Thai product use. It means that Cambodian university students' attitudes explained 42.5% of variance in Thai product use (R-squared=.425). H1: The prediction of Cambodian student attitude toward Thai product use was statistically significant (Sig. = 0.00). They have decided to use Thai products because of their high quality; trust in Thai brands; and reliability, durability, and popularity. They also didn't consider the country of origin when choosing products. This result aligned with Yoon and Bae (2024), which indicated that attitudes significantly positively influenced purchase behaviour intentions. This study, proved by Jang, Lee and Bae (2022), found that a higher attitude led to a higher consumer behavioural intention for functional cosmetics.

Moreover, the regression analysis for H2 examined the prediction of subjective norms regarding Thai product use among Cambodian university students. The regression result indicated a positive and statistically significant influence of subjective norms on Thai product use. It can be explained that 28.5% of variance in Thai product use among Cambodian university students could be explained by subjective norms (R-squared = .285). The second hypothesis (H2) was statistically significant (Sig. = 0.00). Among the four items in this construct, three were more influential in Thai product use. The reason was that the students were influenced by friends and family who used Thai products. Thai products are advertised frequently on social media and television (TV), which influences the students to consume Thai products. Moreover, the students also actively recommended Thai products to others before the conflict. Yoon and Bae (2024) indicated that subjective norms significantly positively influenced purchase behaviour intention, aligning with this result. This study is consistent with Jang, Lee, and Bae's (2022) study, which found that the higher the subjective norms, the higher the consumer's behavioural intention towards functional cosmetics.

The regression analysis of hypothesis 3 (H3) focused on predicting the perceived behavioural control regarding Cambodian students' use of Thai products. The regression results confirmed that perceived behavioural control positively and statistically predicted Thai product use among Cambodian students. Specifically, perceived behavioural control predicted 32.3% of the variance in Thai product use. Hypothesis 3 was statistically significant (Sig = 0.00). In comparison among the three factors, the attitude factor had more influence on Thai product use among Cambodian university students. Then, it was followed by the perceived behavioural control factor. Less influential were subjective norms. This result was aligned with Yoon and Bae's (2024), which indicated that perceived control had a significant positive influence on purchase behaviour intention. This study is consistent with Jang, Lee, and Bae's (2022), which discovered that the higher the perceived control, the higher the consumer's behavioural intention for functional cosmetics.

According to respondent 1, the main factors that influenced her decision were product quality, affordable price, brand reputation, attractive packaging, and availability in local markets. She also trusted Thai products because many people around me used them and gave positive feedback.

Respondent 2 has used Thai products before the border tensions. These products include food, including milk, instant noodles, sweet/energy drinks, food ingredients (soy sauce, fish sauce, and beetroot), and pastries. She also used beauty and hygiene products, including shampoo, body wash, toothpaste, and washing powder; and home appliances and accessories, including air conditioners, televisions, and motorcycle/car accessories. The use was because of high quality and safety. Thai products were seen to have better manufacturing standards and were safer than some imported products, which were from unclear origins of countries. Prices were not as high as those from Europe or Japan, but the quality was acceptable. Moreover, due to the close border between Cambodia and Thailand, transportation was fast, which enabled products to be available everywhere, including supermarkets as well as village shops.

Respondent 3 had bought Thai products including clothing and other small items before border conflicts. The purchase of Thai products was motivated by their affordable prices, good quality and standards, availability in the market, trust in the brand, promotional offers, and modern, attractive styles.

According to respondent 4, before the border conflict, she had used many types of Thai products, such as food and drinks, cosmetics, soaps, clothes, and daily necessities, because these products were of good quality and easy to find. Several factors made her decide to use Thai products, including product quality, reasonable price, advertising, popularity among friends, and ease of purchase.

Respondent 5 confirmed that before border conflicts, he had used many Thai products, such as electrical appliances including electric rice cookers, light bulbs, electric wires, refrigerators, air conditioners, etc. He has also used construction materials, cement, tools used during construction, and many things. Thai product use was because the products were of international standard quality, affordable prices, and from large companies (Samsung, LG). The factories were located in Thailand, which had made imports cheaper than those imported from other countries, which were expensive, for example, refrigerators, air conditioners, washing machines and many other construction equipment.

Table 2: Factors affecting Thai product use before border conflicts (H1-H3)

Hypothesis	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	VIF	TOL	Sig.
H1: ATT-TPU	.652	.425	.414	.47983	1.950	1.305-2.090	0.449-0.766	.00
H2: SUN-TPU	.534	.285	.276	.53337	1.990	1.276-1.6	0.625-0.784	.00
H3: PBC-TPU	.568	.323	.312	.51998	1.722	1.450-2.177	0.459-0.690	.00

Source: Authors, 2026

4.3. Influence of Nationalism and Boycott on Continued Use of Thai Products

This part discusses the impacts of nationalism and boycotts by Cambodian university students on Thai product use. It consists of two hypotheses: H4: prediction of nationalism on Thai product use among Cambodian university students, while H5 focuses on the prediction of boycotts of Thai product use among Cambodian university students.

The regression assumption analysis confirmed that all assumption requirements for hypotheses 4 and 5 were met. The assumption analysis confirmed that the Durbin-Watson of H4 was 1.7881, while the Durbin-Watson of H5 was 1.818. The VIF of H4 was 1, and that of H5 was 1. The tolerance of H4 was 1, and the tolerance of H5 was 1.

The regression analysis confirmed that nationalism could predict the Thai product use among Cambodian students. H4: Prediction of nationalism among Cambodian university students negatively and significantly predicts the continuation of Thai product use intention. It means that 10.3% of variance in continuation of Thai product use intention could be explained by nationalism (R^2=.103; Sig.=0.00).

This study aligned with Wu, Latif, and Li (2023) that there are direct impacts of nationalism on Chinese consumers' brand preferences and loyalty. A domestic brand was more likely selected by Chinese consumers, and this decision was shaped by a sense of national pride and loyalty. There was an effect of nationalism on consumer preferences and purchase decisions (Shimp & Sharma, 1987). When people become nationalistic, they will reject foreign brands, and this could lead to an increase in the domestic product preference (Josiassen & Assaf, 2022). Nationalism occurred during geopolitical conflicts, and this nationalism could lead to opposition against foreign products (Zhou et al., 2023). Lee and Chen (2022). Nationalistic consumers desired to support their country's economy and

cultural identity; they have decided to choose domestic products (Ahmed & Aslam, 2024). People in Malaysia had a sense of national pride and loyalty; they preferred local brands (Josiassen & Assaf, 2022). The people preferred domestic products due to nationalist sentiments (Josiassen & Assaf, 2022). Zhou et al. (2023) evidenced that when geopolitical conflicts occurred, there was an increase in nationalist sentiments, and this could increase consumer churn for brands.

In addition, the regression result of hypothesis 5 confirmed that the intention to continue using Thai products was statistically and negatively influenced by boycotts among Cambodian university students (Sig. = 0.00). It can be explained that 14.2% of variance in Thai product use among Cambodian university students could be explained by behavioural control ($R^2 = 0.142$). Boycotting as a form of protest has been widely studied and gained prominence in recent years. This study result is consistent with a number of studies. A powerful form of consumer activism could influence purchasing decisions and brand loyalty (John & Klein, 2023). When people boycott products, they could cause the loss of trust and reputation for brands. This condition could influence consumers to find other alternative brands (Farah & Newman, 2010; Ahmad et al., 2016). The consumer behaviour, including brand loyalty and purchasing decisions, shifted due to the boycotts (Kim et al., 2004; Ahmad et al., 2016; Hoffmann et al., 2022). Kim and Choi (2023) evidenced that when people did the social media-fuelled boycotts, there was more impact on consumer churn than with traditional boycotts due to the viral nature of online communication.

According to respondent 1, when the border conflict occurred, she still used some Thai products, but less frequently. Some products were already part of her daily routine, and sometimes it was difficult to find good alternatives immediately. However, she became more careful about her purchasing decisions and started trying products from other countries and local brands as well. In the future, she may still use Thai products if they provide good quality, and reasonable prices, and suit her needs. She believed consumers usually focus on product value and personal preference. However, she is also open to supporting local products and exploring other international brands to have more choices.

Respondent 2 had decided not to use a Thai product next time because there was a growing trend of supporting "local products (Khmer products)". The quality of domestic goods was more developed. She wants to boost the national economy, create jobs for citizens, and reduce dependence on foreign countries.

Respondent 3 has stopped using Thai products since the conflict began, and he will not do so next time because he hates Thailand. He wants to support local products. He would look for substitute products or goods, and he felt nationalism, sentiment, and political tension.

Respondent 4 said that when the border conflict occurred, she still used some Thai products because she had used them for a long time and was confident in their quality. However, she also reduced the use of some products. She would not continue to use Thai products because she was not happy with Thailand. Moreover, she felt nationalism, and she wanted to support local products, or she could find substitute products.

According to respondent 5, when there was a border conflict, he still used Thai products because there was no substitute product in both quality and price, but some items have already been used, including refrigerators, washing machines, and air conditioners because Thai products have excellent quality that is in line with international standards. Currently, he continues to use old products that were imported before the border conflict instead of excessively boycotting them, which harms the interests of Cambodians who purchased those products and sold them in the market. In the future, he plans to no longer use products imported from Thailand. Because of the war issue, some products cannot be made in Cambodia. The quality was acceptable. If there were alternative products that met international quality standards, he would consider them. He wouldn't boycott all products because some, like electricity, fuel, machinery, and steel, can't be made in Cambodia. If such products were imported from other countries, they were much pricier.

Table 3: Influence of Nationalism and Boycott on Continued Use of Thai Products

Hypothesis	**R**	**R Square**	**Adjusted R Square**	**B**	**Durbin-Watson**	**VIF**	**TOL**	**Sig.**
H4: NAN-CI	.322	.103	.101	-.29	1.7881	1	1	.00
H5: BOY-CI	.477	.142	.139	-.33	1.818	1	1	.00

Source: Authors, 2026

5. Conclusion and Recommendation

The study analyses the relationship between factors and the behaviour of Cambodian university students and also the relationship between nationalism and boycotts on Thai product use among Cambodian university students. Thai product use declined before and after Cambodia-Thai border conflicts. The research found that Thai product use before conflicts was shaped by three main factors: attitude, subjective norm, and perceived behavioural control. In addition, when Cambodian university students have become more nationalistic and they have boycotted Thai products, these have negatively affected the continuation intention to use Thai products.

This study has significant theoretical and policy implications. This study's findings validate the theory that explains three factors – attitude, subjective norms, and perceived behavioural control – that affect individuals' decision-making. This study finding was aligned with this theory. This study focused only on students who have used Thai products. Therefore, in practice, this study explored only the relationship between attitude, subjective norm and perceived behavioural control and actual use, while intention was not included in this analysis. This study broadened the theory of consumer behaviour, demonstrating that various factors, including psychological, social, and cultural ones, shape individual decisions. As a part of social factors, this study explored the relationship between nationalism and boycotts and the continuous intention to use Thai products. Moreover, the

research finding was really helpful for the government for policy development and business sectors for their policy and strategy development in order to cope with the trends of product use.

Some gaps in these studies and further studies should be carried out. The qualitative approach should be adopted in another study on this topic, as this study limited the qualitative data. Moreover, the studies should include more variables, such as price changes, brand loyalty, income, and the variety of choices available, to better explain why people buy things. Comparative research on various foreign items could enhance our understanding of how nationalism and boycott campaigns influence consumer behaviour in emerging nations.

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CHAPTER II

NEW TOOLS AND SERVICES

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WHY INVEST IN PARCEL LOCKERS? AN ECONOMIC ASSESSMENT ACROSS ITALIAN METROPOLITAN CITIES

Abstract: The growth of business-to-consumer e-commerce has increased pressure on urban last-mile delivery systems, especially in metropolitan areas affected by parcel-flow concentration, congestion and fragmented deliveries. Parcel lockers and pick-up and drop-off points are increasingly used as out-of-home delivery solutions, but their effectiveness depends on location, accessibility, demand density and integration with daily mobility routines. This paper proposes a planning-oriented techno-economic framework to evaluate parcel locker investment potential in the 14 Italian metropolitan cities included in the Italian National Institute of Statistics (ISTAT) framework. The method combines six dimensions: demand potential, mobility and accessibility, urban logistics pressure, economic feasibility, sustainability potential and territorial equity. Under the assumptions adopted in the exploratory scoring framework, Rome, Milan, Naples and Turin receive the highest scenario-based investment-priority scores. A hypothetical metropolitan-priority scenario distributes 4,000 lockers across the 14 metropolitan cities, corresponding to an initial investment of approximately EUR 48.0 million and a theoretical annual handling capacity of 58.4 million parcels under the central assumptions. The paper interprets parcel lockers as small-scale urban logistics infrastructure rather than only private delivery assets. The results should be interpreted as an exploratory planning scenario rather than as a definitive investment ranking or operator-specific financial forecast.

Keywords: investment evaluation, e-commerce, sustainable logistics

DLACZEGO WARTO INWESTOWAĆ W AUTOMATY PACZKOWE? OCENA EKONOMICZNA WŁOSKICH MIAST METROPOLITALNYCH

Streszczenie (abstrakt): Rozwój handlu elektronicznego w modelu business-to-consumer (B2C) zwiększył presję na systemy miejskich dostaw ostatniej mili, szczególnie na obszarach metropolitalnych dotkniętych koncentracją przepływu przesyłek, zatłoczeniem oraz rozproszonym charakterem dostaw. Automaty paczkowe oraz punkty odbioru i nadawania przesyłek (PUDO) są coraz częściej wykorzystywane jako rozwiązania dostaw poza miejscem zamieszkania, jednak ich skuteczność zależy od lokalizacji, dostępności, gęstości popytu oraz integracji z codziennymi wzorcami mobilności. Niniejszy artykuł proponuje ukierunkowane na planowanie ramy techno-ekonomiczne służące do oceny potencjału inwestycyjnego w zakresie automatów paczkowych w 14 włoskich miastach metropolitalnych uwzględnionych w ramach Włoskiego Narodowego Instytutu Statystyki (ISTAT). Metoda łączy sześć wymiarów: potencjał popytu, mobilność i dostępność, presję związaną z logistyką miejską, wykonalność ekonomiczną, potencjał zrównoważonego rozwoju oraz równość terytorialną. Zgodnie z założeniami przyjętymi w eksploracyjnych ramach punktowej

oceny, Rzym, Mediolan, Neapol i Turyn uzyskują najwyższe scenariuszowe wyniki w zakresie priorytetu inwestycyjnego. Hipotetyczny scenariusz priorytetyzacji metropolitalnej zakłada rozmieszczenie 4000 automatów paczkowych w 14 miastach metropolitalnych, co odpowiada początkowej inwestycji w wysokości około 48,0 mln EUR oraz teoretycznej rocznej zdolności obsługi wynoszącej 58,4 mln przesyłek przy zastosowaniu założeń centralnych. W artykule automaty paczkowe są postrzegane jako infrastruktura miejskiej logistyki na małą skalę, a nie wyłącznie jako prywatne aktywa wykorzystywane do realizacji dostaw. Wyniki należy interpretować jako eksploracyjny scenariusz planistyczny, a nie jako ostateczny ranking inwestycyjny ani prognozę finansową dotyczącą konkretnego operatora.

Słowa kluczowe: ocena inwestycji, handel elektroniczny, zrównoważona logistyka

1. Introduction

The rapid growth of e-commerce has deeply transformed urban logistics and last-mile delivery systems, increasing the number of small, fragmented and time-sensitive shipments in cities (Bosona, 2020; Lim et al., 2018; Olsson et al., 2019; Viu-Roig & Alvarez-Palau, 2020). According to Netcomm, Italian B2C e-commerce was projected to exceed EUR 62 billion in 2025, involving approximately 35.2 million online consumers (Netcomm, 2025). This growth directly affects the last mile, which is widely recognised as one of the most costly and inefficient segments of the logistics chain because it combines dispersed demand, delivery-time constraints, congestion, curbside conflicts and failed delivery attempts (Lim et al., 2018; Olsson et al., 2019).

In this context, parcel lockers (PLs) and pick-up and drop-off (PUDO) points are increasingly discussed as strategic out-of-home (OOH) delivery solutions. PLs are automated self-service units that allow users to collect and return parcels through digital access systems, while PUDO points are staffed or semi-staffed collection and return locations, often located in shops, supermarkets, petrol stations, post offices or transport nodes. Both models reduce the dependency between courier arrival and customer presence and can transform dispersed home deliveries into consolidated deliveries to fixed points (Deutsch & Golany, 2018; Dong et al., 2023; Iwan et al., 2016; Punakivi et al., 2001; Seghezzi et al., 2022).

The evolution of PLs and PUDO networks is closely connected with marketplace strategies. Major e-commerce and logistics operators have invested in OOH delivery to increase delivery flexibility, reduce failed deliveries, lower labour-intensive doorstep operations and strengthen customer loyalty. Amazon began testing lockers in large urban markets in the early 2010s and later expanded locker networks in Europe to widen delivery options and reduce delivery costs (Sorrel, 2011; Thomasson & Rotscheroth, 2016). InPost has built one of the largest European OOH networks, reporting more than 83,000 OOH points at the end of Q1 2025, including nearly 50,000 automated parcel machines and over 33,000 PUDO points across nine European countries (InPost, 2025). Poste Italiane also operates the Punto Poste network, composed of more than 18,000 pick-up points and lockers for parcel collection and returns (Poste Italiane, n.d.).

From a sustainability perspective, the framework evaluates parcel lockers not only in terms of delivery efficiency and investment feasibility, but also through their potential

contribution to delivery consolidation, reduced failed deliveries, integration with walking and public transport, more efficient use of urban space and improved service accessibility in peripheral areas.

The Italian case is particularly relevant. In September 2024, delivery company DHL eCommerce and "Poste Italiane", Italy's national postal service provider, launched the service called "Locker Italia", a provider-agnostic joint venture aiming to develop a national network of 10,000 parcel lockers, with the first locker installed in Rome, the capital of Italy (DHL Group, 2024; Poste Italiane, 2024). This initiative indicates that parcel lockers are moving from isolated private installations to a structured infrastructure model for OOH delivery. At the same time, Italian metropolitan cities concentrate population, commuting flows, retail activity and public transport nodes, making them suitable contexts for evaluating parcel-locker investment.

This paper focuses on parcel locker investment as both a planning and techno-economic evaluation problem. Its main contribution is the development of a multidimensional framework that combines urban logistics, spatial accessibility and investment assessment in a single analytical structure. Rather than considering parcel lockers only as operational delivery devices, the paper interprets them as small-scale urban logistics infrastructure whose performance depends on the interaction between demand concentration, pedestrian accessibility, transport-node proximity, delivery potential and management costs.

The methodological innovation lies in the integration of two complementary scales of analysis. At the metropolitan scale, the framework classifies Italian metropolitan cities according to their investment potential, using public proxy indicators related to population, density, accessibility, logistics pressure, market feasibility, sustainability and territorial equity. In the Italian institutional context, a metropolitan city is an administrative authority comprising a major central city and its surrounding municipalities. It therefore covers a wider and more heterogeneous territory than the municipality of the central city alone.

At the intra-urban scale, the paper identifies the most suitable location typologies for parcel locker deployment, including railway and metro stations, public transport interchanges, retail areas, university and business districts, dense residential neighbourhoods and peripheral areas. The paper's innovation lies in integrating metropolitan-scale spatial prioritisation with intra-urban location analysis and techno-economic assessment to evaluate parcel lockers as shared urban logistics infrastructure rather than merely private delivery assets.

The paper also introduces a simplified techno-economic module that translates the investment-priority scores into scenario-based estimates of locker allocation, initial investment cost, annual management and maintenance expenditure, theoretical handling capacity and simple payback period. This allows the analysis to move beyond a purely descriptive approach and to provide an exploratory assessment of the potential economic implications of parcel locker deployment under transparent assumptions.

The main argument is that parcel lockers generate value when high demand, daily mobility routines, pedestrian accessibility and logistics consolidation potential overlap. In these conditions, lockers can reduce failed deliveries, support out-of-home collection and increase the efficiency of last-mile operations. Poorly located lockers, by contrast, may generate limited economic and environmental benefits or even shift part of the burden to users if parcel collection requires additional car trips (Campisi & Di Ruocco, 2025; Klein & Popp, 2022). More specifically, no previous study identified in the reviewed literature has compared all 14 Italian metropolitan cities by combining demand potential, accessibility, logistics pressure, economic feasibility, sustainability and territorial equity within a single parcel-locker investment framework.

Therefore, the investment value of parcel lockers depends not only on the number of units installed, but on the quality of their integration with metropolitan mobility patterns and urban planning objectives.

The paper addresses three research questions:

RQ1: How can parcel locker investments improve the efficiency and sustainability of urban last-mile delivery systems?

RQ2: Which spatial, logistics and socio-economic indicators should guide the location and prioritisation of parcel locker investments?

RQ3: Under which conditions can parcel lockers be considered urban logistics infrastructure rather than only private delivery assets?

The paper follows this structure. Section 2 describes the literature background, Section 3 concerns materials and methods. Results are presented in Section 4, discussion in Section 5, while conclusion is presented in Section 6.

2. Literature background

The literature on parcel lockers has expanded rapidly in recent years, reflecting the growing relevance of e-commerce, OOH delivery and sustainable urban logistics. The field can be read as an evolutionary trajectory. Early studies investigated unattended reception to reduce home-delivery inefficiencies. A second phase focused on parcel lockers as operational devices for delivery consolidation and network design. A third phase connected lockers and PUDO points with consumer acceptance, accessibility, equity, sustainability and governance. The most recent research links PLs to digital platforms, dynamic capacity management, marketplace strategies and public-private urban logistics policies.

The first stream frames parcel lockers within the broader transformation of last-mile logistics. Reviews by Lim et al. (2018), Olsson et al. (2019), Bosona (2020) and Viu-Roig and Alvarez-Palau (2020) show that last-mile delivery research has shifted from purely operational questions to wider sustainability, consumer and urban-policy perspectives. This evolution is important because PLs and PUDO points are no longer studied only as delivery alternatives, but as part of an urban logistics ecosystem shaped by e-commerce growth, congestion, emissions, service expectations and public-space constraints (Bosona, 2020; Lim et al., 2018; Olsson et al., 2019; Viu-Roig & Alvarez-Palau, 2020).

A second stream focuses on parcel lockers as an efficiency and cost-reduction solution. Punakivi et al. (2001) provide a foundational contribution by analysing unattended reception models and showing how they reduce the need for customer presence. Iwan et al. (2016) empirically analyse the Polish InPost system, highlighting the potential of PLs to improve delivery consolidation. Deutsch and Golany (2018) formalise parcel locker network design as the choice of the optimal number, locations and sizes of lockers. Seghezzi et al. (2022) and Dong et al. (2023) further show that economic convenience depends on density, delivery volumes, distance and user behaviour. These studies clarify that the value of lockers derives from delivery density, fewer stops and lower failed-delivery costs, but that the magnitude of benefits depends on network design and utilisation.

A third stream links the diffusion of PLs and PUDO points with marketplace strategies and the "platformisation" of last-mile delivery: Amazon locker initiatives illustrate how large marketplaces use automated collection points to increase consumer convenience, reduce delivery failures and internalise part of the last-mile infrastructure (Sorrel, 2011; Thomasson & Rotscheroth, 2016). InPost and Poste Italiane show a complementary model based on dense OOH networks that combine automated parcel machines, PUDO points and partnerships with retail or postal infrastructures (InPost, 2025; Poste Italiane, n.d.). The Locker Italia joint venture further suggests that the Italian market is moving towards provider-agnostic, network-based investments in OOH delivery infrastructure (DHL Group, 2024; Poste Italiane, 2024).

A fourth stream examines PUDO, PLs and the spatial organisation of accessibility. Oliveira et al. (2017) analyse the demand for automated delivery stations, while Keeling et al. (2021) examine accessibility and equity of common-carrier parcel lockers at transit facilities. Schaefer and Figliozzi (2021) study Amazon locker locations in Portland using highway, land-use, employment and socio-demographic datasets. Campisi and Di Ruocco (2025) provide a recent literature review on accessibility and spatial location, showing that proximity, territorial context, rural accessibility and digital divides strongly influence implementation and acceptance. Related work by Campisi et al. (2025) and Russo et al. (2024) links pick-up points with walking accessibility and urban planning, demonstrating the relevance of short walking catchments for sustainable last-mile logistics.

A fifth stream focuses on users and customer value. Vakulenko et al. (2018) show that PL use is strongly associated with flexibility, convenience and control. Merkert et al. (2022), Klein and Popp (2022), Cebeci et al. (2023), Jang et al. (2024) and Chen et al. (2024) demonstrate that adoption depends on service attributes, perceived sustainability, safety, digital usability and compatibility with daily routines. This literature is particularly relevant for investment evaluation because a technically efficient locker network may fail if users do not perceive lockers as accessible, safe and convenient.

A sixth stream examines optimisation, technology and network design. Boysen et al. (2021) review last-mile delivery concepts from an operations research perspective. Kahr (2022) proposes an approach to determine parcel-locker locations and layouts to support supply-chain viability at the last-mile delivery tier. Schwerdfeger and Boysen (2020), Liu

et al. (2023), Sailer et al. (2024) and Li and Li (2025) extend the debate to mobile lockers, dynamic demand management, location-routing problems and transit-integrated parcel locker systems. These studies are important because they demonstrate that PL investment is not only a siting problem, but also a capacity, routing and demand-management problem. A final group of studies concerns sustainability, governance and public policy. Gutenschwager et al. (2024) compare direct deliveries and automated parcel locker systems with respect to CO2 emissions, while Mohri et al. (2024) question who benefits from on-premises parcel lockers. Bloemer and Minner (2025) assess last-mile networks combining micro-depots, cargo bikes, parcel lockers and parcel shops, and Knapskog et al. (2025) analyse policies on parcel lockers through multi-level governance networks, logistics operators and customer practices. This confirms that the public value of PLs depends on location, access mode and integration with broader sustainable urban logistics strategies.

Table 1. Summary of main studies on parcel lockers and their relevance to the study

Stream	Selected studies	Main contribution
Last-mile and e-commerce pressure	Lim et al. (2018); Olsson et al. (2019); Bosona (2020); Viu-Roig and Alvarez-Palau (2020)	Frames PLs/PUDO within fragmented urban delivery demand and sustainability challenges
Efficiency and cost reduction	Punakivi et al. (2001); Iwan et al. (2016); Deutsch and Golany (2018); Seghezzi et al. (2022); Dong et al. (2023)	Supports the link between lockers, delivery consolidation, cost reduction and network design
Accessibility and spatial equity	Oliveira et al. (2017); Keeling et al. (2021); Schaefer and Figliozzi (2021); Campisi and Di Ruocco (2025); Russo et al. (2024)	Justifies proximity, transit access, walking catchments and territorial-equity indicators
Users and acceptance	Vakulenko et al. (2018); Merkert et al. (2022); Klein and Popp (2022); Cebeci et al. (2023); Jang et al. (2024); Chen et al. (2024)	Highlights convenience, perceived value, safety and compatibility with daily routines
Optimisation and technology	Boysen et al. (2021); Kahr (2022); Schwerdfeger and Boysen (2020); Liu et al. (2023); Sailer et al. (2024); Li and Li (2025)	Inspires the methodological adaptation from optimisation to a planning-oriented framework
Sustainability and governance	Gutenschwager et al. (2024); Mohri et al. (2024); Bloemer and Minner (2025); Knapskog et al. (2025)	Frames PLs/PUDO within fragmented urban delivery demand and sustainability challenges

The review identifies three gaps. First, many studies analyse parcel lockers from a single perspective, such as operational efficiency, consumer behaviour or location optimisation. Second, the urban-planning dimension remains underdeveloped: lockers are often treated as delivery devices rather than as infrastructure embedded in mobility patterns, land use and public policy. Third, the investment decision is rarely connected to both private and public value. This paper addresses these gaps by proposing

a multidimensional investment framework that combines demand potential, spatial accessibility, operational efficiency, environmental performance, economic feasibility and territorial equity.

3. Materials and methods

3.1. Case-study area and rationale of the choice

The study focuses on a set of Italian metropolitan cities as the most appropriate territorial scale for assessing parcel locker investment in urban last-mile logistics. Metropolitan cities are relevant because they concentrate population, employment, commuting flows, commercial activities, universities, transport nodes and e-commerce demand. At the same time, they experience congestion, curbside pressure, failed delivery attempts and environmental externalities associated with fragmented home deliveries.

The analysis considers the 14 Italian metropolitan cities included in the Italian National Institute of Statistics (ISTAT) metropolitan-city framework (Fig. 1): Milan, Turin, Genoa, Bologna, Florence and Venice in Northern and Central-Northern Italy; Rome in Central Italy; Naples, Bari and Reggio Calabria in Southern Italy; and Palermo, Catania, Messina and Cagliari in the major Italian islands of Sicily and Sardinia.

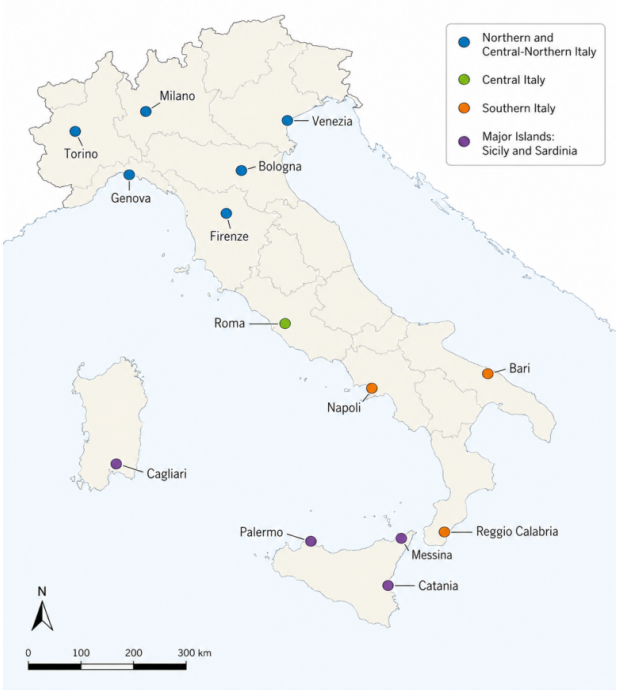


Figure 1. Italian metropolitan cities included in the analysis

Source: author's elaboration

ISTAT reports that these metropolitan cities cover 15.4% of the Italian territory but concentrate 36.2% of the national population, corresponding to more than 21.3 million residents (Istituto Nazionale di Statistica, 2023; Istituto Nazionale di Statistica, 2024). Their demographic and functional concentration makes them a meaningful scale for studying PLs and PUDO as small-scale urban logistics infrastructure.

The rationale for selecting metropolitan cities is fourfold. First, parcel locker profitability depends on demand density and delivery consolidation, which are more likely in dense and functionally complex metropolitan areas. Second, metropolitan cities include major railway stations, metro and tram systems, retail districts, university poles and business districts, which are candidate locations for OOH collection. Third, metropolitan areas include both central and peripheral municipalities, allowing the framework to consider not only profitability, but also territorial equity and service coverage. Fourth, the focus on Italian metropolitan cities addresses a specific gap in the literature. While parcel lockers and PUDO networks have been widely examined in relation to operational efficiency, user acceptance, accessibility and sustainability, fewer studies have investigated their investment potential in the Italian context and, more specifically, at the scale of metropolitan cities. This paper therefore contributes to the literature by linking parcel locker investment with the spatial structure, mobility systems and internal territorial differences of Italian metropolitan areas.

The study adopts two complementary spatial scales. The first is the metropolitan scale, used to classify cities according to their general parcel locker investment potential. The second is the intra-urban scale, used to identify suitable location typologies within each metropolitan area, such as railway and metro stations, public transport interchanges, retail areas, university and business districts, dense residential neighbourhoods and peripheral areas. Table 2 summarises the main demographic and territorial characteristics of the 14 metropolitan cities considered in the analysis.

Table 2. Metropolitan cities considered in the analysis

Metropolitan city	**Population**	**Density (inh./km²)**	**Municipalities**
Rome	4,224,901	787	121
Milan	3,253,111	2 065	133
Naples	2,954,847	2 504	92
Turin	2,204,779	323	312
Bari	1,218,073	315	41
Palermo	1,195,307	239	82
Catania	1,067,550	299	58
Bologna	1,024,290	277	55
Florence	988,494	281	41
Venice	834,077	337	44
Genoa	820,691	447	67
Messina	594,074	182	108
Cagliari	534,219	124	70
Reggio Calabria	510,590	159	97

3.2. Public data and proxy indicators

The empirical analysis relies on publicly available data and proxy indicators. Detailed parcel-flow data, proprietary delivery records and installation costs are generally not publicly available. For this reason, the paper adopts an exploratory proxy-based approach using demographic, territorial, mobility, market and policy indicators. Population and density values are derived from public statistical sources based on ISTAT data and updated to 1 January 2026 (Istituto Nazionale di Statistica, 2023; Tuttitalia, n.d.), as shown in Table 2.

Table 3. Public data and proxy indicators used in the framework

Data category	**Indicator**	**Source**
Demographic structure	Population, density, households	ISTAT census and demographic data
Metropolitan structure	Central city, surrounding municipalities, inner/peripheral areas	ISTAT BES Territori and metropolitan reports
Accessibility	Railway stations, metro/tram systems, public transport nodes	PUMS, local open data, transport operators
Urban logistics pressure	Congestion, limited traffic zones (Zone a Traffico Limitato – ZTLs), curbside pressure, freight regulation	PUMS, municipal plans, urban mobility policies
Market context	Locker Italia, Punto Poste, InPost, PUDO networks	Poste Italiane, DHL, InPost, locker operators
Policy context	PUMS/SUMP, SULP, TEN-T urban nodes	European Commission, municipal/metropolitan plans

The policy dimension is linked to the European framework on sustainable urban mobility and TEN-T urban nodes. The revised TEN-T framework identifies urban nodes as strategic components of a multimodal and sustainable transport network and strengthens the role of Sustainable Urban Mobility Plans (SUMPs) in urban nodes (European Commission, n.d.-a; European Commission, n.d.-b). This policy context justifies the interpretation of PLs and PUDO points as urban logistics facilities that should be coordinated with mobility planning, public-space management and low-emission delivery strategies.

The methodological rationale assumes that parcel lockers are not only operational delivery devices, but also small-scale urban logistics infrastructure. Their performance depends on the interaction between demand concentration, spatial accessibility, user behaviour, operational consolidation, environmental benefits and investment feasibility.

The framework is inspired by studies on parcel locker location, network design and accessibility assessment. Kahr (2022) provides the main methodological reference by linking locker location, layout, capacity, investment cost and operational performance. However, while Kahr's approach requires detailed operational data, the present paper adapts its logic to a metropolitan planning perspective. Deutsch and Golany (2018) support

the interpretation of lockers as an infrastructure network rather than isolated delivery points. Keeling et al. (2021), Schaefer and Figliozzi (2021), Li and Li (2025) and Campisi and Di Ruocco (2025) justify the inclusion of accessibility, transit integration, proximity and territorial context among the evaluation criteria.

The proposed methodology is therefore a planning-oriented adaptation of location-allocation and accessibility-based approaches. Rather than applying a full optimisation model, which would require proprietary parcel-flow data, detailed cost information and real-time operational records, the study translates these approaches into an exploratory multicriteria framework for comparing Italian metropolitan cities.

3.3. Scoring model and economic investment module

The framework is based on six evaluation dimensions: demand potential (D), mobility and accessibility (A), urban logistics pressure (L), economic feasibility (E), sustainability potential (S) and territorial equity (Q). Each metropolitan city i is assessed using a score from 1 to 5 for each dimension, where 1 indicates very low potential and 5 indicates very high potential. The total Investment Potential Score (IPS) is calculated as:

(1) $$IPS_i = D_i + A_i + L_i + E_i + S_i + Q_i$$

with 6 <= IPSi <= 30.

The six dimensions are treated as equally relevant in the baseline specification and therefore receive identical weights. The resulting scores represent comparative planning assessments based on the available public evidence rather than direct measurements of parcel demand, profitability or environmental performance. The resulting IPS is classified into four priority levels: very high for scores from 25 to 30, high for scores from 19 to 24, medium for scores from 13 to 18, and low for scores from 6 to 12. Accordingly, Reggio Calabria, with an IPS of 19, falls within the high-priority category, whereas Cagliari, with an IPS of 18, represents the upper limit of the medium-priority category.

Each dimension was scored on an ordinal scale by comparing the 14 metropolitan cities. Table 4 lists the indicators and Table 5 reports the supporting evidence for each city. Scores of 1 and 5 indicate very limited and very strong evidence, respectively. Scores of 2, 3 and 4 indicate intermediate levels in ascending order. The scores summarise the comparative assessment of the evidence and are reported in Table 6.

The module does not estimate the business plan of a specific operator; rather, it provides an exploratory order-of-magnitude calculation using public market targets and transparent assumptions. The national benchmark is the announced Locker Italia target of 10,000 lockers across Italy (DHL Group, 2024; Poste Italiane, 2024). Since the 14 metropolitan cities account for about 36.2% of the national population (Istituto Nazionale di Statistica, 2023), a purely proportional allocation would imply approximately 3,620 lockers. The value is rounded to 4,000 lockers to construct a hypothetical metropolitan-priority scenario. The unit investment costs, annual management coefficient and daily throughput assumptions were calibrated using publicly available corporate

reports, procurement documents and market benchmarks and were cross-checked through informal consultations with parcel-locker and last-mile delivery operators.

The framework distinguishes commercial attractiveness from public-policy relevance. Demand potential, accessibility, logistics pressure and economic feasibility primarily capture market and operational conditions, whereas sustainability potential and territorial equity capture the wider public value of deployment. A high equity score may therefore identify a need for policy-supported service provision even when private profitability is comparatively lower.

The scenario-based allocation of lockers across cities is calculated using both metropolitan population and investment-priority scores. First, a weighted demand factor Wi is defined as:

(2) $W_i = P_i \times IPS_i$

where Pi is the population of metropolitan city i and IPSi is its investment-potential score.

The allocation share of each city is then calculated as:

(3) $share_i = \frac{w_i}{\sum w_j}$

where j = 1, …, 14.

The scenario-based number of lockers in each metropolitan city is obtained as:

(4) $N_i = N_M \times share_i$

where NM is the metropolitan deployment scenario, set equal to 4,000 lockers. Fractional allocations were rounded using the largest-remainder method.

Because population also contributes to the demand-potential dimension, multiplying the IPS by population may increase the influence of metropolitan size. The baseline allocation is therefore interpreted as a demand-oriented scenario rather than as a neutral ranking. Alternative specifications based on the IPS alone, or on population combined with the non-demographic dimensions, should be used as robustness checks in future applications.

The initial investment cost for each city is calculated as:

(5) $I_i = N_i \times C_u$

where Ii is the initial investment cost, Ni is the estimated number of lockers and Cu is the unit investment cost per locker. Three scenarios are considered: low unit investment = EUR 8,000 per locker, central unit investment = EUR 12,000 per locker, and high unit investment = EUR 20,000 per locker.

In the absence of harmonised operator-level cost data, three unit-investment values are adopted as low, central and high sensitivity assumptions. These values are intended to test the effect of cost variation and do not represent quotations from a specific supplier.

The annual management and maintenance cost is estimated as a percentage of the initial investment cost:

(6) $M_i = I_i \times \alpha$

where Mi is the annual management and maintenance cost and α is the annual cost coefficient. In the central scenario, α is set equal to 15% of the initial investment cost.

The annual coefficient of 15% is adopted as a central sensitivity assumption encompassing routine management, maintenance, connectivity and servicing costs. Actual expenditure may vary according to locker size, technology, site conditions, contractual arrangements and operator structure.

Annual parcel-handling capacity is estimated as:

(7) $H_i = N_i \times q \times 365$

where q is the average number of parcels handled per locker per day.

The central scenario assumes q = 40 parcels/locker/day, while sensitivity tests use q = 25 and q = 60.

The utilisation values of 25, 40 and 60 parcels per locker per day represent low, central and high operational scenarios. They indicate theoretical throughput under different utilisation conditions rather than observed performance in the selected metropolitan cities.

The cost intensity of the investment can be expressed as capital cost per annual parcel-handling unit:

(8) $C_i = \frac{I_i}{H_i}$

where Ci is the investment cost per annual parcel-handling unit.

Under alternative assumptions concerning the contribution margin per handled parcel, a simple payback-period indicator can be calculated as:

(9) $R_i = \frac{I_i}{(H_i \times m - M_i)}$

where R_i is the simple investment recovery period and m is the contribution margin per handled parcel before deduction of the annual management and maintenance costs included in (M_i). Because margins are proprietary and vary among operators, EUR 0.30-0.70 per parcel is used as a sensitivity range. The resulting indicator is a simple, undiscounted payback period and not a complete financial appraisal based on net present value or internal rate of return.

This economic module allows the study to translate a qualitative investment-potential score into a numerical deployment scenario. It also makes the assumptions explicit and reproducible, so that future applications can replace proxy values with real parcel flows, actual installation costs, locker capacity, tariff structures and utilisation rates.

Table 4. Main indicators used for the economic analysis

Dimension	**Main Indicators**	**Meaning for parcel locker investment**
Demand potential	Population, density, households, commercial density, e-commerce demand proxy	Identifies cities and urban areas where parcel volumes are expected to be higher
Mobility and accessibility	Railway stations, metro/tram stops, public transport nodes, walking accessibility	Measures the possibility of collecting parcels during existing daily trips
Urban logistics pressure	Congestion, ZTL, delivery fragmentation, curbside pressure	Captures the need to reorganise last-mile delivery
Economic feasibility	Existing locker/PUDO networks, expected demand, installation opportunities	Evaluates whether the investment may generate sufficient use and operational return
Sustainability potential	Avoided failed deliveries, avoided vehicle-km, modal integration	Assesses the environmental contribution of locker deployment
Territorial equity	Peripheral districts, inner areas, underserved municipalities, accessibility gaps	Considers the public value of extending services beyond central areas

4. Results

4.1 Metropolitan quantitative profile

The 14 metropolitan cities considered in the analysis account for approximately 21.4 million residents. Their demographic profile is highly uneven. Rome, Milan, Naples and Turin represent the largest metropolitan markets, while Naples and Milan show the highest densities. These characteristics are relevant because high population concentration and density are expected to increase parcel demand, delivery consolidation potential and the economic viability of lockers (Fig. 2). Figure 2 provides a geographical view of the metropolitan cities considered in the framework and visually highlights the concentration of the highest-priority cities in the most densely urbanised and logistically strategic parts of Italy.

The evidence summarised in Table 5 was converted into comparative ordinal scores ranging from 1 to 5. The assessment reflects the relative position of each metropolitan city within the selected sample and should not be interpreted as a direct measurement of parcel demand, financial profitability or environmental performance. The final IPS values and corresponding priority categories are reported in Table 6.

Table 5. Empirical and documentary indicators supporting the metropolitan scoring framework

Metropolitan city	Demand potential	Mobility and accessibility	Urban logistics pressure	Economic feasibility	Sustainability potential	Territorial equity
Rome	Largest metropolitan population and widely distributed residential and commercial demand	Extensive rail, metro, bus and interchange network	High congestion, delivery fragmentation, restricted-access areas and curbside pressure	Large potential market and established OOH delivery presence	Strong potential for consolidating deliveries and integrating collection with public transport	Extensive peripheral territory and marked differences in service accessibility
Milan	Very large population, highest functional density and strong commercial demand	Extensive metro, suburban rail, tram and multimodal network	Very high delivery intensity, congestion and competition for curb space	Mature e-commerce market and extensive OOH network	Very high potential for trip chaining and low-car parcel collection	Strong central accessibility but comparatively lower territorial dispersion
Naples	Large population and the highest metropolitan residential density	Major rail, metro and interchange nodes, although accessibility is spatially uneven	High congestion, dense urban fabric and fragmented delivery conditions	Large potential demand and favourable conditions for delivery consolidation	Strong potential for reducing failed and fragmented home deliveries	Significant accessibility differences between central and peripheral municipalities
Turin	Large metropolitan population and diversified residential and employment demand	Developed metro, tram, rail and public transport network	High congestion and urban freight pressure in central and dense areas	Established logistics market and favourable demand conditions	Good potential for integration with sustainable mobility and daily commuting	Very extensive metropolitan territory with dispersed outer municipalities
Genoa	Medium-large population concentrated along a constrained urban corridor	Rail and public transport network structured along the coastal corridor	High operational complexity due to topography, limited road space and port-city flows	Relevant urban and port-related demand with opportunities for fixed collection points	Potential to reduce repeated deliveries in spatially constrained neighbourhoods	Accessibility gaps associated with topography and dispersed hillside settlements
Bari	Large metropolitan population and significant commercial and service demand	Major railway hub and developed metropolitan public transport connections	Relevant congestion and delivery pressure in central and coastal urban areas	Growing OOH market and favourable conditions for network expansion	Potential integration with public transport and active mobility	Need to improve coverage across peripheral and surrounding municipalities
Palermo	Large metropolitan population and concentrated demand in the central urban area	Main rail, tram and bus nodes, with uneven metropolitan accessibility	Congestion, restricted-access areas and fragmented freight operations	Substantial potential demand but less mature network conditions than the largest northern cities	Potential benefits from consolidated deliveries in dense neighbourhoods	Significant accessibility and service disparities across the metropolitan territory

Metropolitan city	**Demand potential**	**Mobility and accessibility**	**Urban logistics pressure**	**Economic feasibility**	**Sustainability potential**	**Territorial equity**
Catania	Large population and relevant residential, university and commercial demand	Railway, bus and urban transport nodes serving the main city and surrounding municipalities	High congestion and fragmented metropolitan mobility patterns	Growing parcel demand and opportunities for expanding OOH delivery	Potential to combine locker collection with commuting and commercial trips	Uneven accessibility between the central city and peripheral municipalities
Bologna	Medium-large population combined with strong employment, university and commuter demand	Highly accessible national railway hub and developed public transport network	Relevant delivery and curbside pressure in the historic and central urban areas	Favourable market conditions and strong concentration of daily users	High potential for public-transport-based collection and trip chaining	Comparatively strong accessibility, although some outer areas remain less well served
Florence	Significant resident, commuter and tourism-related demand	Major railway nodes, tram services and dense public transport provision	Strong pressure on limited central road space and restricted-access areas	Favourable demand and suitable conditions for OOH collection	High potential for low-impact delivery solutions and integration with public transport	Moderate territorial disparities compared with larger and more dispersed metropolitan areas
Venice	Moderate resident population but substantial visitor, commuter and service demand	Rail, bus, tram and waterborne transport connections	Highly specific operational constraints arising from the lagoon context and tourism intensity	Specialised rather than mass-market investment opportunities	Strong potential for reducing fragmented deliveries in sensitive urban areas	Relevant accessibility challenges affecting islands and peripheral municipalities
Messina	Smaller and relatively dispersed metropolitan demand	Strategic rail, port and ferry connections but limited internal metropolitan integration	Operational challenges associated with port-city traffic and fragmented territorial structure	Moderate commercial potential requiring selective deployment	Potential for coordinating parcel collection with intermodal and ferry-related mobility	High relevance for dispersed settlements and areas with weaker service accessibility
Reggio Calabria	Smaller and dispersed metropolitan market	Main railway and port nodes but comparatively limited metropolitan public transport integration	Moderate logistics pressure with spatially fragmented delivery demand	Selective rather than extensive commercial potential	Potential environmental benefits in central and transport-oriented locations	Very high relevance for peripheral, dispersed and poorly connected municipalities
Cagliari	Smaller metropolitan population and comparatively low density	Main rail, bus and port nodes concentrated around the central urban area	Moderate congestion and delivery pressure	Selective market potential supported by the regional service role of the city	Potential for consolidating deliveries around major mobility and commercial nodes	Strong relevance for peripheral coverage, although the metropolitan area is less extensive than other equity-priority cases

Under the scoring assumptions adopted in the study, the model produces a differentiated comparative profile of the 14 metropolitan cities (Table 6). Milan, Rome and Naples receive the highest scores within the proposed framework because the proxy indicators attribute comparatively high values to demand potential, accessibility, logistics pressure and economic feasibility. Turin also performs strongly due to its metropolitan size and transport structure. Genoa, Bari, Palermo, Catania, Bologna and Florence form a second high-potential group, while Venice, Messina, Reggio Calabria and Cagliari show lower market potential but greater relevance for equity, peripheral coverage, insularity, tourism or port-city logistics.

Table 6. Scoring and investment-potential ranking

City	Dem.	Acc.	Log.	Eco.	Sust.	Eq.	IPS	Priority
Rome	5	5	5	5	4	4	28	Very high
Milan	5	5	5	5	5	3	28	Very high
Naples	5	5	5	5	4	4	28	Very high
Turin	4	5	5	4	4	4	26	Very high
Genoa	4	4	4	4	4	4	24	High
Bari	4	4	4	4	3	4	23	High
Palermo	4	4	4	4	3	4	23	High
Catania	4	4	4	4	3	4	23	High
Bologna	4	4	4	4	4	3	23	High
Florence	3	4	4	4	4	3	22	High
Venice	3	4	3	3	4	4	21	High
Messina	2	3	3	3	3	5	19	High
Reggio Calabria	2	3	3	3	3	5	19	High
Cagliari	2	3	3	3	3	4	18	Medium

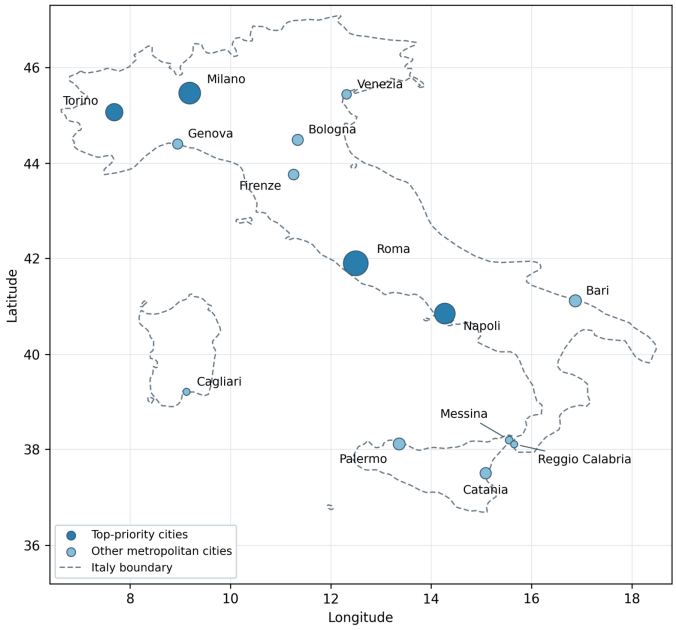


Fig. 2. Spatial distribution of the selected metropolitan cities. Bubble area is proportional to the estimated number of parcel lockers. Country outline data from Natural Earth.

In the hypothetical 4,000-locker metropolitan scenario, the adopted population-weighted formula assigns the largest shares to Rome, Milan, Naples and Turin. In the central unit investment scenario of EUR 12,000 per locker, total investment for the 14 metropolitan cities is approximately EUR 48 million. Under the central throughput assumption of 40 parcels per locker per day, the theoretical annual handling capacity of the metropolitan scenario is approximately 58.4 million parcels. These values are scenario-based outputs determined by the assumptions of the model and should not be interpreted as observed demand, guaranteed utilisation or operator-specific forecasts (Table 7 and Fig. 3).

Table 7. Scenario-based allocation of lockers, initial investment, annual management cost and theoretical handling capacity

City	**IPS**	**Scenario allocation**	**Initial investment (EUR m)**	**Annual management cost (EUR m)**	**Annual capacity (m parcels)**
Rome	28	872	10.46	1.57	12.73
Milan	28	671	8.05	1.21	9.80
Naples	28	610	7.32	1.10	8.91
Turin	26	423	5.08	0.76	6.18
Bari	23	207	2.48	0.37	3.02
Palermo	23	203	2.44	0.37	2.96
Catania	23	181	2.17	0.33	2.64
Bologna	23	174	2.09	0.31	2.54
Florence	22	160	1.92	0.29	2.34

City	IPS	Scenario allocation	Initial investment (EUR m)	Annual management cost (EUR m)	Annual capacity (m parcels)
Genoa	24	145	1.74	0.26	2.12
Venice	21	129	1.55	0.23	1.88
Messina	19	83	1.00	0.15	1.21
Reggio Calabria	19	71	0.85	0.13	1.04
Cagliari	18	71	0.85	0.13	1.04

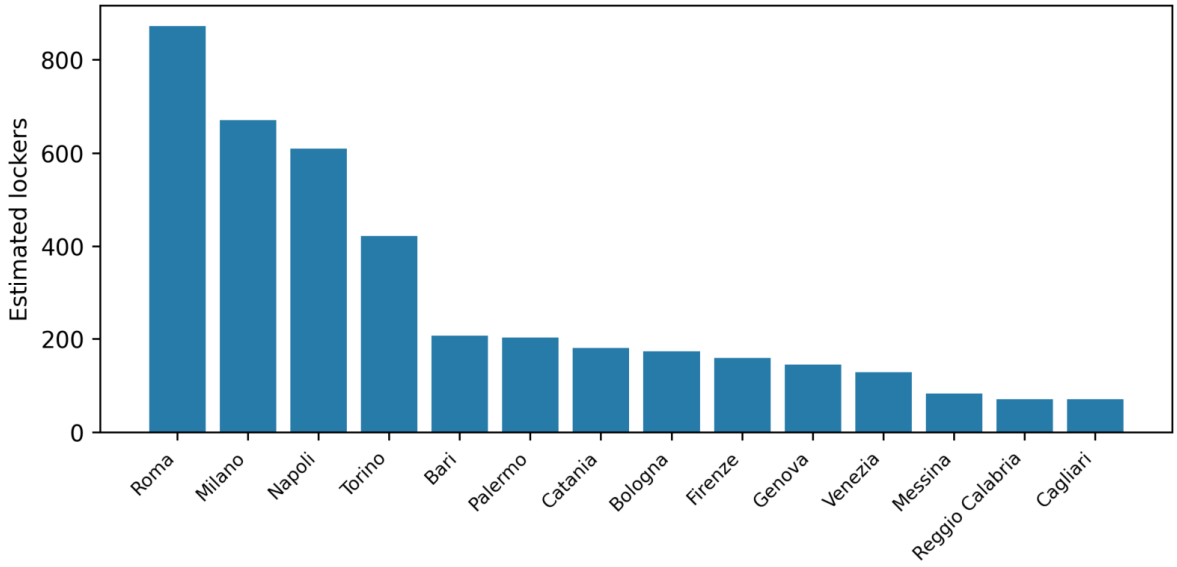


Fig. 3. Estimated number of parcel lockers per city

The sensitivity analysis is based on three unit-cost benchmarks derived from market-oriented infrastructure estimates for automated parcel locker deployment. In the metropolitan deployment scenario of 4,000 lockers, the low unit investment benchmark of EUR 8,000 per locker generates a total initial investment of EUR 32.0 million; the central benchmark of EUR 12,000 per locker generates EUR 48.0 million; and the high benchmark of EUR 20,000 per locker generates EUR 80.0 million. These values define the sensitivity range used to examine how alternative unit-cost assumptions affect the total initial expenditure of the hypothetical metropolitan scenario. The annual handling capacity is calculated by multiplying the number of lockers by the daily parcel-handling rate and by 365 operating days. With 4,000 lockers, a utilisation level of 25 parcels per locker per day corresponds to 36.5 million parcels per year. A medium utilisation level of 40 parcels per locker per day corresponds to 58.4 million parcels per year, while a high utilisation level of 60 parcels per locker per day corresponds to 87.6 million parcels per year. The comparison shows that the technical and economic performance of parcel locker investment depends not only on the unit installation cost, but also on utilisation intensity, location quality and locker turnover (Table 8).

The simple investment recovery period is calculated using the central investment scenario of EUR 48.0 million and an annual management and maintenance cost of EUR 7.20 million, corresponding to 15% of the initial investment. The calculation applies three operational utilisation levels, equal to 25, 40 and 60 parcels per locker per day, and a contribution margin range between EUR 0.30 and EUR 0.70 per handled parcel. These values provide a transparent technical benchmark for assessing the relationship between utilisation, operating margin and investment recovery.

Under the medium utilisation level of 40 parcels per locker per day, the simple investment recovery period ranges from approximately 4.7 years with a contribution margin of EUR 0.30 per parcel to approximately 1.4 years with a contribution margin of EUR 0.70 per parcel. At 25 parcels per locker per day, the recovery period increases substantially, particularly at lower contribution margins. At 60 parcels per locker per day, the recovery period decreases significantly, indicating stronger investment viability. The sensitivity analysis indicates that shorter simple payback periods depend strongly on assumed utilisation and contribution margins. These results illustrate the importance of location quality and turnover but do not demonstrate the financial viability of a specific network (Fig. 4).

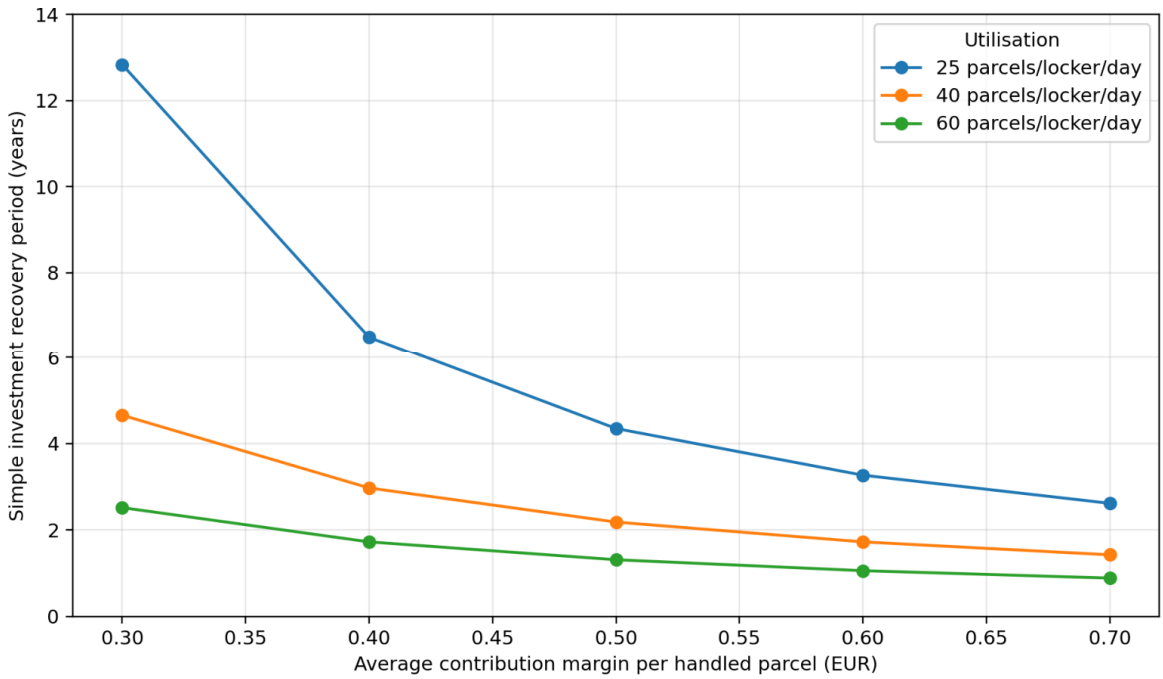


Fig. 4. Simple investment recovery period of the 4,000-locker metropolitan investment scenario under different utilisation levels and contribution-margin values

Table 8. Sensitivity scenarios for unit investment cost and parcel-handling capacity

Scenario	Unit investment cost (EUR)	Lockers	Total initial investment (EUR m)	Parcels/locker /day	Annual capacity (m parcels)
Low unit investment	8,000	4,000	32.0	40	58.4
Central unit investment	12,000	4,000	48.0	40	58.4
High unit investment	20,000	4,000	80.0	40	58.4
Low utilisation	12,000	4,000	48.0	25	36.5
High utilisation	12,000	4,000	48.0	60	87.6

At the intra-urban scale, the literature-informed priority matrix identifies location typologies that may generate combined value in terms of accessibility, turnover potential, delivery consolidation and public-policy relevance. Railway and metro stations, public transport interchanges and mobility hubs represent the strongest locations because they combine high pedestrian flows, daily mobility routines and trip-chaining opportunities. Retail areas, university and business districts, and dense residential neighbourhoods also show high potential because they concentrate users and allow parcel collection to be integrated into existing activities. Peripheral and low-density areas have lower market potential, but they retain strategic relevance for territorial equity, accessibility and service coverage (Table 9).

Table 9. Intra-urban investment priority matrix

Location typology	Expected role	Priority	Investment rationale
Railway and metro stations	Mobility-based collection nodes	Very high	High pedestrian flows and strong trip-chaining potential
Public transport interchanges and mobility hubs	Multimodal logistics-accessibility nodes	Very high	Integration between daily mobility and parcel collection
Retail areas and shopping streets	Commercial collection points	High	Parcel collection can be combined with shopping activities
University and business districts	High-frequency user areas	High	Concentration of students, workers and daily users
Dense residential neighbourhoods	Proximity-based delivery alternatives	High	Reduction of failed home deliveries and improvement of neighbourhood access
Peripheral and low-density areas	Equity-oriented service nodes	Medium	Improvement of territorial coverage and delivery inclusion

5. Discussion

The results confirm the main insight of the literature: parcel locker investment should not be based only on expected parcel volumes. The most promising locations are those where demand density, accessibility and operational consolidation overlap (Campisi & Di Ruocco, 2025; Deutsch & Golany, 2018; Seghezzi et al., 2022). This is particularly important from an environmental perspective: lockers can support sustainability when users collect parcels during existing trips, especially by walking, cycling or public transport. If lockers generate additional car trips, the environmental benefit may be reduced (Gutenschwager et al., 2024; Klein & Popp, 2022).

The numerical estimate suggests that a metropolitan-priority deployment of about 4,000 lockers would represent a significant but plausible infrastructure investment. A central initial investment of around EUR 48 million is modest when compared with heavy transport infrastructure, but the investment is spatially sensitive: poor location choices may produce low turnover, weak adoption and limited environmental gains. By contrast, well-located lockers in stations, retail areas, university districts and dense neighbourhoods can increase turnover, reduce failed deliveries and support OOH delivery habits.

Within the assumptions of the population-weighted scenario, Rome, Milan, Naples and Turin receive the highest commercial investment-priority scores. These areas offer the strongest combination of market size, density, accessibility and logistics pressure. However, the framework also shows that medium-potential metropolitan cities should not be excluded. In Venice, Cagliari, Messina and Reggio Calabria, PLs and PUDO points may serve specific policy goals linked to tourism, insularity, port-city logistics, peripheral accessibility or service coverage.

The results also reveal a distinction between commercial attractiveness and public value. Large and dense metropolitan cities are more likely to support commercially viable networks, whereas peripheral, insular or lower-density territories may justify deployment primarily through accessibility, inclusion and service-coverage objectives. In the latter cases, public support, shared infrastructure or public-private partnerships may be required.

The findings also highlight the importance of governance and provide direct answers to the research questions. With reference to RQ1, parcel locker investments can improve the efficiency and sustainability of urban last-mile delivery systems when they reduce fragmented home deliveries, increase delivery consolidation and support parcel collection during existing daily trips. The results show that this effect is strongest in metropolitan areas with high demand density and strong accessibility, and especially in intra-urban locations such as railway and metro stations, transport interchanges, retail areas and dense residential neighbourhoods.

With reference to RQ2, the paper shows that parcel locker location and prioritisation should be guided by a combination of spatial, logistics and socio-economic indicators. Population and density capture demand potential; public transport nodes, walking accessibility and trip-chaining opportunities capture accessibility; congestion, curbside

pressure and failed delivery risks capture logistics pressure; while annual handling capacity, initial investment cost, annual management and maintenance cost and investment recovery period capture the techno-economic dimension. Territorial equity should also be included, because peripheral and low-density areas may have weaker market attractiveness but relevant public value in terms of accessibility and service coverage.

With reference to RQ3, parcel lockers can be considered urban logistics infrastructure when their deployment affects public space, mobility behaviour, curbside management, neighbourhood services and territorial accessibility. In this perspective, they cannot be treated only as private delivery assets. Public authorities can support better outcomes by defining location criteria, integrating parcel lockers into PUMS/SUMP and Sustainable Urban Logistics Plans, encouraging placement near public transport nodes and ensuring that peripheral areas are not excluded from out-of-home delivery innovation (European Commission, n.d.-a; European Commission, n.d.-b; Knapskog et al., 2025).

These findings are consistent with previous studies showing that locker performance depends on demand density, accessibility, network design and utilisation (Deutsch & Golany, 2018; Kahr, 2022; Keeling et al., 2021; Schaefer & Figliozzi, 2021; Seghezzi et al., 2022). They also support research demonstrating that environmental benefits are conditional on delivery consolidation and collection during existing trips (Gutenschwager et al., 2024; Klein & Popp, 2022). The present study extends this literature by incorporating territorial equity and metropolitan planning into an exploratory investment-priority framework.

The proposed framework has several limitations. First, it relies on public proxy indicators rather than observed parcel flows, utilisation rates or operator costs. Second, the ordinal scores include an interpretative component and do not provide direct cardinal measurements of demand, profitability or environmental performance. Third, the population-weighted allocation may favour larger metropolitan areas because demographic size is represented both directly and within the demand dimension. Fourth, the financial module uses sensitivity assumptions and excludes discounting, utilisation ramp-up, taxation, financing costs, land or concession charges and asset replacement. Finally, the intra-urban matrix is literature-based and has not been validated through GIS analysis or stakeholder consultation. The results should therefore be interpreted as exploratory planning scenarios. Future research should test alternative weighting and allocation specifications and validate the framework using geolocated parcel demand, existing locker locations, pedestrian catchments, operator data, emissions estimates and user surveys.

6. Conclusions

This paper analysed parcel locker investment as a sustainable urban logistics issue at the scale of Italian metropolitan cities. The study proposed a planning-oriented framework that combines demand potential, mobility and accessibility, logistics pressure, economic feasibility, sustainability potential and territorial equity. It also introduced an exploratory economic module to estimate locker allocation, initial investment cost and annual handling capacity.

The results show how Italian metropolitan cities can be compared through an exploratory planning framework for parcel locker deployment. Under the assumptions of the proposed scoring and allocation model, Rome, Milan, Naples and Turin receive the highest investment-priority scores while Bari, Palermo, Catania, Bologna, Florence and Genoa show high investment potential. Other metropolitan cities may have more specific but still relevant opportunities connected to tourism, port-city logistics, insularity or equity-oriented service coverage.

At the intra-urban scale, railway and metro stations, public transport interchanges, retail areas, university districts and dense residential neighbourhoods are the most promising locations. These places allow users to collect parcels during existing daily trips and can reduce inefficient home deliveries. The study therefore proposes that parcel lockers be considered potential components of small-scale urban logistics infrastructure. However, their economic, environmental and social benefits remain conditional on demand, utilisation, accessibility, collection behaviour, governance arrangements and location quality.

Author Contributions

Irina Di Ruocco: Conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing – original draft, and writing – review and editing.

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Data Availability Statement

The paper uses publicly available data and documentary sources, including ISTAT demographic and territorial data, European Commission policy documents, and public information released by DHL Group, Poste Italiane and InPost. No proprietary parcel-flow data were used.

Conflicts of Interest

The author declares no conflict of interest.

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ANALYZING SOME SUCCESSFUL AI MODELS FOR STOCK INVESTMENT TODAY

Abstract: In recent years, along with the development of the 4.0 Technology Revolution, Artificial Intelligence (AI) has been a strong trend all around the world. By leveraging the power of science into economy and society, developing countries have achieved many very positive results. AI is now applying in certain areas of Vietnam but not yet become a popular trend, although we are all aware of its great importance and benefits. This paper presents important concepts about AI, the development of AI in the world as well as in Vietnam, and important applications of AI that are being effectively implemented, thereby evaluating and analyzing some AI models which have been successfully applied to the field of securities investment.

Keywords: artificial intelligence (AI), AI applications, AIEQ, AI Vietnam, securities robots

ANALIZA NIEKTÓRYCH SKUTECZNYCH MODELI SZTUCZNEJ INTELIGENCJI WYKORZYSTYWANYCH OBECNIE DO INWESTOWANIA W AKCJE

Streszczenie (abstract): W ostatnich latach, wraz z rozwojem rewolucji technologicznej 4.0, sztuczna inteligencja (AI) stała się silnym trendem na całym świecie. Wykorzystując siłę nauki w gospodarce i społeczeństwie, kraje rozwijające się osiągnęły wiele bardzo pozytywnych rezultatów. Sztuczna inteligencja jest obecnie stosowana w niektórych obszarach Wietnamu, ale nie stała się jeszcze powszechnym trendem, mimo że wszyscy jesteśmy świadomi jej ogromnego znaczenia i korzyści. Niniejszy artykuł przedstawia ważne pojęcia dotyczące sztucznej inteligencji, rozwój sztucznej inteligencji na świecie, a także w Wietnamie, oraz ważne zastosowania sztucznej inteligencji, które są skutecznie wdrażane. W związku z tym dokonano oceny i analizy niektórych modeli sztucznej inteligencji, które z powodzeniem zostały zastosowane w dziedzinie inwestowania w papiery wartościowe.

Słowa kluczowe: sztuczna inteligencja (AI), zastosowania sztucznej inteligencji, AIEQ, AI w Wietnamie, roboty inwestycyjne

1. Introduction on AI

1.1 Definition of AI

The term AI – artificial intelligence, was first adopted in the world by the American computer scientist John McCarthy in 1956. McCarthy, Minsky, Nathaniel Rochester and

Claude E. Shannon coined the term *artificial intelligence* in a proposal writing for the famous Dartmouth conference. For the first time, AI was considered as an academic field.

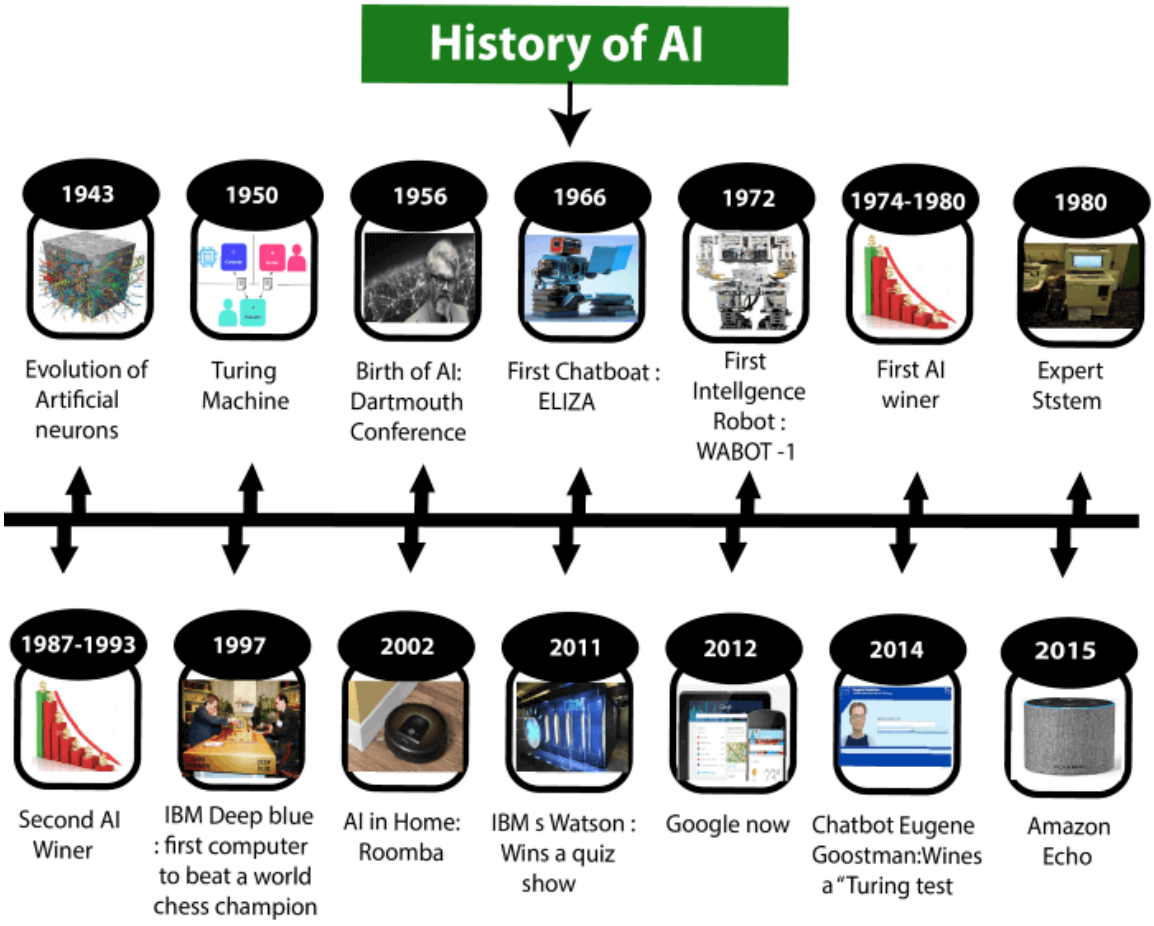


Figure 1. History of AI

Source: Java (2022)

AI technology was then developed in the 1960s and has been popular recently due to its important applications in the digital transformation of developed countries which based on Internet of Things (IoT), Big Data, and open platforms. Some major achievements and corner-stones of AI can be related:

- The first intelligent humanoid robot, named WABOT-1, was built in Japan in 1972
- In 1980, A boom of AI came with the Expert System which were programmed that emulate the decision-making ability of a human expert. At the same time, Stanford University held the first national conference of the American Association of Artificial Intelligence.
- The emergence of intelligent agents began in 1997 when IBM Deep Blue beat world chess champion, Gary Kasparov. It was the first time that one computer could defeat a world chess champion.
- In 2002, AI entered the home in the form of Roomba, a vacuum cleaner.

- Since 2006, famous technology companies like Facebook, Twitter, and Netflix have started using AI.
- In the year 2011, IBM's Watson won jeopardy, a quiz show, where it had to solve the complex questions as well as riddles. This AI of IPM could quickly understand natural language and deal with tricky questions.
- In 2012, Google has launched an Android app feature "Google now" providing information to the user as a prediction.
- In 2018, the "Project Debater" of IBM debated on complex topics with two master debaters and also performed extremely well. Google also demonstrated its AI program "Duplex" which was a virtual assistant and which had taken hairdresser appointment on call.
- ChatGPT was first introduced in 2022, bringing an AI chatbot to the world. It was developed by OpenAI and released in November 2022. It is now the most famous AI tool in the world that attract millions of users.

There have been many different definitions of AI. Nilsson (1998) suggested that AI studied intelligent behaviors simulated in artificial objects. According to Ferber (1999), AI was a blend of three advanced technologies: machine learning, natural language processing and cognitive computing; the concept of AI was to emulate human intelligence into artificial machines with the help of sophisticated machine learning and natural language processing algorithms; its main engine for the idea of transferring intelligence from humans to machines is the scalability, which was beyond the boundaries of human intelligence. Charniak et al., (2014) gave the definition: AI was the science that studied brain activities through computational models. Stuart Russell and Peter Norvig (2016) defined AI "as the designing and building of intelligent agents that receive percepts from the environment and take actions that affect that environment".

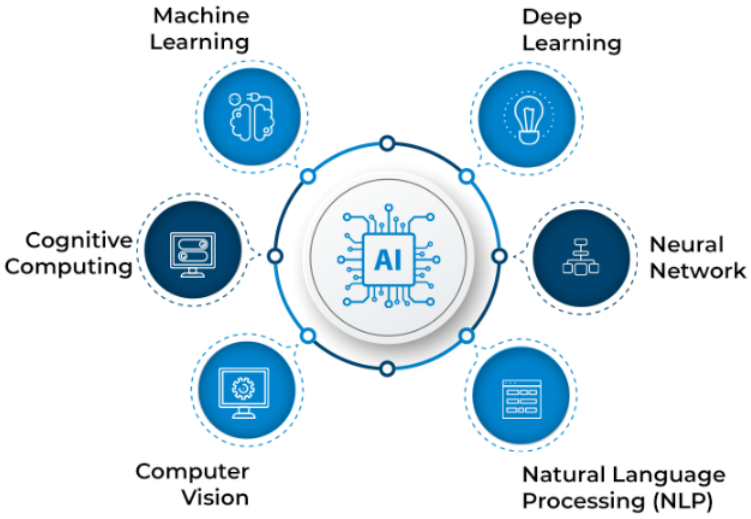


Figure 2. Key components of AI

Source: Vijay Kanade (2022)

Recently Vijay Kanade (2022) has defined AI as as the intelligence of a machine or computer that enables it to imitate or mimic human capabilities. To begin with, an AI system accepts data input in the form of speech, text, image, etc. The system then processes data by applying various rules and algorithms, interpreting, predicting, and acting on the input data. Upon processing, the system provides an outcome, i.e., success or failure, on data input. The result is then assessed through analysis, discovery, and feedback. Lastly, the system uses its assessments to adjust input data, rules and algorithms, and target outcomes.

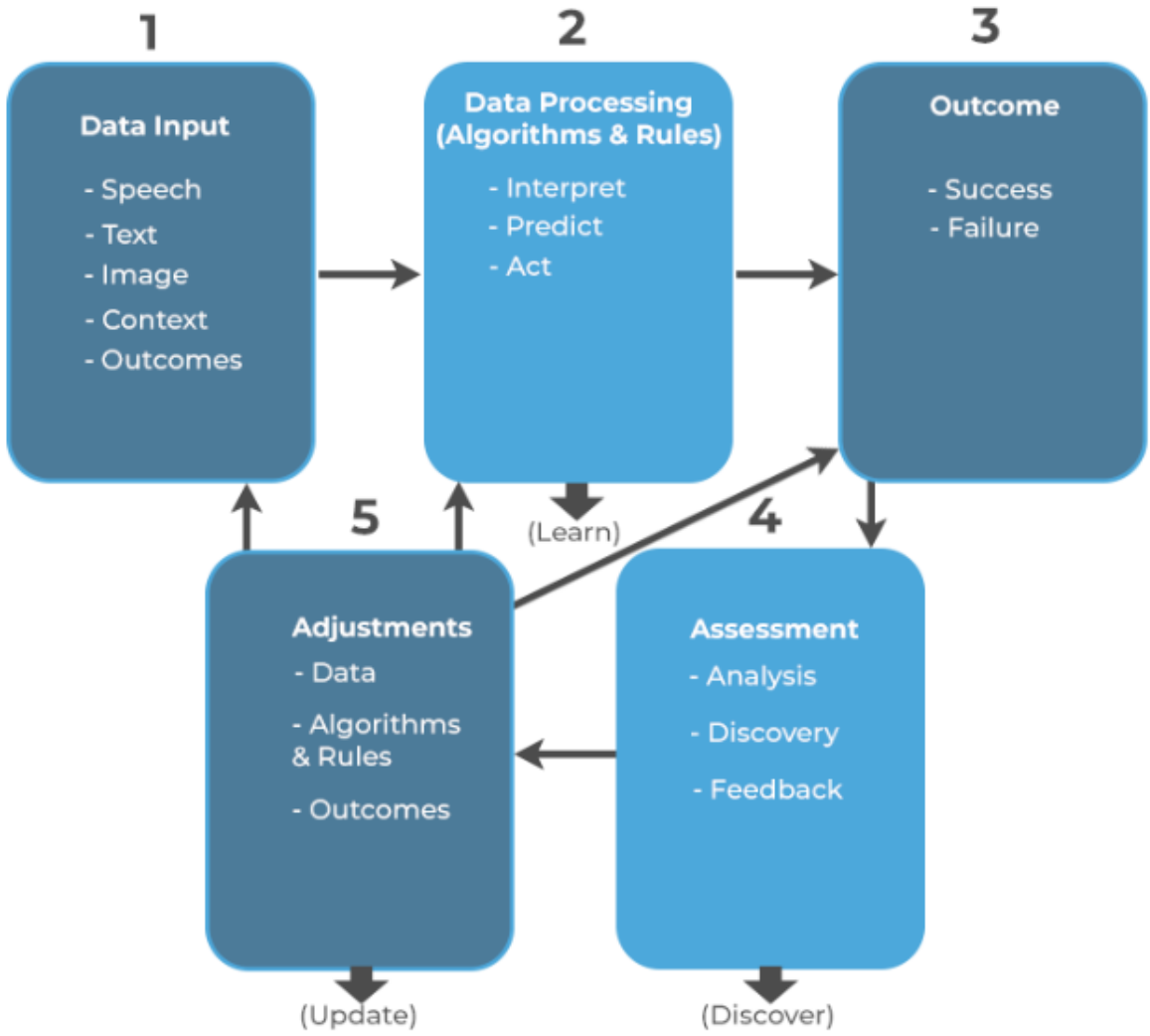


Figure 3. How AI works

Source: Vijay Kanade (2022)

In general, AI is the intelligence of machines created by humans; it is a technology that simulates thought and learning processes of human for machines, especially computer systems; these processes include learning, reasoning, and self-regulation.

(1) Learning: focuses on collecting data and creating rules on how to turn data into actionable information. The algorithms provide computer devices with step-by-step instructions on how to complete a particular task.

(2) Reasoning: focuses on choosing the right algorithm to get the desired result.

(3) Self-regulation: this aspect of AI programming is designed to constantly refine algorithms and ensure how they provide the most accurate results.

In particular, it can be understood that AI is a computer science that creates intelligent machines that react like humans. AI bases on solid theoretical foundations such as knowing how to think, reasoning to solve problems, communicating through languages and speech ... AI intelligence can think, consider and learn like humans, but its scale of data processing is much broader, more systematic and scientific, faster than that of humans.

In complexity, we can classify AI technology into the following 4 categories:

(1) Reactive AI technology

(2) AI technology with limited memory.

(3) Theory of AI

(4) Self-awareness

Combined with Big Data, AI has been growing rapidly and gaining global fame in many fields due to its ability to process huge chunks of data extremely fast. Big Data is a term used to refer to a set of data so large and complex that traditional storage, applications, and data processing tools cannot handle them. Based on the results of mathematical processes, robots and computers are capable of making decisions on their own.

1.2 Popular application fields of AI

Today investments in AI has increased higher and higher. In the US, the amount of those investment has tripled in 2013-2014. In estimation of PriceWaterhouseCoopers (2018), AI technology could help increase global GDP by 15.7 billion USD, which will be equal to 14% in 2030. The strongest AI investment countries are China, North America, Northern Europe, Africa, Asia... Among them, China is on top, spending around $7 billion every year on AI, twice as much as North America. Beijing authorities set a national goal of investing $150 billion in AI in 2030.

AI has recently achieved many important successes in many fields such as accounting, management, healthcare, even poetry and music. The Accenture's survey report (2017) on 600 leading and specialized banks in the world said that AI would become the main way for banks to interact with customers in the next 3 years. According to this report, 80% of banks believed that AI would “revolutionize” the way which banks collected their customer information.

Here are some typical areas of AI application that have played important roles in ther business world today:

- *IT security:* AI can analyze millions of files and determine which contain malware. AI can also look for end-user patterns by the ways they access the cloud computing to recognize anomalies and anticipate security threats.
- *Financial transactions:* Based on historical trends, AI can predict when to buy and sell securities, allowing investors to lock in their estimated buying and selling prices.
- *Healthcare:* Machine learning algorithms can process more information and detect more patterns to understand pathogens and disease risk in large populations.
- *Insurance:* Businesses can predict customer needs by identifying life events and predicting how those events will impact insurance demands.
- *Marketing:* AI has been well developed and will continue to broaden in marketing fields. Companies can deliver personalized online ads, emails, direct mail and coupons, which base on end-user Internet activities.
- *Personal assistant:* Personal assistants of Google, Amazon, and Apple have been popular in homes. Chat interfaces will also become increasingly common by interacting with technologies in business environments as voice-enabled activities are added to the on-screen dashboard.
- *Customer service:* Machine learning algorithms with natural language processing can replace customer service staff and managers, authenticating customers by their voices and quickly directing them to right information they need or some support people.
- *Legal:* Natural language processing systems can translate legal documents into more client-friendly languages and help attorneys to sort information for trials.
- *Manufacture:* Wi-Fi and network devices can collect data from supply chains and product designs, development process, production, distribution, and product experiences in order to build database for improvig working efficiency.

2. Some typical AI models for stock investment

A research report by Greenwich Associates (2019) showed that 61% of professionals in the capital market have already used AI or plan to use it in the next 1-2 years. According to the report of Forbes Insights (2022), as cited in Giang (2019), 37% of companies around the world were using AI, but 47% agreed that those not investing in AI would be at risk of being outperformed by their competitors. With the emergence of a series of AI products in stock investment, customers now have more options to make accurate decisions whether to buy or sell.

2.1 Advantages of AI in stock investment

Big Data and AI are gradually changing the operations of many stock markets around the world. The investment process no longer begins with a series of days of diving into financial reports, going to visit companies, but instead to use huge online database to quickly reach the core investment goal.

Stocks are games of numbers. A good AI application software can process a huge amount of information and thereby generate reports in a short time, helping investors have an overall view of stock price movements and financial health of the business which they are looking to invest in, With AI, it is possible for investors to make investment decisions accurately.

AI is an accurate and fast data filtering tool. Mr. Bui Viet Dung (2019), the Chief Technology Officer VPS Securities Joint Stock Company, said: "Artificial intelligence can help humans scan millions of data to filter out securities-related data in seconds. We can easily see that with the ability to collect and analyze such huge amounts of data, AI applications will help investors make more accurate trades, reduce risks and increase profits" (Giang, 2019).

According to Mr. Nguyen Dang Truong (2021), General Director of Wall Street Securities Joint Stock Company: "The application of AI in securities investment makes the market more transparent and sustainable. AI statistics and analysis based on the provided data can help investors change portfolios, business strategies and products, even offer completely new solutions for businesses to innovate and operate the businesses" (Giang, 2019).

The next advantage of applying AI technology in stock investment is to check investors' emotions. Objectively assessed, machines have not been able to completely replace humans so far. However, technologies make the investor's decision-making process less emotionally. In reality, whenever the stock market fluctuates sharply, many individual investors find it difficult to refrain from buying or selling stocks. This is where AI plays an important role, helping investors control emotions, thereby minimizing risks in trading.

2.2 Disadvantages of AI in stock investment

Despite its advantages, AI technology still has important limitations in stock investment. One major concern is the robustness of AI and machine-learning models under unusual or rapidly changing market conditions. Because these models generally learn patterns from historical data, their performance may deteriorate when market relationships change significantly or when new market conditions differ substantially from those represented in the training data. The Financial Stability Board (FSB, 2017) points out that the lack of interpretability and auditability of AI and machine-learning models, together with inadequate testing, may result in unintended consequences and potential risks to financial stability. Furthermore, evidence from quantitative investment strategies shows that models which perform effectively under normal market conditions can experience substantial losses during periods of market-wide deleveraging and sudden withdrawals of liquidity (Khandani & Lo, 2011).

These limitations are particularly relevant to markets characterized by high volatility, lower liquidity, and limited trading activity. Research on the Vietnamese stock market indicates that forecasting financial time series and market liquidity is challenging because the market is highly volatile and dynamic (Khang et al., 2020). Another study also points out that the Vietnamese stock market is characterized by a relatively limited number of

transactions and comparatively small transaction sizes, which creates additional challenges for machine-learning-based liquidity prediction (Khang et al., 2021). Therefore, AI-based investment systems should not be regarded as universally accurate. Their effectiveness depends greatly on the quality of input data, model design, market conditions, and continuous model validation. Poorly specified or insufficiently tested AI models may consequently generate misleading investment signals and expose investors to additional risks (FSB, 2017).

2.3 AI application models in securities investment

2.3.1 AIEQ of Equbot

The AI Powered Equity ETF (AIEQ) is an important example of the application of artificial intelligence to stock investment. The idea behind EquBot originated from the collaboration between Chida Khatua and Art Amador, who met while studying at the Haas School of Business, University of California, Berkeley. The idea of applying artificial intelligence to stock investment emerged during their studies in 2014. Khatua had extensive experience in artificial intelligence and machine learning and had worked at Intel for approximately 18 years, mainly focusing on machine-learning technology. Amador, meanwhile, had extensive experience in personal wealth management at Fidelity Investments, where he provided financial advice to wealthy families. Their complementary expertise in technology and investment management contributed to the development of EquBot and its AI-based investment approach (Tuyen, 2017).

The founders aimed to develop one of the world's first AI-powered approaches to stock investment. Khatua and Amador were later joined by Christopher Natividad, who had experience in capital management. According to Baldwin (2019), the three founders contributed their own savings and raised approximately USD 735,000 from angel investors to establish EquBot, while IBM provided approximately USD 120,000 in software and hardware credits. These resources allowed EquBot to develop an investment system capable of combining large-scale data processing, machine learning, and financial analysis.

The resulting AI-based investment product was the AI Powered Equity ETF (AIEQ), which commenced operations in October 2017. AIEQ is an actively managed exchange-traded fund that primarily invests in equities listed on U.S. exchanges. Its investment strategy is based on a proprietary quantitative model developed by EquBot and operated on the IBM Watson platform. According to the original prospectus, EquBot uses IBM Watson AI to conduct objective fundamental analysis of U.S.-listed common stocks and real estate investment trusts (REITs), using up to ten years of historical data together with recent economic and news information (ETF Managers Trust, 2017).

One of the main purposes of the EquBot Model is to process a volume of information that would be extremely difficult for individual investors or traditional analyst teams to analyze manually. In its initial investment strategy, the model identified approximately 30 to 70 companies with the greatest potential for appreciation and determined their corresponding portfolio weights. Vietnamese reporting on the launch of the fund also

indicated that its AI system continuously analyzed information relating to approximately 6,000 U.S.-listed companies (Tuyen, 2017). The official prospectus further explains that the model ranks companies according to their probability of benefiting from current economic conditions, market trends, and world events, while also considering the potential appreciation of each company and its correlation with other companies in the portfolio (ETF Managers Trust, 2017). In June 2018, the investment range was subsequently expanded from approximately 30-70 companies to approximately 30-125 companies (ETF Managers Trust, 2018b).

AIEQ's technological capability is closely associated with the IBM Watson platform. Watson is capable of processing both structured data, such as financial databases and spreadsheets, and unstructured data, such as news articles, reports, and other textual information. Through machine learning and pattern recognition, the system can identify relationships among large quantities of information and continuously refine its analyses (ETF Managers Trust, 2017). This capability enables AI-supported investment systems to evaluate a much larger information set than would normally be possible through conventional manual analysis.

The scale of EquBot's data-processing system has also been described in greater detail in financial media. According to Baldwin (2019), the system was capable of processing approximately 1.3 million texts per day, including news, blogs, social media content, and SEC filings. IBM Watson processed the language contained in these sources and extracted information to construct a knowledge graph consisting of approximately one million nodes. Individual nodes could represent companies, keywords, or economic factors, creating a very large number of potential relationships among different pieces of information. The system then used neural-network techniques to evaluate which relationships were most relevant to subsequent movements in stock prices. During periods of intensive processing, EquBot was reported to perform up to half a quadrillion calculations per day, supported by Nvidia graphics-processing technology and cloud-computing infrastructure (Baldwin, 2019).

This process can be understood through the general principle of pattern recognition in stock analysis. For example, technical analysts often examine chart patterns such as ascending, descending, or symmetrical triangles in an attempt to identify potential changes in stock-price trends. Although such technical patterns are only a simple illustration and are not specifically identified as rules used by AIEQ in its official prospectus, they demonstrate an important advantage of machine-learning systems: computers can simultaneously examine extremely large numbers of observations and detect statistical patterns much faster than individual investors. In practice, the EquBot Model operates on a substantially broader set of information, including company fundamentals, economic conditions, news, and other market-related data.

EquBot's AI approach was developed to function as an intelligent investment-analysis system. In addition to company and securities information, media reports indicate that the model analyzes quarterly disclosures, news articles, social-media information, management information, and market sentiment. It was also designed to identify

potentially erroneous inputs, including misleading or false information (Tuyen, 2017). These capabilities can assist investors by explaining why particular companies may be attractive candidates for inclusion in an investment portfolio.

However, AIEQ should not be interpreted as a completely autonomous investor that entirely replaces human decision-making. The official fund documentation states that the investment adviser uses recommendations generated by the EquBot Model when deciding which securities to purchase or sell. Therefore, although artificial intelligence plays a central role in information processing, company ranking, and portfolio recommendations, professional investment management remains part of the final decision-making process (ETF Managers Trust, 2017). This combination of machine intelligence and human oversight is an important characteristic of the AIEQ investment model.

Some investment selections made by EquBot have attracted considerable attention. One widely reported example involved Amarin Corporation, an Irish pharmaceutical company associated with an omega-3 prescription product. Baldwin (2019) reported that EquBot's international ETF acquired the stock when its price was below USD 3, before a regulatory development contributed to the price subsequently rising to approximately USD 15. This example illustrates the potential ability of an AI-based system to detect relationships among corporate information, market developments, and investment opportunities before such relationships become obvious to the broader market. Nevertheless, EquBot's system has also made unsuccessful selections, demonstrating that machine-learning systems remain exposed to investment risk and prediction errors (Baldwin, 2019).

Official performance data provide a more systematic basis for assessing AIEQ than individual successful stock selections. According to the fund's prospectus, AIEQ recorded an annual return of -7.29% in 2018, followed by 31.14% in 2019 and 25.42% in 2020. From its inception in October 2017 through the end of 2020, its average annual return before taxes was 15.35%, compared with 14.91% for the S&P 500 Index over the same period (ETF Managers Trust, 2021). These results demonstrate that an AI-supported investment strategy can produce competitive returns, although performance varies considerably over time and past performance does not guarantee future investment results.

The cost of operating AI-based investment funds should also be considered. According to AIEQ's 2019 Summary Prospectus, its total annual fund operating expenses were 0.77%, including a management fee of 0.75% and acquired fund fees and expenses of 0.02% (ETF Managers Trust, 2019). EquBot subsequently extended its AI-based approach to international markets through the AI Powered International Equity ETF (AIIQ). The original AIIQ prospectus reported annual fund operating expenses of 0.79% (ETF Series Solutions, 2018a). AIIQ commenced operations in June 2018 and applied the EquBot Model and IBM Watson platform primarily to companies in developed markets outside the United States.

Overall, AIEQ and AIIQ demonstrate how artificial intelligence can be incorporated into professional investment management. By combining machine learning, natural-language processing, large-scale data analysis, and portfolio optimization, EquBot's models

can process information far beyond the practical capacity of individual investors. At the same time, their operation and historical performance demonstrate that AI should be considered a powerful decision-support technology rather than a perfect substitute for professional judgment. The effectiveness of such systems ultimately depends on data quality, model design, market conditions, and appropriate human oversight.

2.3.2 Stock trading Robots

Although the term 'robot stock investment' is new to most of Vietnam investors in stock market, it has appeared since the 1970s in the world. Today, using robots to invest is a inevitable global trend. According to Eurekahedge (2019), Asian quantitative investment funds using this algorithm have generated higher returns than the whole industry during the past 4 years. In Vietnam, due to the positive impact made by the trend of the Fourth Industry Revolution and the appearance of derivative securities, our stock market has become more aggressive and get interested in this investment method in recent years.

Stock Investment by robots (Algo trading) is the process of using computer programs that follow a defined set of rules for placing orders. These algorithm rules are based on time, price, volume, or any mathematical model. In particulary, the algorithm is programmed on price and volume data (technical analysis) to determine the point to buy and sell ordinary stocks or derivatives.

Programmed by using complex algorithms on a large enough database, the robots are tested for past investment performance (Backtest) before being officially put on the trading system. Because the investment performance has been tested, when trading completely according to the robot system, investors can get a certain rate of return based the robot's performance.

Advantages of using stock robots

Time saving. Using robots helps investors not spend much time looking for opportunities. Buying and selling recommendations based on real data from the market are made in time for investors, so the trading process will be constant without delay. The investor's only job is to enter orders according to the notification from the robot system. The robot helps to place trading orders instantly and accurately, eliminating the risk of making errors and slow speeds

Eliminating human emotions. Most of the buying and selling have been affected by human emotions. Therefore there have been times when investors made wrong decisions due to unstable emotions. Like AI, a great advantage is that the robotic system eliminates human emotional and psychological factors in the trading process. This factor will be completely eliminated when trading with robots because buying and selling decisions are fully automated 24/7. Backtesting algorithms based on historical and real-time data help eliminate emotional in the trading

Disadvantages of using stock robots

Stock robots can save time and maintain a 'cool head' for people in investing, but they cannot completely replace human decisions because there are certain limitations.

Not suitable with fundamental analysis. Trading by robots is not based on the intrinsic value of the business. Stock trading robots are built on the price and liquidity, without considering financial factors of the enterprises. Therefore, there are risks that investors may receive notifications of buying bad stocks, or 'iced tea' stock.

Not exact in the sideway periods. Trading robots only prove effective when the stock has a clear trend. At sideway periods, robots often give continuous buy and sell signals, causing investors to quickly change positions, so that their decisions will be not exactly.

Difficult to be accurate in T+n mechanism. With the current T+2.5 in Vietnam stock market, if using robots, investors will face the risk that they make profits when buying, but as soon as the stocks arrive at their accounts, they will suffer losses. Clearly robots only works in the T+0 mechanism (allowing investors to buy and sell in the same the day).

Hard for humans to intervene. Investors cannot intervene robot trading systems to regultae their own stocks, but entirely depend on the original algorithms of the programmers

Causing misalignment of supply and demand. Robots are programmed to interact and recommend for every investor to use their system. When one investor receives a notice to buy or sell, other investors also receive the same signal at the same time, so that it is easy to buy and sell a large amount of stocks at that time. Especially in small-scale emerging stock markets like Vietnam, many identical trading orders at the same time can cause undesirable consequences, causing supply and demand transactions to be skewed, not reflecting the market state for stocks.

Applications of Robot in Vietnam stock market

Until now, in Vietnam stock market there have been some securities companies investing funds into building robot trading systems in order to support their customers. In 2015, Techcombank Securities was the first company in Vietnam to develop consulting robot for customers. This robot described cash flow in detail and offered investment allocation plans (savings, bond, stocks, fund certificates...) for each individual, based on input data about each person's income and needs.

The leading organization in the application of robots for investment consulting is BIDV Securities Company (BSC) with its IBroker system. This is an advisory tool that can interact with investors in the form of online chat. Investors just type the stock code, the IBroker system will provide information about the business, as well as buying and selling recommendations. Unlike the popular method of placing orders based on stock codes, BSC i-Invest manage and invest in portfolios. Based on each customer' needs, characteristics and risk appetite, the system immediately offers an investment portfolio with best profit expectation.

BSC has recently officially launched the iBroker derivatives robot, specializing in advising investors on trading derivatives. Only by chatting with iBroker, investors can directly refer to the trading schedule, newsletters from the Hose and HNX, and information about VN30 and VN30F1M. This new iBroker robot also provides Alpha strategy which use the results of studying the effects of changing the movement of futures contracts, thereby supporting investors to make trading decisions in the right ways.

The IRA product of Tan Viet Securities Joint Stock Company (TVSI) is also an investment robot that relies on trading signals of technical analysis. In an investor's follow or hold portfolio, IRA will make a buy or sell recommendation as soon as the stock signals instant trading. Investors who want to make swing trading to earn short-term profits can use IRA. This robot will recommend buy and sell points for investors as soon as the stock code signals trading.

Stocktrader Robot version 4.0 of StockTraders company is also a prominent product in the stock market today. The system works on the basis of market waves to help investors to trade at times of high probabilities of winning. It uses an algorithm that no other systems in the market can do, the wavefoot signal will be alerted real-time via phone to make timely trading decisions before important moments. Stocktraders has discovered the algorithm for determining the foot of the market waves quite accurately since 2013. In December 2019, when VNindex reversed at 1,028 points to fall sharply to 950, StockTradres made a warning signal about the market's ability to create waves by the algorithm of waiting to buy from the system.

In addition to securities companies, many other businesses in the market such as Stocktrader, Finbox, Harmonic parttern, Finshark ... also have their own robotic systems that aim to rent, or sell directly to customers for profit. The robot products marketed are mainly softwares or a part of source code containing buying and selling algorithm. To be able to own such a trading system, investors have to spend an amount from some million VND to several tens of millions of VND depending on the effectiveness of the robot.

3. Conclusion

AI is the leading technology in today's economic world. Applying AI to areas of life and business is an inevitable trend that the world has been and will be moving towards. The advantages and utilities of AI in business, finance in general, and stock investment in particular, have been clearly proven.

Of course, one truth can be affirmed, which is that no matter how powerful and superior AI is, in the world of stock investment with constantly fluctuating day by day, AI cannot completely replace humans. Especially in small-scale stock markets, but during the past 3 years have always been considered to be the highest growth in the world such as Vietnam, the "herd mentality" factor always strongly affects investment decisions, supply and demand.

Hopefully in the future, applications such as Securities Robot, AIEQ… will appear more and more in Vietnam, giving investors new options in profiting and ensuring the safety of their capital.

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AUDITORY CUES AND SUSTAINABLE CONSUMPTION: A SCOPING REVIEW

Abstract: Environmental claims are studied and regulated as verbal and visual phenomena, yet sound is increasingly deployed to convey environmental meaning. This article reports a scoping review, following PRISMA-ScR, of how auditory cues influence consumer perceptions and responses to environmental sustainability. Searches of Scopus and Web of Science yielded 33 charted studies across three distinct research streams: brand, packaging and product cues (n=12); soundscape and visitor response (n=13); and market valuation of acoustic quality (n=8). The streams are methodologically and disciplinarily separate and cite one another sparsely. Evidence is strongest that auditory cues shift perceived environmental friendliness, and weakest on whether such shifts alter purchasing: only four studies measure behavior. No study examined whether auditory cues could constitute a misleading environmental claim, and none addressed the regulation of non-verbal claims. The field is emerging, with twelve studies published in 2025-2026, while the valuation stream has produced none since 2021.

Keywords: auditory cues, green marketing, scoping review, soundscape, sustainable consumption

WSKAZÓWKI SŁUCHOWE A ZRÓWNOWAŻONA KONSUMPCJA: PRZEGLĄD ZAKRESU LITERATURY

Streszczenie (abstrakt): Twierdzenia środowiskowe są badane i regulowane jako zjawiska werbalne i wizualne, jednak dźwięk jest coraz częściej wykorzystywany do przekazywania znaczeń związanych ze środowiskiem. Niniejszy artykuł przedstawia przegląd zakresu literatury, przeprowadzony zgodnie z wytycznymi PRISMA-ScR, dotyczący tego, w jaki sposób wskazówki słuchowe wpływają na postrzeganie przez konsumentów kwestii zrównoważonego rozwoju środowiskowego oraz ich reakcje na te kwestie. Przeszukanie baz Scopus i Web of Science pozwoliło zidentyfikować 33 opracowania poddane analizie w ramach trzech odrębnych nurtów badawczych: wskazówki dotyczące marki, opakowania i produktu (n = 12); pejzaż dźwiękowy i reakcje odwiedzających (n = 13); oraz wycena rynkowa jakości akustycznej (n = 8). Poszczególne nurty są od siebie metodologicznie i dyscyplinarnie odrębne oraz w niewielkim stopniu wzajemnie się cytują. Najsilniejsze dowody wskazują, że wskazówki słuchowe zmieniają postrzeganie przyjazności dla środowiska, natomiast najsłabsze dotyczą tego, czy takie zmiany wpływają na decyzje zakupowe: jedynie cztery badania mierzą zachowania konsumentów. Żadne badanie nie analizowało, czy wskazówki słuchowe mogą stanowić wprowadzające w błąd twierdzenie dotyczące środowiska, a żadne nie odnosiło się do regulacji twierdzeń niewerbalnych. Dziedzina ta znajduje się na etapie rozwoju – dwanaście badań opublikowano w latach 2025-2026, podczas gdy w nurcie dotyczącym wyceny nie opublikowano żadnych badań od 2021 roku.

Słowa kluczowe: wskazówki słuchowe, marketing ekologiczny, przegląd zakresu literatury, pejzaż dźwiękowy, zrównoważona konsumpcja

Introduction

Green marketing scholarship has developed a substantial account of how environmental claims are made, evaluated and doubted. Central to that account is the problem of credence attributes: environmental quality cannot be verified by inspection, so consumers infer it from available cues (Olson & Jacoby, 1972; Spence, 1973), and firms face a corresponding incentive to signal more virtue than they possess (Delmas & Burbano, 2011). The literature that has grown around this problem is overwhelmingly verbal and visual, and regulation has followed the same path. The substantiation regimes emerging in the European Union, notably Directive (EU) 2024/825 on empowering consumers for the green transition (European Union, 2024), address words and, less directly, images. Sound is absent from both.

The omission is the more striking because sensory marketing has established that non-visual cues shape product judgement in systematic ways. Krishna (2012) defines the field as marketing that engages the senses and thereby affects perception, judgement and behavior, noting that sensory cues can generate brand attributes in the consumer's own mind rather than supplying them propositionally. Auditory cues specifically have been shown to carry meaning through crossmodal correspondence and phonetic symbolism (Spence, 2012; Yorkston & Menon, 2004). Ambient sound, meanwhile, has been known since Milliman (1982) and North et al. (1997) to alter what shoppers do. If environmental meaning travels through cues rather than only through claims, sound is a plausible carrier.

A second literature, developed almost entirely separately, treats sound not as a signal but as an environmental condition. Soundscape ecology and eco-acoustics, descending from Schafer (1977), study the acoustic environment as a measurable ecological variable rather than a communicative one. Within that tradition, Dumyahn and Pijanowski (2011) argue that soundscapes satisfy Ostrom's (1990) criteria for a common-pool resource. Institutionally, the World Health Organization (2018) and the European Environment Agency (2020,2025) treat environmental noise as a public health burden of substantial scale. Sound, on this account, is not a medium but a resource.

The omission is worth examining, because sound is demonstrably at work in the sustainability economy. Retailers use recorded nature sound to shape store ambience. Frito-Lay withdrew a fully compostable packaging from most SunChips flavors in 2010 following a consumer backlash centered on its noise, a case widely reported in the trade press though not, to our knowledge, examined in peer-reviewed research. Electric vehicles, the emblematic green product of the decade, are required by Regulation (EU) No 540/2014 on the sound level of motor vehicles (European Union, 2014) and by the corresponding United States standard, Federal Motor Vehicle Safety Standard No. 141 on minimum sound requirements for hybrid and electric vehicles, to emit artificial sound at low speeds, and manufacturers treat that mandate as a branding opportunity.

Whether these practices rest on evidence, and what that evidence shows, has not been established. Parguel et al. (2015) demonstrated that nature-evoking elements in advertising can inflate a brand's ecological image without any verbal claim; a phenomenon they termed executional greenwashing but operationalized the construct visually. Whether the auditory case behaves similarly is unknown.

This article addresses a single research question: how do auditory cues influence consumer perceptions of, and responses to, environmental sustainability?

The question is addressed through a scoping review. A scoping review, rather than a systematic review of effects, is appropriate because the objective is to map the extent, range and nature of a body of evidence and to identify gaps, rather than to synthesize effect sizes for a defined intervention (Arksey & O'Malley, 2005; Munn et al., 2018; Tricco et al., 2018). As will be seen, the literature is heterogeneous in design, discipline and outcome measure to a degree that makes effect-size synthesis inappropriate.

Methods

Protocol and reporting

The review was conducted and is reported in accordance with the PRISMA extension for scoping reviews, PRISMA-ScR (Tricco et al., 2018). PRISMA-ScR adapts the PRISMA reporting standard for reviews whose purpose is to map the extent, range and nature of evidence rather than to estimate the effect of an intervention. It comprises a 20-item reporting checklist covering the review question, eligibility criteria, information sources, selection process, data charting and synthesis, together with two optional items. Unlike PRISMA 2020, it does not require critical appraisal of individual sources, since the objective is coverage rather than validity assessment. No protocol was registered in advance; this is noted as a limitation.

Eligibility criteria

Eligibility criteria were derived deductively from the review question rather than from any existing framework in this domain, since none was available: no prior review addresses the intersection of auditory cues and sustainable consumption. Each element of the question was translated into an inclusion requirement, and the exclusion criteria were then developed inductively, as categories of irrelevant material recurred often enough to warrant explicit rules (*see Protocol amendment*). Eligibility was defined using the Population-Concept-Context (PCC) framework recommended by the Joanna Briggs Institute for scoping reviews (Peters et al., 2020). PCC is the scoping-review counterpart of PICO, which structures questions about intervention effects around population, intervention, comparator and outcome. Because this review asks what evidence exists rather than how well an intervention works, it has no comparator and no predefined outcome, which makes PICO unsuitable and PCC appropriate. PCC framework was applied as follows: (i) **population**: consumers or market actors; (ii) **concept**: auditory or acoustic cues functioning as carriers of environmental meaning, or acoustic environmental quality as

an object of market valuation; (iii) **context**: sustainability-related products, brands, packaging, services, destinations or communications.

Reports were eligible where an acoustic term appeared in the title or author keywords, operationalizing the requirement that sound be a subject of study rather than an incidental mention, where a consumer, visitor or market outcome was addressed, and where an environmental sustainability dimension was present. Peer-reviewed articles, reviews, conference papers, books and book chapters in English were eligible.

Reports were excluded where sound was studied as a material or engineering property without perceptual or market content; where the subject was the music industry, music culture or festivals rather than sound as a cue; where "noise" denoted statistical or signal-processing noise, or was used metaphorically; where the sustainability dimension was economic or commercial rather than environmental; and where no consumer or market outcome was addressed.

Information sources and search

The search used a three-block Boolean strategy, a standard approach in which each conceptual component of the review question forms a block of synonyms combined internally with OR, and the blocks are then combined with AND so that retrieved records must satisfy all three simultaneously. Here the blocks corresponded to the PCC elements: an acoustic term (concept), a sustainability term (context) and a consumer or market term (population). Scopus and Web of Science were searched in August 2026. In Scopus the acoustic block was restricted to TITLE and AUTHKEY; in Web of Science to TI= and AK=, deliberately excluding Keywords Plus, which is algorithmically generated from cited references. Searches were not date limited. The review's purpose was to establish the extent of existing evidence, restricting by date risked excluding foundational work and pre-empting a finding about the field's age. The charted set in fact spans 2014 to 2026, and the earliest study was retained on relevance alone.

(i) **Protocol amendment**. The initial formulation permitted the acoustic term to appear anywhere in title, abstract or keywords. This returned 3,074 records in Scopus and 2,867 in Web of Science, dominated by studies where sound was mentioned incidentally. The acoustic block was therefore restricted to title and author keywords, and document-type and language limiters were applied, returning 420 and 439 records respectively. The amendment was made before screening and is reported here rather than concealed.

Selection

Records were deduplicated by DOI and then by normalized title. Screening was conducted in Excel. Titles and abstracts of all 620 unique records were assessed against the eligibility criteria. Keyword filters were used to pre-sort records into likely-eligible and likely-ineligible groups before assessment, so that reading effort could be concentrated where judgement was required; every record was nonetheless individually assigned a decision. Exclusion reasons were drawn from a fixed set of codes (materials and engineering acoustics; sound not studied as a variable; music industry, culture and festivals; no

consumer or market outcome; signal-processing, statistical or metaphorical noise; ecology or health with no market link; and no environmental sustainability dimension). Full texts were sought for all 37 eligible reports.

Charting

Fields were selected to answer the review question directly: study identifier, authors and year for identification; research stream, design and sample to characterize the evidence; and sound stimulus or acoustic attribute, outcome measured and key finding to capture what each study manipulated and what it found. A tenth field recorded whether charting was performed from the full text or the abstract, since 16 reports could not be retrieved and their charted entries therefore rest on what the abstract reports. Charting was performed by a single reviewer using a form developed for this review, which was not piloted in advance. The complete charting table, listing all 33 studies against these fields, is provided in Appendix A.

Results

Selection outcome

Searches returned 859 records (Scopus 420; Web of Science 439). Deduplication removed 239 (225 by DOI, 14 by title), leaving 620 unique records and indicating 38.2% overlap between databases. Screening excluded 583 records. The largest categories were materials and engineering acoustics (179), records in which sound was not studied as a variable (139), and the music industry, culture and festivals literature (139). A further 72 were excluded for addressing no consumer or market outcome, 26 because "noise" carried a signal-processing, statistical or metaphorical sense, 18 for treating ecology or health with no market link, and 10 for lacking an environmental sustainability dimension.

Thirty-seven reports met the eligibility criteria and were sought for retrieval. Full texts obtained for 21; 16 could not be retrieved and were assessed at abstract level. Four reports were excluded at the eligibility stage: two because the sustainability dimension proved to be commercial rather than environmental, and two because no consumer or market outcome was in fact measured. **Thirty-three studies were charted: 17 from full text and 16 from abstract**. Charting 16 reports at abstract level is a limitation, but a bounded one. Scoping reviews chart the extent and nature of evidence rather than appraise its validity, and the fields recorded here (design, sample, stimulus and outcome type) are conventionally reported in structured abstracts, so stream assignment and the descriptive patterns in Figures 2 and 3 are unlikely to be affected. What abstracts do not support is close reading of effect magnitude or procedural detail, which is why narrative describes design detail more fully for the studies read in full. Had this been a systematic review of effects, the same 16 reports would have had to be excluded outright. Figure 1 presents the flow.

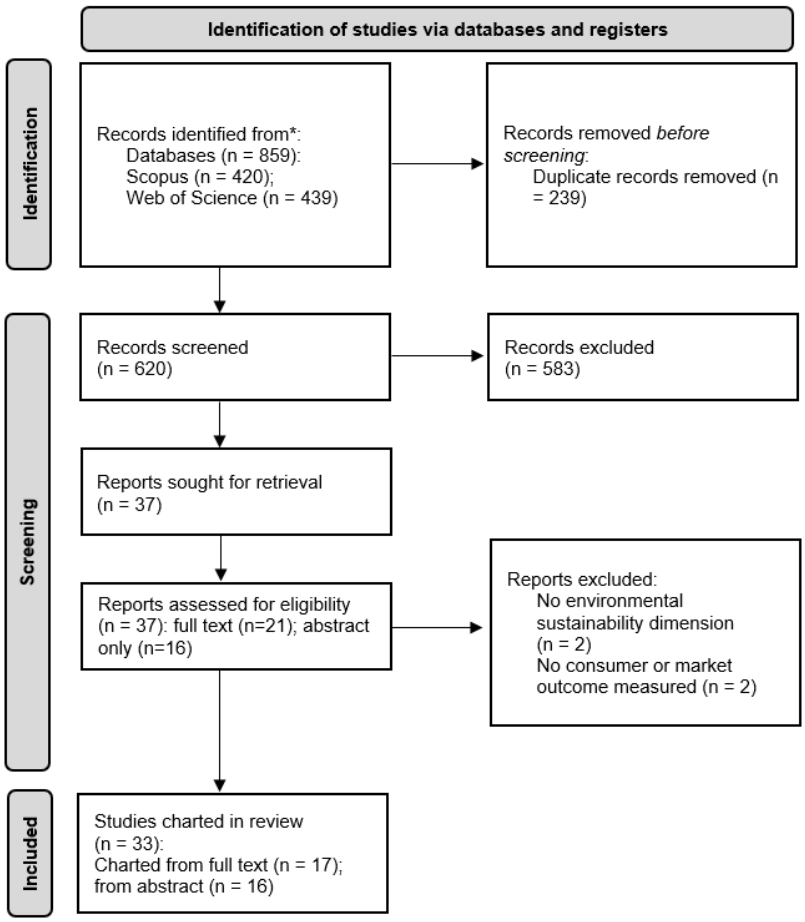


Figure 1. Study selection

Source: Adapted from Page et al. (2021) under CC BY 4.0. Eligibility was assessed at full text for 21 reports and at abstract level for 16 reports that could not be retrieved

Characteristics of the evidence

The charted studies span 2014 to 2026. Publication is concentrated recently: 12 of 33 studies (36%) appeared in 2025-26, and 23 (70%) from 2020 onward. These counts use publication year, which lags submission by a period that varies across the journals represented here. Year-of-publication data therefore understates how recent the underlying research activity is, and any apparent gap each year may reflect editorial timing rather than research output. This matters most for the valuation stream discussed below, where the absence post-2021 publications should be read as an absence of published work rather than confirmed inactivity. Designs are heterogeneous; laboratory and online experiments, in-store and in-park field experiments, questionnaire surveys with structural equation modelling, hedonic price regression, contingent valuation, and conceptual papers. Outcome measures range from perceived environmental friendliness and willingness to buy through visitor loyalty and dwell time to property prices and monetized soundscape value. This heterogeneity is itself a finding: no common outcome metric exists across the field, which precludes meta-analysis. Figure 2 and Figure 3 summarize two features of the

charted set: its distribution across years and streams, and the type of outcome each study measured.

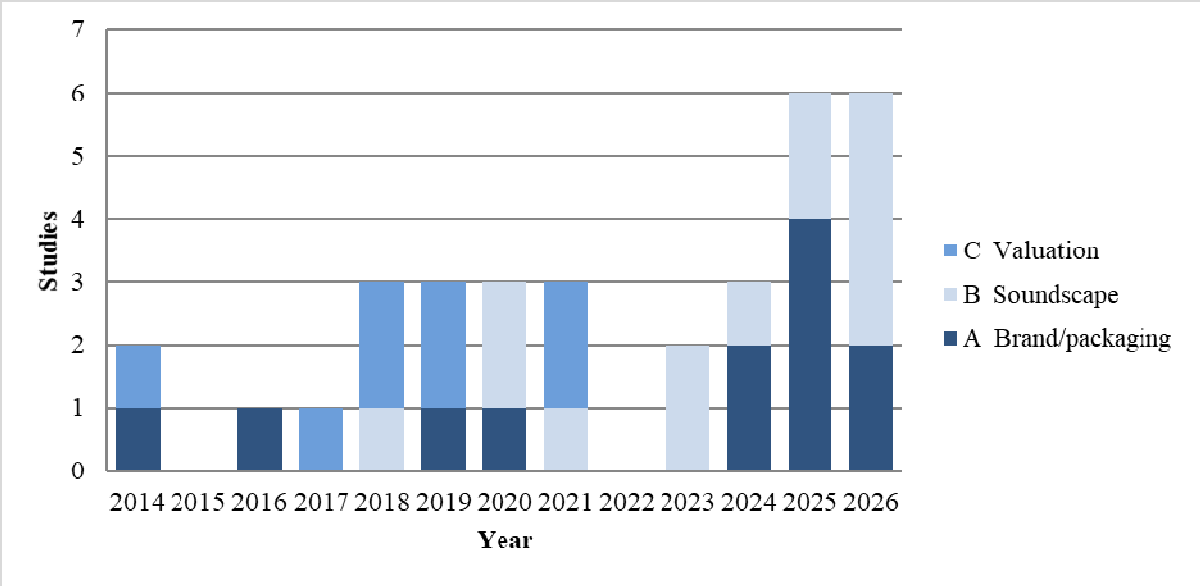


Figure 2. Studies by year of publication and stream

Source: Author's work

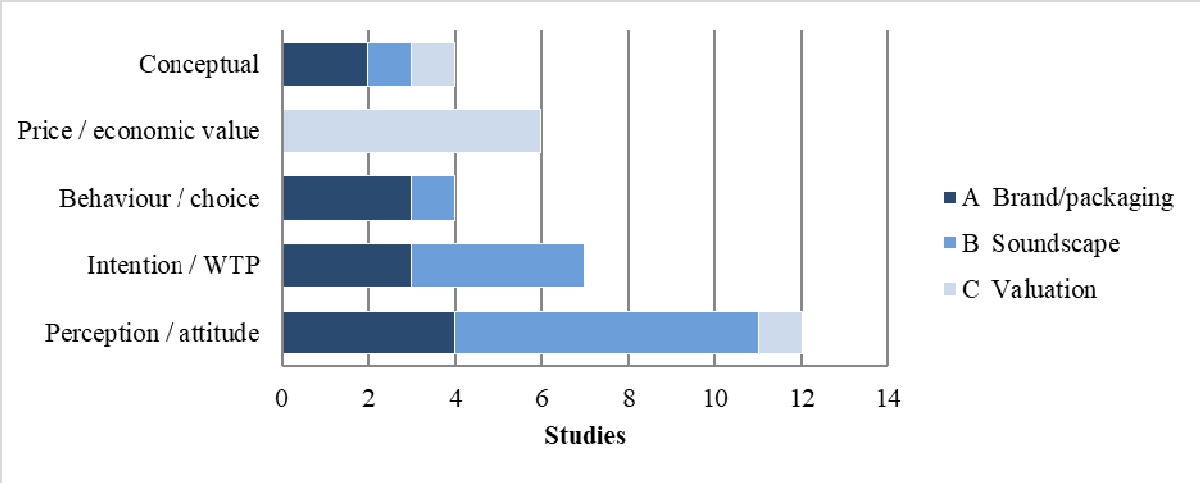


Figure 3. Type of outcome measured by stream

Source: Author's work

Two patterns are visible. First, the streams have diverged in their trajectories. Studies of brand, packaging and product cues of soundscape and visitor response accelerate markedly from 2023 onward, with six studies in each of 2025 and 2026. Market valuation of acoustic quality shows the opposite pattern: eight studies distributed between 2014 and 2021, and none thereafter. On the evidence charted here the valuation stream appears dormant, at least within the boundaries of this review's search. On the evidence charted here, the valuation stream appears dormant. That conclusion holds only within this review's search boundaries, however. Because the strategy required an acoustic term in the

title or author keywords, hedonic and contingent-valuation studies indexed under property prices or transport economics, with noise appearing only in the abstracts, would not have been retrieved. The contrast with the other two streams is nonetheless pronounced, and worth investigating directly.

Second, outcomes cluster heavily at the perceptual end. Twelve of the 33 studies measure perception or attitude, seven measure intention or stated willingness to pay, and six report price or economic value. Only four measure behavior or actual choice. The imbalance matters for what the evidence can support: the field can say a good deal about how auditory cues change what people think about environmental quality, and comparatively little about what they consequently do.

Three streams were identified.

Table 1. Research streams identified

Stream	***n***	**Typical design**	**Typical outcome**
A. Brand, packaging and product cues	12	Controlled experiment	Perceived environmental friendliness; willingness to buy
B. Soundscape and visitor response	13	Survey with SEM; field observation	Satisfaction, loyalty, pro-environmental intention
C. Market valuation of acoustic quality	8	Hedonic regression; contingent valuation	Property price; willingness to pay

Source: Author's work

Stream A: brand, packaging and product cues

This stream tests whether specific acoustic properties shift environmental judgement and is the most methodologically controlled.

(i) **Brand-name phonetics:** Joshi and Kronrod (2020) report four studies, including a field experiment in which 200 participants chose between pens bearing invented brand names differing only in consonant voicing. Brand names composed of voiceless consonants were rated significantly higher on environmental friendliness than voiced equivalents ($M=4.26$ vs. 3.52; $F(1,163) = 48.05$, $p < .001$), and choice in the field study favored the voiceless name (58% vs. 42%). The authors attribute the effect to metaphorical association via implied human characteristics such as gentleness and non-threatening behavior. Chi et al. (2026) extend the same logic from phonetics to the speaking voice, showing that voice pitch in hotels' pro-environmental messaging modulates the identifiable victim effect and thereby the persuasive force of the appeal.

(ii) **Packaging sound:** Khandani et al. (2026) demonstrate across five online experiments that consumers identify packaging materials by their opening sounds, frequently misidentify them, and revise both perceived environmental friendliness and willingness to buy accordingly. Brand-name consonant voicing moderates identification accuracy, connecting the two mechanisms directly.

(iii) **Composed soundscapes:** Rodríguez et al. (2025) mapped sensory and affective sustainability descriptors onto psychoacoustic properties, selected ten instrumental soundtracks accordingly, and tested them across two studies (combined N=517). Soundtracks aligned with sustainability descriptors reliably evoked sustainability perceptions; overlaying nature sounds raised environmental associations specifically, while overlaying human group sounds raised social associations.

(iv) **Product acoustics:** Fernandes et al. (2025) link drying method to the acoustic and mechanical crispness of apple snacks and to consumer acceptance, positioning solar drying as a sustainable processing route. Fiebig (2019), a conceptual contribution, argues that existing noise-related eco-labels rely on simple level indicators and proposes sound-quality classification as a basis for identifying "acoustically friendly" products. Graakjær (2025) analyses how designed electric-vehicle sound constructs, and complicates, the sonic signification of sustainability.

The stream also includes Spendrup et al. (2016) in-store field experiment with 627 customers, testing nature sounds against willingness to buy sustainable food, and Liang et al. (2024) use of event-related potentials and drift-diffusion modelling to examine how natural sounds affect green product purchase decisions. Xu et al. (2024) test musical atmosphere in an eCommerce interface, treating it as simultaneously attractive and distractive in sustainable choice. Two further studies extend the stream cross-culturally: Marquis et al. (2025) assess how ambient natural sounds shape consumer response to a novel insect food across national samples, and Carey and Cervellon (2014) compare pictorial and auditory depictions of ethical fashion across Canadian, French and British consumers, the earliest charted study to treat auditory depiction as a distinct channel for ethical claims.

Stream B: soundscape and visitor response

The largest stream, and the most disciplinarily homogeneous; predominantly tourism, environmental psychology, urban and landscape planning, using survey and structural equation modelling.

Jin et al. (2026) combine acoustic mapping, surveys (417 and 449 valid questionnaires across two Chinese World Heritage sites), structural equation modelling and grounded-theory interviews, identifying four functional soundscape zones and treating soundscape as a carrier of heritage value that shapes visitor behavior. Yan et al. (2026) relate objectively measured audiovisual characteristics of urban waterfronts to tourist loyalty across 1,768 valid questionnaires within a stimulus-organism-response framework, finding both synergistic and antagonistic effects. Wang et al. (2025) survey 524 residents and find rural soundscapes function as emotional mediators with significant positive paths to environmental and community identity.

Chen, Y. et al. (2023) provide the stream's strongest behavioral evidence through covert observational experiment: melodious music attracted more park visitors, grass-cutting noise reduced crowd flow and produced avoidance behavior, and comfortable acoustic conditions slowed walking pace; outcomes observed rather than self-reported.

Zuo et al. (2020) offer the stream's most conceptually distinctive contribution. Surveying residents across six villages at different stages of tourism development, they document biophony declining and anthrophony rising with tourism maturation, and name the resulting phenomenon *soundscape commercialization*, noting that the representation of local folk songs was substantially altered. This is the only charted study to treat the commercial appropriation of soundscape as a problem in itself.

The remaining studies in this stream extend the same survey-and-modelling approach across settings. Qiu et al. (2018) link tourists' soundscape emotion to sustainable tourism outcomes, while Chen, M. et al. (2021) apply sentiment analysis to tourist responses to rural soundscapes in China, translating expressed sentiment into acoustic environment management recommendations for the countryside. Pang and Jiang (2026) model the path from destination soundscape to pro-environmental behavior using the Reasonable Person Model. Zhu et al. (2023) combine GIS mapping with 941 questionnaires at a Chinese geopark, concluding that sound levels could rise somewhat without reducing visitor comfort, while Sztubecka et al. (2020) convert visitors' subjective sound perception in urban green space into planning scenarios through fuzzy cognitive mapping. Yin and Ni (2025) find soundscape atmosphere shapes tourist pleasure through perceived cultural authenticity; Alavanou and Poulaki (2026) position destination soundscape within a broader sustainability framing conceptually rather than empirically. Huang and Zeng (2024) survey 613 visitors at a Chinese coastal destination, applying a stimulus-organism-response model in which the auditory landscape contributes alongside the visual to tourism experience and subsequent behavior.

Stream C: market valuation of acoustic quality

This stream monetizes acoustic environmental quality and is methodologically distinct again, drawing on environmental and real-estate economics.

Wu et al. (2021) apply pairwise comparison, travel-cost interval analysis and contingent valuation to separate soundscape value from total landscape value at the Qiantang River tide, deriving a separation coefficient of 0.138 and valuing the soundscape at CNY 315.1-333.8 million (approximately USD 48.7-51.6 million). Morano et al. (2021) model noise effects on residential prices across four areas of Bari, finding the influence of noise diminishes from central to peripheral areas and disappears entirely from the suburban model. Batóg et al. (2019) apply spatial hedonic regression and difference-in-differences around Polish regional airports, finding more rigid land-use restrictions translate into larger price discounts while cautioning that several estimates were not statistically significant.

The stream's remaining studies apply the same valuation logic to transport and policy contexts. Huh and Shin (2018) elicit willingness to pay for noise-control policy and find it varies by noise source, while Lera-López et al. (2014) estimate rural stakeholders' willingness to pay to reduce road transport externalities including noise. Trojanek and Huderek-Glapska (2018) associate the designated Limited Use Area around Warsaw Chopin Airport with property values, complementing Batóg et al.'s (2019) Polish airport analysis. Two further studies address the policy interface rather than price directly: Berge

and Sandberg (2017) review five years of EU tire labelling, in which a noise value sits alongside fuel efficiency and wet grip as a consumer-facing environmental indicator, and Profillidis et al. (2019) survey perceived traffic noise in Athens and Thessaloniki in relation to sustainable transport measures. All eight studies in this stream predate 2022.

What does the evidence not cover?

Four gaps are evident from the charted set.

(i) **Behavior outcomes are rare.** As Figure 3 shows, only four of 33 studies measure behavior or observed choice. Chen, Y. et al. (2023) observe crowd movement directly; Joshi and Kronrod (2020) record an actual product selection in a field setting; Liang et al. (2024) and Xu et al. (2024) examine decisions rather than dispositions. The remainder relies on self-report. The evidence that auditory cues shift *perceived* environmental friendliness is therefore considerably stronger than the evidence that they shift what people buy, a gap that matters commercially and, if the cues are ever treated as claims, legally.

(ii) **No study addresses auditory cues as potentially misleading.** Several document that acoustic cues shift environmental judgement in ways not grounded in product attributes, Khandani et al. (2026) show consumers misidentify materials by sound and revise eco-friendliness judgements on that basis, yet none frames this as a question of claim substantiation, and none engages the greenwashing literature.

(iii) **Law and regulation are absent.** No charted study examines whether or how non-verbal environmental claims are governed, either by sector regulation or by the general law on misleading commercial practices. This matters because the legal question is the broader one: a cue that induces a false belief about environmental quality may fall within the prohibition on misleading actions and omissions under consumer protection law even where no sector-specific rule addresses sound at all. Fiebig (2019) comes closest, nothing that noise-related eco-labels use simple level indicators but treats this as a metrology problem rather than a legal one.

(iv) **The streams do not converse.** Stream A cites sensory marketing and consumer psychology; Stream B cites tourism and environmental psychology; Stream C cites environmental economics. Cross-citation is sparse. A finding such as Zuo et al.'s (2020) soundscape commercialization, which bears directly on the ethics of the practices Stream A investigates, appears not to be taken up in Stream A at all.

Discussion

Four observations follow from the charted evidence (see Table 1; Figures 2 and 3).

(i) **The mechanism is established**. The consequence is not. Across independent research groups and several operationalization's (brand-name phonetics, packaging-opening sounds, psychoacoustically selected soundtracks, ambient nature recordings) auditory cues reliably shift perceived environmental friendliness. That convergence is the field's firmest result, and it is consistent with what sensory marketing would predict: where a product attribute cannot be verified directly, extrinsic cues fill the inferential gap (Krishna, 2012; Olson & Jacoby, 1972). What remains largely untested is whether these

perceptual shifts change purchasing at any scale, because so few studies measure behavior. The four that do are encouraging but heterogeneous; a pen choice, crowd movement in a park, an eCommerce decision task, and a purchase-decision model, and they do not yet constitute a body of evidence.

(ii) **The streams are diverging**. Figure 2 shows brand and soundscape research accelerating while valuation work has produced nothing since 2021 within this corpus. This is not simply a matter of volume. The three streams also differ in what they take sound to be: a persuasive cue in Stream A, an experiential quality in Stream B, and an environmental attribute with a price in Stream C. Streams A and B are converging on the consumer as the unit of analysis, while stream C's unit is the market or the property. The practical consequence is that the field is developing strong evidence about how sound makes people feel about sustainability and weakening evidence about what acoustic environmental quality is worth.

(iii) **An evaluative question is conspicuously unasked**. The literature establishes that acoustic cues shift environmental judgement in ways not grounded in product attributes. Khandani et al. (2026) show consumers misidentify packaging materials by sound and revise eco-friendliness judgements accordingly; Rodríguez et al. (2025) show that soundtracks can be engineered to evoke sustainability associations. These are, functionally, the mechanics of a claim. Yet no charted study frames them as such, and none engages in the greenwashing literature, despite Parguel et al. (2015) already established that non-verbal nature-evoking cues can mislead, and despite Delmas and Burbano's (2011) observation that limited and uncertain regulation is itself a driver of greenwashing. The nearest approach is Berge and Sandberg's (2017) review of EU tire labelling, where a measured noise value appears alongside fuel efficiency as a consumer-facing environmental indicator; but that is a disclosed specification, not a cue from which consumers infer environmental quality, and the distinction is precisely the one the literature has yet to examine. The gap is not that the phenomenon is unstudied but that it is studied without its evaluative dimension.

(iv) **A regulatory asymmetry follows**. Directive (EU) 2024/825 (European Union, 2024) requires substantiation of environmental claims made in words. Nothing in the instruments identified here attaches a comparable requirement to a cue conveying the same proposition acoustically. A brand may not print "environmentally friendly" without evidence but may select a brand name whose phonetics carry that inference (Joshi & Kronrod, 2020), or a packaging material whose sound implies it (Khandani et al, 2026), without engaging the substantiation regime at all. Whether this asymmetry is a defect or simply the natural boundary of what regulation can reach is a normative question this review cannot settle. That it exists, however, appears to be a matter of fact rather than of interpretation.

One further observation belongs here because it bears on the interpretation of the whole map. Zuo et al. (2020) document biophony declining and anthrophony rising as tourism develops and name the result soundscape commercialization. Read alongside Stream A's demonstration that recorded natural sound is commercially effective, this

suggests a relationship the charted literature does not pursue: the acoustic material that makes sustainability persuasive is drawn from an environment that commercial activity is simultaneously altering. Establishing whether that relationship is real, and in which direction it runs, would require evidence no charted study provides.

Implications

For research: four priorities follow directly from the gaps. Experimental work contrasting auditory and visual executional greenwashing would establish whether the auditory case behaves as Parguel et al. (2015) visual one does. Behavioral and field designs are needed to convert perceptual findings into evidence about consumption. Replication matters unusually here, since the studies closest to the review question are recent and largely untested. And the dormancy of the valuation stream is worth investigating in its own right: if acoustic environmental quality has measurable market value, the absence of recent work is a gap rather than a settled question.

For practice: the charted evidence supports the proposition that acoustic design influences how environmentally favorable a product or place appears. It does not yet support claims about return on that influence. Firms deploying nature sound or engineered product acoustics for sustainability positioning are, on current evidence, acting ahead of what has been demonstrated.

For policy: the regulatory asymmetry identified above has a straightforward implication: if environmental claims require substantiation because consumers cannot verify environmental quality for themselves, the justification applies to any cue from which they draw that inference, not only to cues expressed in words. Three routes follow. The narrowest would treat auditory cues under existing prohibitions on misleading commercial practices, which are already framed in terms of the effect on the average consumer's transactional decision rather than the form the representation takes. This requires no new instrument, only recognition that a sound can carry a representation. A broader route would extend the substantiation requirements of Directive (EU) 2024/825 (European Union, 2024) explicitly to non-verbal cues, which would demand a workable test for when a cue constitutes a claim; a question the evidence charted here cannot yet answer, since no study has examined the point. The third route is disclosure rather than prohibition, along the lines Fiebig (2019) proposes for product sound quality: requiring that acoustic properties presented as environmentally relevant be measured and stated, as the EU tire label already does for noise (Berge & Sandberg, 2017). Each route depends on evidence the field has not produced. Until studies establish whether auditory cues alter decisions rather than only perceptions, regulators lack the basis to judge which response is proportionate, which makes the behavioral research gap a policy problem as much as a scientific one.

Limitations

Several constraints bear on how far these findings should be taken. The search covered only Scopus and Web of Science, whose coverage of design, acoustics and humanities

venues is uneven: a directly relevant Design Research Society paper (Marentakis & Dal Palù, 2024) came to light outside the search and is not in the charted set, indicating that conference literature in design venues was under-retrieved. It was restricted to English-language reports and run on a single date in a fast-moving field. Of the 37 eligible reports, 16 could not be obtained and were charted from their abstracts; because that unretrieved set is not random but contains several experimental consumer studies, design detail and effect magnitude are described more fully for Streams B and C than for Stream A. Screening was performed by a single reviewer, with no second rater and therefore no inter-rater reliability coefficient, which is the review's most significant methodological limitation. Consistent with scoping review methodology, individual study quality was not appraised, so charted findings should be read as reported rather than as validated. Finally, the three streams were derived interpretively by the reviewer from charted characteristics, and another analyst might reasonably partition them differently.

Several of these constraints are addressable in future work. Extending the search to Google Scholar, ProQuest and design-specific proceedings databases would test whether the under-retrieval of conference literature is systematic. Independent duplicate screening, with agreement reported as Cohen's κ, would replace the present reliance on a single reviewer, and prospective registration on the Open Science Framework would fix the protocol before screening rather than documenting amendments afterwards. Institutional interlibrary loan would reduce the number of reports charted at abstract level. The stream typology would be strengthened by independent assignment: circulating the charted set to a second analyst and comparing partitions would establish whether the three streams are a stable feature of the literature or an artefact of one reading.

Conclusion

This scoping review mapped 33 studies addressing how auditory cues influence consumer response to environmental sustainability. The evidence divides into three streams that share a subject but not a method, a vocabulary or a citation base: brand and packaging cues (Stream A, n=12), soundscape and visitor response (Stream B, n=13), and market valuation of acoustic quality (Stream C, n=8). The field's firmest result is that acoustic properties (the consonants in a brand name, the sound a package makes when opened, the psychoacoustic profile of a soundtrack) measurably shift perceptions of environmental friendliness. That finding holds across independent research groups and several operationalizations. Its principal weakness is gap (i): only four of the 33 studies measure behavior or observed choice, so the field can say what auditory cues do to judgement but not what they do to purchasing. The most consequential gap, however, is not methodological nor evidential but conceptual. Gaps (ii) and (iii) together establish that studies demonstrate auditory cues shifting environmental judgement without grounding in product attributes, yet none asks whether such a cue constitutes a claim, and none examines how law or regulation would treat it if it did. Gap (iv) explains why: the three streams do not read one another, so the observation in Stream B that commercial soundscape deployment can displace what it imitates (Zuo et al., 2020) has not reached the

stream that studies how such recordings persuade. A field growing this quickly (twelve of its 33 studies published in the last two years) will not close that gap by accident. Asking whether a sound can be a claim is the step most likely to make the evidence matter beyond the laboratory.

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APPENDIX A

Author (year)	Sound stimulus / attribute	Outcome measured	Key finding	Src
Carey & Cervellon (2014)	Pictorial and auditory depictions of ethical fashion	Attitudes toward ethical fashion	Compares young fashion-conscious consumers' attitudes across three cultures using pictorial and auditory stimuli	Abstract
Spendrup, Hunter & Isgren (2016)	Nature sounds in retail ambience	Willingness to buy sustainable food; connectedness to nature; mood	Examines nature sounds, connectedness to nature and mood as predictors of willingness to buy sustainable food	Abstract
Fiebig (2019)	Product sound quality metrics beyond sound power	Eco-label design; consumer information	Argues existing noise eco-labels rely on simple level indicators; proposes sound-quality classification to identify 'acoustically friendly' products	Full text
Joshi & Kronrod (2020)	Brand-name phonetics: voiceless vs voiced consonants	Product choice; perceived environmental friendliness	Voiceless brand names rated higher on environmental friendliness (M=4.26 vs 3.52, F(1,163)=48.05, p<.001); 58% vs 42% choice split in field study	Full text
Liang, Huang & Wang (2024)	Natural sounds	Green product purchase decisions	Natural sounds nudge green product purchases; top-down attention mechanism proposed	Abstract
Xu, Wu & Hamari (2024)	Musical atmosphere in eCommerce user interface	Sustainable consumption decisions	Musical atmosphere acts as both attractive and distractive facet of interface, affecting sustainable choice	Abstract
Rodriguez, Guedes, Graca, Reyes, Garrido & Prada (2025)	10 instrumental soundtracks selected on psychoacoustic properties; overlaid nature vs human-group sounds	Perceived environmental and social sustainability	Soundtracks aligned to sustainability descriptors reliably evoked sustainability perceptions; nature overlays raised environmental, human-group overlays raised social associations	Full text
Fernandes, Tavares & Goncalves (2025)	Acoustic crispness of dried apple snacks (solar vs conventional drying)	Consumer acceptance; sensory characteristics	Drying method alters acoustic-mechanical crispness and consumer acceptance; solar drying is assessed as sustainable processing route	Full text
Marquis, Reinoso-Carvalho, Deliza & Pantin-Sohier (2025)	Ambient natural sounds	Emotional, sensory and attitudinal response to insect food	Ambient natural sounds shape responses to a novel processed insect food across countries	Abstract
Graakjaer (2025)	Designed electric-vehicle sound (AVAS)	Meaning of 'sustainable' sound	Analyses how EV sound design constructs and complicates sonic signification of sustainability	Full text
Khandani, Veflen & Velasco (2026)	Recorded packaging-opening sounds (paper vs plastic); brand-name consonants	Material identification accuracy; perceived environmental friendliness; willingness to buy	Consumers misidentify packaging material by sound; misidentification shifts perceived eco-friendliness and willingness to buy; brand-name sounds moderate accuracy	Full text
Chi, Au, Tsang & Han (2026)	Voice pitch in pro-environmental messaging	Identifiable victim effect; pro-environmental response	Voice pitch modulates identifiable victim effect in hotels' pro-environmental communication	Abstract
Qiu, Zhang & Zheng (2018)	Destination soundscape	Tourist emotion; sustainable tourism development	Soundscape emotion linked to sustainable tourism outcomes	Abstract
Zuo, Zhang, Zhang, Zhang, Hu, Zhuang & Liu (2020)	Geophony / biophony / anthrophony change under tourism development	Resident perception of soundscape change	Biophony declined and anthrophony rose with tourism maturation; identifies 'soundscape commercialization', with folk-song representation altered	Full text
Sztubecka, Skiba, Mrowczynska & Mathias (2020)	Noise sources in urban green areas	Subjective sound perception; planning scenarios	Translates subjective perception into planning decision-support scenarios for sustainable soundscape management	Full text
Chen, Yu, Zhang, Wu & Yang (2021)	Rural soundscapes	Tourist sentiment	Tourist sentiment toward rural soundscapes informs acoustic environment management	Abstract
Chen, Chen, Lin, Lin, Li, Li & Dong (2023)	Grass-cutting noise vs music vs no source, across temperature levels	Crowd flow, dwell time, path choice, walking pace	Melodious music attracted more visitors; grass-cutting noise reduced flow and drove avoidance; comfortable acoustics slowed walking pace	Full text
Zhu, Pang & Zhou (2023)	Audio-visual landscape of geopark scenic areas	Tourist satisfaction; audio-visual preference matrix	Tourists broadly satisfied with soundscapes; sound level threshold could be raised without reducing comfort	Full text
Huang & Zeng (2024)	Visual and auditory coastal landscape	Tourism experience; behavior	Auditory landscape contributes to multisensory tourism experience and downstream behavioral response	Full text
Wang, Wen, Zhou, Zhang &	Rural village soundscapes	Emotion; place identity; pro-environmental	Soundscapes act as emotional mediators; significant positive path to environmental and community identity outcomes	Full text

Author (year)	Sound stimulus / attribute	Outcome measured	Key finding	Src
Zhao (2025)		orientation		
Yin & Ni (2025)	Soundscape atmosphere in night tourism	Tourist pleasure via cultural authenticity	Soundscape atmosphere affects pleasure, mediated by cultural authenticity [borderline: sustainability dimension unclear]	Abstract
Jin, Chen, Xu, Li, Sun & Li (2026)	Heritage-site soundscape zones	Tourist perception, satisfaction, heritage value	Soundscape functions as a carrier of heritage value shaping visitor behavior; four functional soundscape zones identified	Full text
Yan, Lei, Feng, Han, Li & Gao (2026)	Objective audiovisual characteristics of urban waterfronts	Tourist loyalty	Audiovisual characteristics show synergistic and antagonistic effects on loyalty via perceived restorativeness	Full text
Pang & Jiang (2026)	Destination soundscape	Tourists' pro-environmental behavior	Soundscape promotes pro-environmental behavior via Reasonable Person Model pathways	Abstract
Alavanou & Poulaki (2026)	Destination soundscape	Destination sustainability positioning	Positions soundscape within holistic destination sustainability	Abstract
Lera-Lopez, Sanchez, Faulin & Cacciolatti (2014)	Road transport externalities incl. noise	Willingness to pay for pollution reduction	Rural stakeholders' WTP to reduce road transport pollution impact [borderline: noise not isolated]	Abstract
Berge & Sandberg (2017)	EU tyre label noise value	Label effectiveness in the market	Reviews five years of EU tire labelling incl. noise parameter [borderline: consumer response not measured]	Abstract
Huh & Shin (2018)	Noise type (road, rail, aircraft, etc.)	Willingness to pay for noise control policy	WTP for noise control differs by noise type	Abstract
Trojanek & Huderek-Glapska (2018)	Aviation noise, Limited Use Area, Warsaw Chopin Airport	Property values	Association between designated noise zone and property values	Abstract
Batog, Forys, Gaca, Gluszak & Konowalczuk (2019)	Airport noise and land-use restriction zones	House prices	More rigid land-use restrictions translate into higher price discounts; several estimates not statistically significant due to sample size	Full text
Profillidis, Botzoris & Galanis (2019)	Perceived traffic noise	Perception of sustainable transport measures	Links sustainable transport modes to perceived traffic noise reduction [borderline]	Abstract
Wu, Liu & Nie (2021)	Qiantang River tide soundscape	Economic value; willingness to pay	Soundscape separation coefficient 0.138; soundscape valued at CNY 315.1-333.8 million (USD 48.7-51.6 million)	Full text
Morano, Tajani, Di Liddo & Daro (2021)	Measured noise pollution level	Residential selling prices	Noise influence on price declines from central to peripheral areas; suburban model excludes noise entirely	Full text

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CHAPTER III

POST-PANDEMIC TOURISM

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THE ECONOMIC RESILIENCE OF DOMESTIC TOURISM DEMAND IN POST-PANDEMIC VIETNAM: A STRUCTURAL EQUATION MODELLING APPROACH

Abstract: This study finds that domestic tourism functions as a key resilience mechanism in post-pandemic Vietnam. This study examines the determinants of domestic tourism demand in Vietnam during the post-COVID-19 recovery period. Using a quantitative approach and Structural Equation Modelling (SEM) based on data from 485 domestic travellers, the study analyses the effects of destination characteristics, perceived tourism impacts, tourist characteristics, and risk perception on travel demand. The findings reveal that perceived tourism impacts have the strongest influence on domestic tourism demand, followed by tourist characteristics and destination attributes, while risk perception has a weaker but significant effect. The study contributes to tourism economics by demonstrating that domestic tourism functions as a resilience mechanism under crisis conditions. It also highlights the importance of behavioural adaptation and socio-economic motivations in sustaining tourism demand.

Keywords: domestic tourism, tourism demand, COVID-19, Vietnam, tourism resilience

ODPORNOŚĆ GOSPODARCZA POPYTU NA TURYSTYKĘ KRAJOWĄ W WIETNAMIE PO PANDEMII: UJĘCIE OPARTE NA MODELOWANIU RÓWNAŃ STRUKTURALNYCH

Streszczenie (abstrakt): Niniejsze badanie dowodzi, że turystyka krajowa pełni rolę kluczowego mechanizmu odporności gospodarczej w Wietnamie po pandemii. W badaniu przeanalizowano czynniki determinujące popyt na turystykę krajową w Wietnamie w okresie odbudowy po pandemii COVID-19. Wykorzystując podejście ilościowe i modelowanie równań strukturalnych (SEM) w oparciu o dane od 485 podróżnych krajowych, badanie analizuje wpływ cech destynacji, postrzeganego wpływu turystyki, cech turystów i postrzegania ryzyka na popyt na podróże. Wyniki pokazują, że postrzegany wpływ turystyki ma najsilniejszy wpływ na popyt na turystykę krajową, a następnie cechy turystów i atrybuty destynacji, podczas gdy postrzeganie ryzyka ma słabszy, ale istotny wpływ. Badanie przyczynia się do rozwoju ekonomiki turystyki, wykazując, że turystyka krajowa pełni funkcję mechanizmu odporności w warunkach kryzysu. Podkreśla również znaczenie adaptacji behawioralnej i motywacji społeczno-ekonomicznych w podtrzymywaniu popytu na turystykę.

Słowa kluczowe: turystyka krajowa, popyt turystyczny, COVID-19, Wietnam, odporność turystyki

Introduction

The global tourism industry has long been characterised by its sensitivity to external shocks, including economic crises, political instability, and public health emergencies. However, the COVID-19 pandemic represents a disruption of unprecedented scale and complexity, fundamentally altering the structure and functioning of tourism systems worldwide. Unlike previous crises, which were often localised or temporary, the pandemic simultaneously halted international mobility across all regions, leading to a near-total collapse of global tourism flows (Gössling et al., 2020).

This systemic disruption has had particularly profound implications for emerging economies, where tourism plays a critical role in economic development. In Vietnam, tourism contributed approximately 10% of national GDP prior to the pandemic, with international visitors generating a disproportionately large share of revenue. The sudden closure of borders in early 2020 therefore resulted in a significant economic shock, disrupting supply chains, reducing employment, and threatening the sustainability of tourism-related businesses.

In response to this crisis, domestic tourism emerged as a key mechanism for economic recovery. Government initiatives, such as the "Vietnamese People Travel in Vietnam" campaign, sought to stimulate domestic demand and compensate for the loss of international arrivals. This shift marked a fundamental transformation in the structure of the tourism system, repositioning domestic tourism from a secondary market segment to a central pillar of resilience.

Despite the growing importance of domestic tourism, existing research has largely focused on the negative impact of crises on travel behaviour, emphasising risk perception as a primary deterrent to travel. According to Protection Motivation Theory (Rogers, 1975), individuals are expected to avoid activities perceived as risky, including travel during a pandemic. However, empirical observations in Vietnam suggest a more complex reality. Domestic travel demand persisted, and in some cases rebounded rapidly following the relaxation of restrictions, even in the presence of ongoing health risks.

This phenomenon presents a theoretical paradox. If risk perception discourages travel, why does demand continue to exist under conditions of uncertainty? This question highlights a critical gap in the literature and underscores the need for a more nuanced understanding of travel behaviour in crisis contexts.

One possible explanation lies in the adaptive strategies employed by travellers. Rather than avoiding travel altogether, individuals may modify their behaviour to reduce perceived risks. This includes choosing destinations perceived as safe, travelling in smaller groups, and opting for shorter trips. Such behavioural adaptations allow travellers to balance their desire for mobility with concerns about health and safety, thereby sustaining demand.

At the same time, the pandemic has also influenced the motivations underlying travel behaviour. Increasingly, travellers are motivated not only by personal enjoyment but also by a desire to support local economies and communities. This shift toward ethical

consumption suggests that socio-economic considerations play an important role in shaping domestic tourism demand.

To capture these dynamics, this study integrates multiple theoretical perspectives, including Tourism System Theory, Destination Image Theory, and the Push-Pull framework, supplemented by Protection Motivation Theory. By combining these approaches, the research develops a comprehensive framework for analysing domestic tourism demand under crisis conditions.

The study aims to address the following research question:

What are the key determinants of domestic tourism demand in Vietnam during the post-pandemic recovery period, and how do these factors interact under conditions of uncertainty?

The contribution of this study is threefold. First, it extends Tourism System Theory by introducing the concept of structural contraction, demonstrating how domestic tourism functions as a resilience mechanism when international mobility is restricted. Second, it advances Destination Image Theory by highlighting the central role of safety perception in shaping travel behaviour. Third, it provides empirical evidence for the Adaptive Substitution Model, offering a new theoretical lens for understanding tourism demand in crisis contexts.

Literature Review and Hypotheses Development

Tourism System Theory and Structural Resilience in Crisis Contexts

Tourism System Theory, originally conceptualised by Leiper (1979), provides a foundational framework for understanding tourism as an interconnected system comprising three key components: the tourist-generating region (TGR), the transit route region (TRR), and the tourist destination region (TDR). These components interact dynamically within broader socio-economic, political, and environmental contexts. Under normal conditions, the efficiency and continuity of this system depend heavily on the smooth functioning of transit routes, particularly international mobility networks.

However, the COVID-19 pandemic introduced an unprecedented disruption to this system by effectively severing global transit routes. Border closures, travel restrictions, and quarantine measures significantly limited cross-border movement, thereby collapsing the international tourism subsystem. From a systems perspective, this represents a critical failure point, as the TRR – traditionally a conduit for tourist flows – became a barrier rather than a facilitator.

Despite this disruption, tourism systems did not collapse entirely. Instead, they exhibited adaptive behaviour by reconfiguring their internal structures. In the case of Vietnam, domestic tourism emerged as an alternative pathway, allowing the system to maintain a degree of functionality. This adaptive response can be conceptualised as **structural contraction**, whereby the tourism system reduces its geographical scope while preserving internal circulation of demand.

This study extends Tourism System Theory by proposing that domestic tourism functions as an **internalised transit mechanism** under crisis conditions. When international mobility is restricted, the generating region and destination region become more tightly integrated, connected through domestic transport networks. This reconfiguration allows the system to sustain economic activity, albeit at a reduced scale.

Furthermore, the concept of resilience within tourism systems has gained increasing attention in recent literature. Resilience is defined as the ability of a system to absorb shocks, adapt to changing conditions, and recover from disruptions. Domestic tourism plays a critical role in enhancing this resilience by providing an alternative source of demand when external markets are inaccessible. In this sense, domestic tourism can be understood as a **shock absorber**, mitigating the impact of external disruptions on the tourism economy.

Risk Perception and the Risk-Demand Paradox

Risk perception is a central concept in tourism behaviour, particularly in the context of crises such as pandemics. According to Protection Motivation Theory (PMT) (Rogers, 1975), individuals evaluate threats based on two key dimensions: perceived severity and perceived vulnerability. These evaluations influence behavioural responses, typically leading to avoidance of high-risk activities.

In tourism contexts, perceived health risks have been consistently found to negatively influence travel intention (Bae & Chang, 2021). Tourists tend to avoid destinations perceived as unsafe, particularly during outbreaks of infectious diseases. This risk-averse behaviour aligns with the fundamental assumptions of PMT, suggesting that increased perceived risk should result in decreased travel demand.

However, empirical evidence from the COVID-19 pandemic challenges this assumption. In Vietnam, domestic tourism demand did not disappear entirely during periods of reduced restrictions. Instead, travel behaviour exhibited patterns of adaptation rather than avoidance. This phenomenon can be described as a **risk-demand paradox**, where demand persists despite high levels of perceived risk.

One explanation for this paradox lies in the concept of **coping appraisal**, a key component of PMT. While threat appraisal assesses the level of risk, coping appraisal evaluates the individual's ability to manage or mitigate that risk. When individuals perceive that they can effectively reduce their exposure – through measures such as wearing masks, choosing less crowded destinations, or using private transportation – they may still engage in travel activities.

This suggests that risk perception does not function as a binary deterrent but rather as a moderating factor that shapes the nature of travel behaviour. Instead of eliminating demand, risk perception leads to **behavioural adjustments**.

These adaptations include a preference for short-distance travel, increased demand for nature-based destinations, avoidance of crowded environments, and greater reliance on private transportation.

These adaptations enable individuals to balance their desire for mobility with concerns about safety, thereby sustaining domestic tourism demand.

Destination Image Theory and the Emergence of Safety as a Core Attribute

Destination Image Theory has long been recognised as a key determinant of travel behaviour. According to Baloglu and McCleary (1999), destination image consists of two primary components: cognitive image (knowledge and beliefs about a destination) and affective image (emotional responses to a destination). Together, these components influence tourists 'perceptions and decision-making processes.

Traditionally, cognitive attributes of destination image include factors such as natural scenery, cultural attractions, infrastructure, and price competitiveness. However, the COVID-19 pandemic has significantly altered the relative importance of these attributes. In particular, **safety perception has emerged as a dominant cognitive factor**, fundamentally reshaping the way destinations are evaluated.

In the context of a health crisis, safety is no longer a basic expectation but a primary determinant of destination attractiveness. Destinations perceived as safe – characterised by low infection rates, effective health protocols, and reliable information – are more likely to attract tourists. Conversely, destinations perceived as risky are avoided, regardless of their traditional appeal.

This shift represents a **paradigm change in destination image formation**, where health security acts as a **gatekeeper variable**. If a destination fails to meet minimum safety expectations, other positive attributes, such as scenic beauty or cultural richness, become irrelevant. In this sense, safety perception overrides traditional determinants of destination choice.

Furthermore, the pandemic has introduced a temporal dimension to destination image. Unlike traditional images, which tend to be stable over time, safety perceptions are highly dynamic, influenced by real-time information about infection rates and government policies. This results in a more volatile and context-dependent destination image, requiring continuous monitoring and adaptation by tourism stakeholders.

Push-Pull Factors and Behavioural Adaptation in Tourism Demand

The Push-Pull framework, originally developed by Dann (1977) and Crompton (1979), explains travel behaviour in terms of internal motivations (push factors) and external attractions (pull factors). Push factors include psychological needs such as escape, relaxation, and social interaction, while pull factors relate to destination attributes such as attractions, amenities, and accessibility.

During the COVID-19 pandemic, both push and pull factors underwent significant transformation. On the push side, prolonged lockdowns and social restrictions created a strong desire for escape, often referred to as "pandemic fatigue" or "revenge travel". This intensified the internal motivation to travel, even in the presence of risk.

On the pull side, traditional attractions such as crowded events and urban entertainment lost their appeal. Instead, tourists were drawn to destinations characterised by low population density, natural environments, privacy, and perceived safety.

This inversion of pull factors reflects a shift in consumer preferences, where safety and space become key determinants of destination choice.

The interaction between push and pull factors in this context highlights the adaptive nature of tourism demand. Strong internal motivations can override perceived risks, particularly when supported by appropriate destination attributes. This interaction is critical in understanding why domestic tourism demand persisted during the pandemic.

Perceived Tourism Impacts and Ethical Consumption

In addition to psychological and safety-related factors, socio-economic considerations have emerged as important drivers of travel behaviour. The concept of **perceived tourism impacts** refers to individuals 'awareness of the economic and social benefits of tourism, particularly for local communities.

During the pandemic, tourism was widely recognised as one of the most affected sectors, with significant job losses and business closures. This increased awareness has contributed to a shift toward **ethical consumption**, where travellers are motivated not only by personal enjoyment but also by a desire to support local economies.

This form of motivation aligns with broader trends in sustainable tourism, where consumers increasingly consider the social and environmental impacts of their actions. In the Vietnamese context, government campaigns promoting domestic travel as a means of supporting the national economy further reinforced this behaviour.

As a result, perceived tourism impacts can act as a **positive motivator**, encouraging individuals to engage in domestic travel despite potential risks. This highlights the importance of integrating socio-economic variables into models of tourism demand, particularly in crisis contexts.

Hypotheses Development

Based on the theoretical discussion above, this study proposes the following hypotheses:

H1: Destination characteristics positively influence domestic tourism demand.
Destination attributes, particularly those related to safety and accessibility, play a critical role in attracting tourists under crisis conditions.

H2: Perceived tourism impacts positively influence domestic tourism demand.
Individuals who recognise the socio-economic benefits of tourism are more likely to engage in travel as a form of ethical consumption.

H3: Tourist characteristics significantly influence domestic tourism demand.
Individual traits, including risk tolerance and behavioural adaptation, affect travel decisions during periods of uncertainty.

H4: Risk perception significantly influences domestic tourism demand.
While risk perception may constrain travel behaviour, it also shapes the form and nature of tourism demand rather than eliminating it entirely.

Research Methodology

Research Design

This study adopts a quantitative research design grounded in a positivist paradigm to examine the determinants of domestic tourism demand in Vietnam during the post-pandemic recovery period. A cross-sectional survey approach was employed to collect data from domestic travellers, allowing for the statistical testing of relationships between constructs derived from the theoretical framework.

The research is explanatory in nature, aiming to identify causal relationships among key variables, including destination characteristics, perceived tourism impacts, tourist characteristics, and risk perception. Structural Equation Modelling (SEM) was selected as the primary analytical technique due to its ability to simultaneously test multiple relationships between latent constructs and to assess both measurement and structural models.

The choice of SEM is particularly appropriate given the complexity of the conceptual framework, which integrates multiple theoretical perspectives and involves interrelated constructs. SEM allows for a comprehensive evaluation of model fit and provides robust estimates of the relationships between variables.

Research Instrument and Measurement Scales

Data were collected using a structured questionnaire designed based on an extensive review of the literature and insights derived from preliminary expert consultations. The questionnaire was divided into three main sections:

- **Section A:** Demographic information (age, gender, education, region),
- **Section B:** Travel behaviour (frequency, purpose, trip characteristics),
- **Section C:** Measurement of key constructs.

All constructs were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The use of Likert scales is widely accepted in tourism research for capturing subjective perceptions and attitudes.

The measurement items were adapted from established and validated scales in prior studies to ensure content validity:

- **Destination Characteristics:** Adapted from Bae and Chang (2021), focusing on perceived safety, hygiene, and accessibility.

- **Perceived Tourism Impacts:** Based on Gursoy (2019), capturing socio-economic awareness and support for local communities.
- **Tourist Characteristics:** Developed to reflect behavioural adaptation and personal attitudes toward travel during COVID-19.
- **Risk Perception:** Adapted from health risk perception literature, measuring perceived severity and vulnerability.
- **Domestic Tourism Demand:** Measured through travel intention and planned travel behaviour.

To ensure clarity and relevance in the Vietnamese context, the questionnaire was translated from English into Vietnamese and then back-translated into English. This back-translation process ensured semantic equivalence and reduced potential bias due to language differences.

Pilot Study and Instrument Validation

A pilot study was conducted with 30 respondents representative of the target population to assess the clarity, reliability, and validity of the questionnaire. Participants were asked to provide feedback on the wording, structure, and comprehensibility of the items.

Based on the feedback, minor revisions were made to improve clarity and eliminate ambiguity. The pilot data were also used to assess internal consistency using Cronbach's Alpha. All constructs achieved values above the recommended threshold of 0.70, indicating acceptable reliability.

The pilot study served as an important step in refining the research instrument and ensuring that it accurately captured the constructs of interest.

Sampling Strategy and Data Collection

The target population for this study consisted of Vietnamese citizens who had engaged in or intended to engage in domestic travel during the COVID-19 pandemic. Due to the constraints imposed by the pandemic, including restrictions on physical interaction, a non-probability sampling method was adopted.

Specifically, a **clustered convenience sampling** approach was employed. The survey was distributed online through social media platforms and travel-related communities, targeting respondents from different regions of Vietnam, including the North, Central, and South. This approach allowed for a diverse sample while accommodating the practical limitations of data collection during a public health crisis.

Data collection was conducted over a three-week period in March 2022. A total of 523 responses were initially received. After data screening and cleaning, which involved removing incomplete and inconsistent responses, 485 valid responses were retained for analysis.

The final sample size exceeds the minimum requirement recommended by Krejcie and Morgan (1970), which suggests a sample of at least 384 for large populations to achieve

a 95% confidence level. The sample size is also sufficient for SEM analysis, which typically requires a minimum of 200-300 observations for stable parameter estimation.

Data Analysis Techniques

Data analysis was conducted using SPSS 28.0 and AMOS software. The analysis proceeded in several stages:

Descriptive Analysis

Descriptive statistics were used to summarise the demographic characteristics of respondents and to provide an overview of travel behaviour and perceptions. Measures such as mean, standard deviation, frequency, and percentage were calculated.

Reliability Analysis

Cronbach's Alpha was used to assess the internal consistency of the measurement scales. All constructs achieved values above 0.70, indicating acceptable reliability.

Exploratory Factor Analysis (EFA)

EFA was conducted to examine the underlying factor structure of the data and to ensure that items loaded appropriately onto their respective constructs. The Kaiser–Meyer–Olkin (KMO) measure exceeded 0.80, and Bartlett's test of sphericity was significant ($p < 0.001$), confirming the suitability of the data for factor analysis.

Confirmatory Factor Analysis (CFA)

CFA was performed to validate the measurement model and assess construct validity. Factor loadings for all items exceeded the recommended threshold of 0.60, indicating strong convergent validity. Composite Reliability (CR) and Average Variance Extracted (AVE) values also met the required criteria.

Structural Equation Modelling (SEM)

SEM was used to test the hypothesised relationships between constructs. The structural model was evaluated using multiple fit indices, including chi-square/df, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA).

The model demonstrated a good fit, with values within acceptable ranges:

- $\chi^2/df < 3$
- $CFI > 0.90$
- $RMSEA < 0.08$

Ethical Considerations

Ethical considerations were carefully addressed throughout the research process. Participation in the survey was voluntary, and respondents were informed about the purpose of the study before providing consent.

No personally identifiable information was collected, ensuring the anonymity and confidentiality of respondents. Participants were given the option to withdraw from the survey at any time without penalty.

All data were stored securely and used solely for academic purposes. The research adhered to standard ethical guidelines for social science research.

Summary of Methodology

In summary, this study employs a robust quantitative methodology to investigate the determinants of domestic tourism demand in Vietnam. The use of validated measurement scales, a sufficiently large sample size, and advanced analytical techniques such as SEM ensures the reliability and validity of the findings.

The methodological approach provides a strong foundation for examining complex relationships between constructs and contributes to the rigor and credibility of the study.

Results and Discussion

Descriptive Statistics and Sample Characteristics

The final dataset consisted of 485 valid responses, providing a robust foundation for statistical analysis. The demographic profile indicates a relatively balanced sample in terms of gender distribution, with a slight predominance of female respondents. The majority of participants were young adults aged between 18 and 30, reflecting the higher engagement of younger demographics in online surveys and domestic travel activities during the pandemic period.

In terms of travel behaviour, a significant proportion of respondents reported undertaking at least one domestic trip during 2021, despite the ongoing pandemic. Short-duration trips (2-3 days) were the most common, suggesting a preference for minimizing exposure to risk while maintaining mobility. Additionally, a notable segment of respondents did not travel at all, highlighting the heterogeneity of behavioural responses under crisis conditions.

Descriptive statistics for the main constructs reveal several important trends. Travel motivation exhibited the highest mean score, indicating a strong desire for travel despite the pandemic. Destination image, particularly in terms of safety perception, also received relatively high ratings, reflecting confidence in domestic travel environments. In contrast, risk perception showed moderate levels, suggesting that while concerns about health risks were present, they were not sufficient to completely deter travel.

These findings provide preliminary evidence of a tension between risk perception and travel motivation, setting the stage for further analysis through structural modelling.

Measurement Model Assessment

Confirmatory Factor Analysis (CFA) was conducted to evaluate the reliability and validity of the measurement model. The results indicate that all constructs meet the required criteria for convergent and discriminant validity.

Factor loadings for all measurement items exceeded the recommended threshold of 0.60, demonstrating strong relationships between observed variables and their respective latent constructs. Composite Reliability (CR) values ranged from 0.856 to 0.923, indicating high internal consistency across all constructs. Similarly, Average Variance Extracted (AVE) values exceeded the threshold of 0.50, confirming adequate convergent validity.

Discriminant validity was also established, as the square root of AVE for each construct was greater than the inter-construct correlations. This suggests that each construct captures a distinct aspect of the conceptual model.

Overall, the measurement model demonstrates strong psychometric properties, providing a reliable basis for subsequent structural analysis.

Structural Model and Hypothesis Testing

The structural model was evaluated using Structural Equation Modelling (SEM) to test the hypothesised relationships between constructs. The model exhibited a good fit, with all fit indices within acceptable ranges:

- $\chi^2/df = 2.41$
- CFI = 0.942
- TLI = 0.931

RMSEA = 0.054

These results indicate that the proposed model adequately represents the observed data.

All four hypotheses were supported, as shown in Table 1.

Table 1: Results of Hypothesis Testing

Hypothesis	**Path Relationship**	**β**	**Result**
H1	Destination Characteristics → Demand	0.246	Supported
H2	Perceived Tourism Impacts → Demand	0.364	Supported
H3	Tourist Characteristics → Demand	0.298	Supported

Hypothesis	Path Relationship	β	Result
H4	Risk Perception → Demand	0.127	Supported

(Source: Author's own study)

Among the predictors, perceived tourism impacts exerted the strongest influence on domestic tourism demand (β = 0.364), followed by tourist characteristics (β = 0.298) and destination characteristics (β = 0.246). Risk perception, although statistically significant, exhibited the weakest effect (β = 0.127).

These findings suggest that domestic tourism demand during the pandemic is influenced more by positive motivations and adaptive behaviours than by risk avoidance.

Discussion: Domestic Tourism as a Resilience Mechanism

The results provide strong empirical support for the role of domestic tourism as a resilience mechanism within the tourism system. Consistent with Tourism System Theory, the findings demonstrate that when international mobility is disrupted, domestic demand can compensate for the loss of external markets.

The relatively strong effects of destination characteristics and tourist characteristics indicate that domestic tourism demand is shaped by both supply-side and demand-side factors. On the supply side, destinations that successfully communicate safety and hygiene standards are more likely to attract tourists. On the demand side, individuals who are more adaptable and willing to adjust their travel behaviour are more likely to engage in tourism activities.

This interaction highlights the dynamic nature of tourism systems, where both structural and behavioural adaptations contribute to resilience.

The Adaptive Substitution Model

One of the key contributions of this study is the development of the **Adaptive Substitution Model**, which explains how domestic tourism replaces international tourism under crisis conditions.

According to this model, high-income travellers who previously engaged in international travel redirect their consumption toward domestic destinations. This substitution is not merely a temporary adjustment but represents a structural transformation in tourism demand.

The model is supported by the strong effect of perceived tourism impacts, which suggests that travellers are motivated by a desire to support local economies. This behaviour reflects a shift toward ethical consumption, where tourism is viewed not only as a leisure activity but also as a means of contributing to economic recovery.

From an economic perspective, this substitution reduces leakage of tourism revenue and increases the local multiplier effect, thereby enhancing the overall resilience of the tourism system.

Risk-Demand Paradox and Behavioural Adaptation

The relatively weak effect of risk perception ($\beta = 0.127$) provides important insights into the nature of travel behaviour during the pandemic. Contrary to the predictions of Protection Motivation Theory, risk perception does not eliminate travel demand but rather modifies its form.

This finding supports the concept of a **risk-demand paradox**, where individuals continue to travel despite perceived risks by adopting coping strategies.

These strategies include selecting less crowded destinations, travelling in small groups or with family, using private transportation, and choosing short-duration trips.

These behavioural adaptations allow individuals to balance risk and mobility, enabling the continuation of tourism activities under uncertain conditions.

This result extends existing theories by suggesting that risk perception functions as a moderating variable rather than a direct deterrent. It shapes the characteristics of travel behaviour rather than determining whether travel occurs.

Destination Image Transformation: The Safety Paradigm

The findings also provide important insights into the evolution of destination image. The significant effect of destination characteristics confirms that safety perception has become a central determinant of destination attractiveness.

This supports the argument that health security has transitioned from a basic expectation to a core cognitive attribute. In the post-pandemic context, destinations are evaluated primarily based on their ability to provide a safe environment.

This transformation has important implications for destination marketing. Traditional promotional strategies focusing on attractions and experiences must be complemented by clear communication of safety measures and health protocols.

The Role of Ethical Consumption in Tourism Demand

The strongest effect observed in the model – perceived tourism impacts – highlights the growing importance of ethical consumption in shaping travel behaviour. During the pandemic, tourism was widely recognised as a vulnerable sector, leading to increased awareness of its socio-economic importance.

This awareness has translated into behavioural change, with individuals choosing to travel domestically as a way of supporting local businesses and communities. This form of consumption reflects a broader shift toward sustainability and social responsibility in tourism.

The findings suggest that ethical considerations can serve as a powerful motivator, even in the presence of risk. This challenges traditional economic models of tourism

demand, which tend to focus on price and utility, by incorporating social and moral dimensions.

Synthesis of Findings

Overall, the results of this study reveal a complex interplay between risk perception, behavioural adaptation, destination characteristics, and socio-economic motivations. Domestic tourism demand during the pandemic is not driven by a single factor but emerges from the interaction of multiple variables.

The findings demonstrate that domestic tourism acts as a structural resilience mechanism, while risk perception modifies rather than eliminates demand. In addition, safety perception emerges as a critical determinant of destination image, and ethical consumption plays a significant role in shaping travel behaviour.

These insights provide a comprehensive understanding of domestic tourism demand in crisis contexts and contribute to the advancement of tourism theory.

Conclusion and Implications

Conclusion

This study set out to investigate the determinants of domestic tourism demand in Vietnam during the post-pandemic recovery period, with a particular focus on how travel behaviour adapts under conditions of uncertainty. By integrating Tourism System Theory, Destination Image Theory, the Push-Pull framework, and Protection Motivation Theory, the research developed and empirically tested an Adaptive Substitution Model using Structural Equation Modelling (SEM).

The findings provide strong evidence that domestic tourism plays a critical role in sustaining tourism systems during periods of external disruption. Specifically, the results demonstrate that perceived tourism impacts, tourist characteristics, destination characteristics, and risk perception all significantly influence domestic tourism demand. Among these factors, perceived tourism impacts emerged as the most influential predictor, highlighting the importance of socio-economic awareness and ethical consumption in shaping travel behaviour.

A key contribution of this study lies in its identification of the **risk-demand paradox**, whereby domestic tourism demand persists despite the presence of perceived health risks. This paradox is explained through behavioural adaptation, as travellers adopt coping strategies to mitigate risk while maintaining their desire for mobility. Rather than eliminating demand, risk perception alters the form and characteristics of travel behaviour.

The study also confirms the transformation of destination image in the post-pandemic context. Safety perception has evolved into a central cognitive attribute, functioning as a gatekeeper variable that determines destination attractiveness. Destinations that successfully communicate safety and hygiene measures are more likely to attract tourists, even in the presence of ongoing health concerns.

Furthermore, the research advances Tourism System Theory by introducing the concept of **structural contraction**, whereby tourism systems internalise external shocks through domestic demand substitution. This process enables the system to maintain functionality despite the collapse of international mobility, reinforcing the role of domestic tourism as a core component of resilience.

Overall, the findings highlight the complex interplay between psychological, behavioural, and socio-economic factors in shaping tourism demand under crisis conditions. Domestic tourism is not merely a temporary substitute for international travel but represents a fundamental pillar of tourism system stability and long-term sustainability.

Theoretical Implications

This study makes several important contributions to the theoretical literature on tourism.

First, it extends Tourism System Theory by demonstrating that tourism systems are not static but adaptive. The concept of structural contraction provides a new perspective on how tourism systems respond to external shocks, emphasising the role of domestic tourism in maintaining system continuity.

Second, the study advances Destination Image Theory by highlighting the emergence of safety perception as a dominant cognitive attribute. This finding suggests that traditional models of destination image must be updated to reflect the changing priorities of tourists in a post-pandemic world.

Third, the integration of Protection Motivation Theory into the tourism context provides new insights into travel behaviour under risk. The identification of the risk-demand paradox challenges the assumption that risk perception leads to travel avoidance, instead suggesting that individuals adapt their behaviour to manage risk.

Finally, the study contributes to the literature on sustainable and ethical tourism by demonstrating the importance of perceived tourism impacts as a driver of travel behaviour. This highlights the need to incorporate socio-economic and moral considerations into models of tourism demand.

Practical Implications

The findings of this study have important implications for policymakers and tourism industry stakeholders.

Implications for Policymakers

Policymakers should recognise domestic tourism as a strategic priority for long-term tourism development. The pandemic has demonstrated that reliance on international markets creates vulnerability, whereas a strong domestic market enhances resilience.

First, governments should institutionalise health and safety standards as a core component of tourism governance. Clear and consistent safety protocols can enhance traveller confidence and support demand recovery.

Second, effective communication strategies are essential for managing risk perception. Transparent and timely information about health conditions and travel regulations can reduce uncertainty and build trust among travellers.

Third, policymakers should continue to promote domestic tourism through targeted campaigns and incentives. Initiatives that encourage citizens to travel domestically can stimulate demand and support local economies.

Implications for Tourism Businesses

Tourism businesses must adapt to changing consumer preferences by prioritising safety and flexibility.

First, safety should be integrated into the core value proposition of tourism products. Businesses should actively communicate their hygiene measures and safety protocols to build trust with customers.

Second, product diversification is essential to meet evolving demand. Short-duration trips, nature-based tourism, and low-density experiences are likely to remain popular in the post-pandemic period.

Third, flexible booking policies can reduce perceived risk and encourage travel. Allowing cancellations or changes without penalty can increase customer confidence and convert travel intentions into actual bookings.

Limitations and Future Research

Despite its contributions, this study has several limitations.

First, the use of a cross-sectional research design limits the ability to capture changes in travel behaviour over time. Future research should adopt longitudinal approaches to examine how tourism demand evolves in the post-pandemic period.

Second, the sampling method, which relied on online distribution, resulted in a sample that is skewed toward younger and more digitally active respondents. Future studies should aim to include a more diverse demographic profile to enhance generalisability.

Third, the study focuses on Vietnam as a single-country context. Comparative research across different countries or regions would provide a broader understanding of tourism resilience and allow for cross-cultural analysis.

Finally, future research should explore additional variables, such as digital transformation and technological adoption, which may play an increasingly important role in shaping tourism demand.

Final Remarks

The COVID-19 pandemic has fundamentally reshaped the global tourism landscape, highlighting both the vulnerabilities and adaptive capacities of tourism systems. The unprecedented disruption to international mobility exposed the structural dependence of many destinations on external markets, thereby revealing critical weaknesses in tourism system configurations. At the same time, the crisis has also demonstrated the capacity of

tourism systems to adapt through internal reconfiguration. This study provides empirical evidence that domestic tourism serves as a critical mechanism for resilience, enabling tourism systems to absorb shocks, sustain economic activity, and maintain functionality under adverse conditions.

As the tourism industry moves toward recovery, the insights from this research underscore the importance of flexibility, adaptability, and strategic planning in managing future uncertainties. In particular, the findings highlight the need for policymakers and industry stakeholders to prioritise the development of domestic tourism markets as a long-term resilience strategy rather than a temporary response to crisis. By understanding the determinants of domestic tourism demand and the mechanisms underlying behavioural adaptation, stakeholders can design more targeted policies and products that align with evolving consumer preferences. This includes enhancing safety communication, promoting sustainable and nature-based tourism, and supporting local economic development through responsible travel practices. Ultimately, these efforts contribute to building a more balanced, inclusive, and resilient tourism system capable of withstanding future global disruptions.

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SHIFTING PRIORITIES IN POST-COVID TOURISM: BEHAVIOURAL DYNAMICS IN FRENCH-SPEAKING SWITZERLAND

Abstract: This study explores how the COVID-19 pandemic has reshaped tourism behaviours in French-speaking Switzerland. While previous research has focused on short-term impacts, little is known about behavioural adjustments when restrictions were lifted. To address this gap, we conducted 54 semi-structured interviews in 2022 to examine travel intentions, destination choices, and the role of environmental considerations. Four key dynamics emerged: Safety had become a decisive factor in destination choice, particularly for long-haul travel. Most respondents expressed a strong desire to return to pre-pandemic travel patterns, with limited willingness to adopt lasting changes. Environmental and sustainability concerns temporarily lost prominence, overshadowed by health anxiety. Finally, renewed interest in domestic tourism was tempered by high costs. These findings show how overlapping crises shape tourism behaviour and highlight the challenges of sustaining environmental priorities in future tourism strategies.

Keywords: COVID-19, tourism, crisis, destination choice

ZMIANA PRIORYTETÓW W TURYSTYCE PO PANDEMII COVID-19: DYNAMIKA ZACHOWAŃ W FRANCUSKOJĘZYCZNEJ CZĘŚCI SZWAJCARII

Streszczenie (abstrakt): Niniejsze badanie analizuje, w jaki sposób pandemia COVID-19 wpłynęła na zmianę zachowań turystycznych we francuskojęzycznej części Szwajcarii. Podczas gdy wcześniejsze badania koncentrowały się na skutkach

krótkoterminowych, niewiele wiadomo na temat dostosowań w zakresie zachowań po zniesieniu ograniczeń. W celu uzupełnienia tej luki przeprowadziliśmy w 2022 roku 54 częściowo ustrukturyzowane wywiady, aby zbadać zamiary dotyczące podróżowania, wybór destynacji oraz znaczenie kwestii środowiskowych. Wyłoniły się cztery kluczowe tendencje. Bezpieczeństwo stało się decydującym czynnikiem przy wyborze destynacji, szczególnie w przypadku podróży na duże odległości. Większość respondentów wyrażała silne pragnienie powrotu do sposobów podróżowania sprzed pandemii, wykazując niewielką gotowość do wprowadzania trwałych zmian. Kwestie środowiskowe i związane ze zrównoważonym rozwojem tymczasowo straciły na znaczeniu, przyćmione przez obawy dotyczące zdrowia. Wreszcie, ponowne zainteresowanie turystyką krajową było ograniczane przez wysokie koszty. Wyniki te pokazują, w jaki sposób nakładające się na siebie kryzysy kształtują zachowania turystyczne, a także wskazują na wyzwania związane z utrzymaniem priorytetowego znaczenia kwestii środowiskowych w przyszłych strategiach rozwoju turystyki.

Słowa kluczowe: COVID-19, turystyka, kryzys, wybór destynacji

Context and literature

Tourism has long been recognised as particularly vulnerable to disruptive events, and the COVID-19 outbreak represents one of the most severe crises the industry has faced in the 21st century. Several studies have examined the pandemic's consequences for tourism (Ertaş & Kırlar-Can, 2022; Teeroovengadum et al., 2021; Chebli & Ben Said, 2020; Wen et al., 2020). Although the field has demonstrated considerable resilience, this should not be interpreted as evidence that tourists' choices and behaviours returned to pre-pandemic patterns unchanged. Against this backdrop, the present paper reports the findings of an exploratory qualitative study conducted in the second quarter of 2022 among adults residing in French-speaking Switzerland. The objective was to examine their travel perceptions and behaviours as international mobility restrictions were gradually being relaxed. During the initial phase of the pandemic, health and safety were the primary, often exclusive, determinants of travel decisions. This emphasis aligns with earlier research highlighting infectious diseases as a major deterrent to destination choice (Page, 2009). Destinations perceived as having high infection rates typically experienced declines in tourist arrivals. Effective crisis management, a robust medical infrastructure (Bhati et al., 2020), and supportive government policies were crucial to rebuilding tourists' sense of security and encouraging a return to travel. Studies also show that travellers' willingness and ability to resume travel varied by past experience, age, and gender (Ertaş & Kırlar-Can, 2022; Turnšek et al., 2020). For example, younger and more experienced male travellers were generally quicker to resume travel, partly because they perceived lower risk. Domestic tourism played a key role in mitigating the pandemic's impact, as new services such as pre-arranged visits and online booking systems were introduced to reduce queues and crowding (Sánchez-Cañizares, 2021). Many individuals opted for local trips because of border closures or because shorter travel distances increased the likelihood of a safe, quick return home amid sudden disruptions (Viana-Lora, Domènech, & Gutiérrez, 2021). Beyond destination choice, the pandemic also reshaped tourism consumption patterns. Aldao et al. (2022) observed that individuals increasingly sought serenity and relaxation during the crisis, though this trend may not persist long term. While popular

destinations were expected to regain traction, some tourists developed enduring pandemic-related habits, such as avoiding crowded locations (Ramos et al., 2021). Price was also identified as a key driver of tourism recovery (Aldao et al., 2022; Chebli & Ben Said, 2020). Travellers were generally reluctant to pay additional costs to enforce sanitary protocols, perceiving adherence to such measures as a personal responsibility (Sánchez-Cañizares et al., 2021).

Another body of literature has focused on the pandemic's implications for sustainability. COVID-19 profoundly affected efforts toward the Sustainable Development Goals (SDGs; Martín-Blanco et al., 2021) in every country. It undermined governments' capacity to achieve these objectives, most notably poverty reduction (Yuan et al., 2023), and reversed several public health gains, thereby increasing the number of people living in extreme poverty (Mejia, Hotez & Bottazzi, 2020). Developing countries were disproportionately affected compared to developed economies (Wang & Huang, 2021). As Albreth (2023) notes, the pandemic intensified existing challenges, created new ones, and brought unresolved problems into sharper relief. While previous research has examined travellers' risk perceptions and behavioural adaptations during the pandemic, few studies explored how these patterns evolved once restrictions were lifted, particularly in European contexts with strong sustainability agendas. By focusing on French-speaking Switzerland, this study contributes to the literature on post-crisis tourism behaviour by (1) documenting how individuals re-prioritised concerns in a polycrisis setting, (2) examining the persistence (or lack) of behavioural changes once immediate threats receded, and (3) highlighting the implications for sustainability and domestic tourism strategies.

Conceptual framework

Building on the literature reviewed above, this study approaches post-pandemic tourism behaviour as a process of reprioritisation rather than a lasting behavioural change: The COVID-19 crisis introduced an immediate and highly salient concern (health and safety) into travel decision-making. At the same time, travellers simultaneously faced established preferences, environmental concerns, and a desire to return to normality. Consistent with the notion of a finite pool of worry or attention (Sisco et al., 2020; Marasco, Romano & Sotis, 2023), the framework we developed assumes that these concerns may compete for salience rather than independently determine behaviour. As immediate health risks gain prominence, other considerations, including sustainability, may temporarily lose influence in tourism choices. These shifting priorities may subsequently affect destination choice, willingness to modify established travel habits, and interest in domestic tourism. Contextual factors such as cost may also facilitate or constrain the persistence of these behavioural adjustments. Figure 1 summarises this conceptual framework.

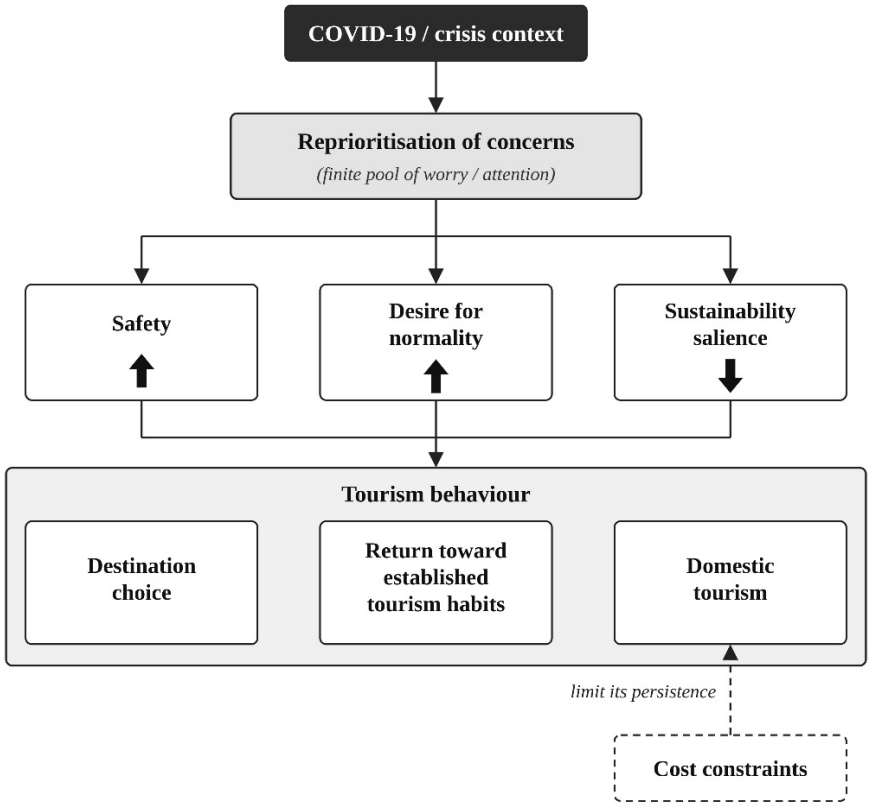


Figure 1. Conceptual framework of shifting priorities and tourism behavioural responses in a post-pandemic context

Methodology

This study draws on a qualitative exploratory design conducted during the second quarter of 2022 in the French-speaking region of Switzerland. At that time, Swiss residents were permitted to travel abroad, but their mobility remained subject to certain restrictions. In particular, proof of vaccination or immunity against COVID-19 was required for unrestricted travel, and travel beyond Europe remained complicated due to higher infection rates.

We conducted 54 semi-structured interviews to explore how the COVID-19 crisis affected individuals' tourism-related behaviours and decision-making processes. We chose a qualitative approach to capture travellers' nuanced and evolving perceptions in a post-crisis context. This methodology is particularly suited to identifying emergent behavioural patterns and underlying rationales without imposing predefined analytical categories. All interviews were recorded, transcribed verbatim, and analysed in NVivo. We conducted an inductive thematic analysis in several stages. Initial open coding identified key ideas and recurring motifs. Axial coding then linked categories and synthesised broader themes across interviews. This iterative analytical process enabled the derivation of a thematic structure grounded in participants' narratives, thereby enhancing the analysis's internal validity and transparency. The interviews began with a brief introductory question designed to ease participants into the discussion: "Have you recently taken advantage of

a weekend to do a tourist activity or holiday?" The conversation then followed a structured interview guide (Table 1) covering participants' past and intended destinations, motivations, evolving preferences since the pandemic, attitudes toward domestic tourism, environmental considerations, and any additional reflections participants wished to share. After a brief warm-up to introduce the topic (e.g., "Have you recently taken advantage of a weekend to do a tourist activity or holiday?"), we asked several questions; the questions in Table 1 served as the basis for the interview guide.

Table 1: Interview guide

- Where did you go on your last holiday? Why did you choose this destination?
- Where are you thinking of going on your next holiday? Why would you choose this destination?
- Are your choices of destination the same as they were before COVID as they are now? If so, what has changed? Why or why not? What are you looking for that is different from what you have? If not, why not?
- What about local tourism? Do you plan to take advantage of tourism opportunities in Switzerland more often? Why or why not? What do you like or dislike about local tourism (in Switzerland)?
- Is our natural environment likely to suffer from the influx of local visitors? If so, what are the consequences? If not, what makes you certain or convinced that this won't happen?
- Do climate considerations influence your holiday/leisure decisions? If so, how? If not, why not?
- Is there anything you'd like to add that we haven't covered yet? Is there anything you'd like to tell us about that's particularly important to you?

As with most qualitative research, we did not select respondents randomly. Instead, we used purposive sampling to ensure the sample reflected a broad cross-section of the population in terms of gender, age, and professional background, in proportions broadly aligned with the general population. Particular attention was given to including participants who had either personally experienced COVID-19 or had close relatives who had been affected.

The final sample of 54 interviewees consisted of 55% men and 45% women. One-third (33%) were under 35, 37% were between 35 and 44, and 30% were over 44. In terms of household composition, 34% lived alone and 66% with a partner, while 65% had children. Regarding employment, 39% worked in public administration and 61% in the private sector. Notably, 70 % of respondents had either contracted COVID-19 themselves or knew someone close to them who had been affected. The relatively large number of interviews (N = 54) exceeds the commonly accepted minimum thresholds for qualitative

studies (Hague, 2022), ensuring both diversity of perspectives and sufficient analytical depth to identify consistent patterns.

Synthesis of results

The analysis of the 54 interviews reveals four interrelated dynamics that shed light on how the COVID-19 crisis has reshaped tourism behaviours among residents of French-speaking Switzerland. These dynamics include the growing salience of safety in travel choices, limited willingness to adopt lasting behavioural changes, the temporary downgrading of environmental concerns, and renewed (but cost-constrained) interest in domestic tourism.

Safety as a Salient Attribute in Tourism Choices

The pandemic has considerably heightened travellers' sensitivity to health-related risks, especially during long-distance travel. Interviewees repeatedly mentioned fears of being stranded abroad, uncertainty about the availability and quality of healthcare, and concerns about medical repatriation. These concerns were particularly pronounced among older respondents and families with young children. As one participant explained, "We are still apprehensive about going on holiday because of the problems that can arise if we have health problems there. In some countries, the quality of health care is not optimal, and how to organise repatriation?" (man, 64+ years old). This emphasis on safety aligns with a growing body of research documenting the decisive role of health, hygiene, and medical infrastructure in post-pandemic destination choice (Teeroovengadum et al., 2021; Chebli & Ben Said, 2020; Gajić et al., 2021; Wen et al., 2020). Wen et al. (2020), in particular, associate higher cancellation rates with destinations lacking robust health systems. The findings also echo Aldao et al. (2022), who underline the need for tourism operators to adapt flexibly to uncertainty and mobility restrictions. One notable consequence of this heightened risk awareness has been a marked increase in travel insurance purchases (Zenker & Kock, 2020; Chebli & Ben Said, 2020). This shift suggests opportunities for the industry to develop tailored insurance packages and strengthen communication strategies, thereby rebuilding travellers' confidence in long-haul destinations.

Limited Willingness to Alter Tourism Behaviours

A second key finding is widespread fatigue from prolonged restrictions, coupled with a strong desire to return to pre-pandemic tourism. Most respondents reported little willingness to change their destination choices or modes of transport, framing the pandemic as a period of forced sacrifice and expressing reluctance to make additional efforts afterwards. Typical statements included: "Don't ask me to do more efforts, we have already done so many" (woman, 35-44 years old) and "We'll resume our travel habits as soon as the crisis is over" (man, 55-64 years old). This behavioural inertia aligns with Aldao et al. (2022), who argue that initial uncertainty and apprehension often give way to frustration, leading travellers to deprioritise precautionary measures once fatigue thresholds are reached. A modest but notable shift emerged in short-haul city trips, where some respondents preferred car travel to air travel (driven more by convenience and cost

than by environmental motives), echoing findings on how external risks shape transport mode choices. Overall, these results suggest the pandemic did not fundamentally reconfigure tourism behaviours; rather, it caused a temporary pause, followed by a rapid return to established practices once restrictions were lifted. Altogether, these dynamics reflect adaptive coping strategies in which travellers actively seek to compensate for lost experiences by increasing travel intensity (Meenakshi et al., 2023).

Shifting Attention Away from Environmental and Sustainability Concerns

The interviews also reveal a clear decline in the salience of environmental considerations when making travel decisions. While respondents remained generally aware of climate change and continued to practice sustainable practices in their everyday lives, these concerns rarely shaped their tourism choices. Many interviewees explicitly assigned primary responsibility for environmental action to companies and industries rather than individuals: “Businesses should make the biggest efforts since they are the real polluters” (woman, 35-44 years old). None of the respondents reported increasing their personal environmental efforts during or after the pandemic, often citing the sacrifices already made during the crisis as justification. Respondents often perceived environmental issues as more closely tied to daily mobility and car use than to leisure travel. This resonates with Touring Club Suisse (2023), which notes historically low levels of public support in Switzerland for climate-friendly travel, as well as with Sisco et al. (2020) and Kenny (2022), who document how climate concerns can remain constant in the abstract but lose priority in practice. The temporary overshadowing of environmental issues by the health crisis illustrates the “finite pool of worry” dynamics described in previous works (Ladi & Tsarouhas, 2020; Vince, 2023; Marasco, Romano & Sotis, 2023): when multiple anxieties compete, more immediate threats tend to dominate public attention. This displacement effect raises important questions about the resilience of sustainability priorities in polycrisis contexts.

Opportunities and Constraints for Domestic Tourism

Finally, the crisis spurred renewed interest in domestic tourism. Border closures and persistent uncertainties prompted many respondents to explore Swiss destinations that they had previously overlooked. As one participant put it, “this crisis enabled us to discover or rediscover destinations in Switzerland that we hadn't been to for a long time” (woman, 35-44 years old, three children). Similar trends have been documented elsewhere (Lee, Yang & Chung, 2021; Mirzaei, Sadin & Pedram, 2021; Viana-Lora, Domènech & Gutiérrez, 2021). Respondents praised the quality and diversity of Swiss tourism offerings, describing “magnificent places” rediscovered during the pandemic (man, 25-34 years old). However, respondents consistently cited the high cost of domestic travel as a barrier to sustaining this trend, even among those with access to second homes. Comments such as “the problem with travelling in Switzerland is that it's far too expensive” were widespread across demographic groups. Comparable challenges have been observed in other European contexts, including the Netherlands, Latvia, and Cyprus (Aldao et al., 2022). This suggests

a clear opportunity for tourism operators to design short-stay packages tailored to Swiss residents, potentially making domestic tourism both more accessible and more resilient in the long term. Table 2 summarises the main takeaways from the interviews.

Some demographic nuances emerged across the interviews. Safety concerns appeared particularly salient among older respondents and families with young children, especially regarding healthcare availability and repatriation, while concerns about the high cost of domestic tourism were expressed across demographic groups. Beyond these observations, the qualitative material did not reveal sufficiently clear demographic patterns to support further subgroup interpretation.

Table 2: Summary of the main takeaways from the interviews

- Tourists remain attached to their habits, showing little willingness to make significant changes to their travel behaviour.
- Environmental and sustainability concerns are losing traction, as public attention shifts toward other pressing global challenges.
- Safety has become a more decisive factor, shaping destination choices and travel plans.
- Switzerland has a unique opportunity to reposition itself, by promoting affordable, high-quality local tourism experiences.

Taken together, these findings show both common and context-specific patterns, such as the heightened importance of safety, the return toward established travel habits, and the renewed interest in domestic tourism, which broadly echo observations reported in other countries. The Swiss case nevertheless highlights a notable tension between continued awareness of environmental issues and their limited influence on actual tourism decisions when more immediate health and practical concerns emerge. In addition, while Switzerland offers attractive opportunities for domestic tourism, its high cost appears to constrain the persistence of this shift.

Conclusion

In the aftermath of COVID-19, tourism's resilience depended not only on crisis management measures but also on travellers' evolving perceptions of risk and behavioural priorities (Ritchie & Jiang, 2019). This evolution has been widely documented across contexts (Song et al., 2024), confirming that shifts in motivations and behavioural priorities persisted well beyond the immediate crisis. This exploratory study among residents of French-speaking Switzerland identifies four main post-pandemic behavioural dynamics: (1) the heightened salience of safety considerations in travel decisions, particularly for faraway destinations; (2) a widespread reluctance to modify established tourism habits; (3) a temporary de-prioritisation of environmental and sustainability

concerns in the face of more immediate anxieties; and (4) renewed, but cost-constrained, interest in domestic tourism.

These findings carry several managerial implications. First, the growing weight of safety as a decision criterion underscores the need for tourism operators to provide credible, transparent information on risk management, including health infrastructure, crisis response protocols, and tailored insurance solutions. Such measures can help restore confidence and facilitate long-distance travel in contexts where uncertainty persists. Second, the strong desire to "return to normal" suggests tourism offerings should minimise perceived friction while maintaining appropriate safeguards, balancing reassurance with convenience. Third, the reduced prominence of sustainability in tourism choices calls for innovative approaches to integrate environmental considerations without exacerbating the sense of constraint that many respondents associated with the crisis. This could involve designing environmentally responsible products that emphasise added value rather than behavioural sacrifice. In practice, tourism operators could make lower-impact options easier to choose by integrating them into standard travel packages, incentivising lower-carbon alternatives, and linking sustainability to immediate benefits such as convenience, affordability, and safety. This may be particularly important during crisis periods, when travellers appear less receptive to measures perceived as requiring additional sacrifice.

The findings also have important policy implications. The temporary displacement of environmental priorities by health concerns underscores the risk that sustainability objectives may systematically be downgraded whenever acute crises arise. Consistent with the finite pool of worry or attention perspective (Sisco et al., 2020; Marasco, Romano & Sotis, 2023), more immediate concerns may capture attention and temporarily reduce the salience of longer-term objectives such as sustainable development. To counter this tendency, public authorities may need to invest in institutional frameworks and incentive structures that keep sustainability salient and feasible even in times of crisis. This could include maintaining incentives for lower-impact mobility and ensuring that sustainability criteria remain embedded in tourism support measures introduced during crisis periods, even when more immediate priorities emerge. This involves both regulatory instruments and communication strategies that clarify how responsibilities are distributed among citizens, firms, and the state – an issue already documented in the Swiss context (Dubosson, Fragnière & Rochat, 2020).

Finally, the study contributes to the emerging literature on behavioural adaptation under polycrisis conditions. It suggests that post-crisis tourism behaviour is not merely a linear recovery to pre-crisis norms, but rather a selective reconfiguration shaped by competing priorities and resource constraints. Future research should further investigate how citizens adapt to overlapping crises and identify policy levers to prevent the routine downgrading of sustainability objectives when short-term threats dominate. Longitudinal qualitative designs, complemented by experimental or other behavioural methods, would be particularly valuable to disentangle the roles of adaptation, fatigue, and perceived efficacy in shaping tourism behaviours over time. In sum, while the sector's resilience is evident, its long-term trajectory will hinge on market actors and public authorities' ability

to manage safety credibly, align tourism offerings with travellers' desire for normalcy, and maintain environmental priorities even when attention shifts toward more immediate constraints (Ritchie & Jiang, 2019).

Declaration

The authors declare that they have used Artificial Intelligence Generated Content (AIGC) to proofread and edit the manuscript for the initial submission and the first revision. They used ChatGPT, unitQ, and Grammarly to fine-tune the quality of their writing. They also used Claude to generate the conceptual framework figure, building on the authors' detailed instructions; AI contributed mainly to the figure design, not the content or structure.

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CHAPTER IV

STATE AUTONOMY AND RESILIENCE

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DIGITAL AUTONOMY THROUGH LEVERAGE: VIETNAM AND THE LOGIC OF POWER IN DEPENDENT DIGITAL SYSTEMS

Abstract: In recent years, international competition has shifted dramatically to the digital space. This paper argues that in highly dependent digital systems, autonomy should not be understood as "decoupling from dependence", but rather redefined as the ability to selectively exploit leverage points – key positions in the network where a limited level of intervention can produce asymmetrical effects. The proposed analytical framework includes a chain of mechanisms: structural dependence → power concentration → leverage → autonomy effect. This paper employs a qualitative approach based on mechanism-based analysis combined with a single case study of Vietnam. The primary method used is process-tracing, drawing on secondary data from Vietnamese policy documents (2023-2026), international reports, and academic literature. The article also conducts a small-N comparison between the three digital autonomy models of the EU, China, and Vietnam. In the case of Vietnam, the article shows that, despite not controlling core technologies, Vietnam has developed various forms of leverage, particularly domestic regulatory leverage over data and platforms, along with the potential for emerging structural leverage in digital infrastructure. The analysis also points out limitations and risks, most notably the risk of falling into a "digital entrapment" in the context of US-China competition. The research contributes to the adjustment of traditional understandings of power and autonomy in international relations: from the logic of total control to the logic of position and the ability to intervene selectively.

Keywords: digital autonomy, leverage, structural dependence, network power, Vietnam

CYFROWA AUTONOMIA POPRZEZ WYKORZYSTANIE MECHANIZMU DŹWIGNI FINANSOWEJ: WIETNAM I LOGIKA WŁADZY W ZALEŻNYCH SYSTEMACH CYFROWYCH

Streszczenie (abstrakt): W ostatnich latach rywalizacja międzynarodowa w znacznym stopniu przeniosła się do sfery cyfrowej. W niniejszym artykule postawiono tezę, że w przypadku silnie powiązanych systemów cyfrowych autonomii nie należy rozumieć jako „uwolnienia się od zależności", lecz raczej jako zdolność do selektywnego wykorzystywania tzw. punktów dźwigni (ang. *leverage points*) – kluczowych pozycji w sieci, w których nawet ograniczona interwencja może przynieść asymetryczne skutki. Proponowane ramy analityczne obejmują ciąg mechanizmów: zależność strukturalna →

koncentracja władzy → dźwignia finansowa → efekt autonomii. W pracy zastosowano podejście jakościowe, łączące analizę opartą na mechanizmach ze studium przypadku Wietnamu. Główną metodą badawczą jest śledzenie procesów (ang. *process-tracing*), wykorzystujące dane wtórne pochodzące z wietnamskich dokumentów programowych (z lat 2023-2026), raportów międzynarodowych oraz literatury przedmiotu. Artykuł zawiera również analizę porównawczą (w układzie małej liczby przypadków) trzech modeli autonomii cyfrowej: UE, Chin i Wietnamu. W przypadku Wietnamu wykazano, że mimo braku kontroli nad kluczowymi technologiami, kraj ten wypracował różne formy dźwigni – w szczególności krajową dźwignię regulacyjną w zakresie danych i platform, a także potencjał do uzyskania dźwigni strukturalnej w obszarze infrastruktury cyfrowej. Analiza wskazuje również na ograniczenia i ryzyka, w tym przede wszystkim na niebezpieczeństwo popadnięcia w stan „cyfrowej pułapki” w kontekście rywalizacji między USA a Chinami. Badanie to przyczynia się do rewizji tradycyjnego rozumienia władzy i autonomii w stosunkach międzynarodowych: przejścia od logiki całkowitej kontroli do logiki opartej na pozycji oraz zdolności do selektywnej interwencji.

Słowa kluczowe: autonomia cyfrowa, dźwignia, zależność strukturalna, siła sieciowa, Wietnam

Introduction

In recent years, international competition has undergone a coherent shift. It is no longer confined to the traditional geopolitical space, but is increasingly moving towards the digital space. This change is disrupting our understanding of national power and autonomy. Technology, data, and digital infrastructure are no longer merely tools to support economic development; they have become key elements of strategic capability. Recent studies show that power in the digital world lies not only in how much is produced or how much territory is controlled, but also in the ability to control the flow of data, platforms, and connectivity architectures (Farrell & Newman, 2019; Kahl & Wright, 2021). Therefore, "digital autonomy" or “digital sovereignty” is rapidly becoming a crucial policy objective. Both technological superpowers and many developing countries are pursuing it (European Commission, 2020; UNCTAD, 2021).

In this context, we also recognize a considerable paradox. The global digital system is increasingly interdependent, yet many policy discourses implicitly assume that autonomy can only be achieved through unilateral control, the more the better. This way of thinking inadvertently equates autonomy with absolute control. It overlooks the crucial fact that in an interdependent environment, true power lies not in controlling everything, but in the ability to shape those interdependent relationships in a way that benefits oneself. Therefore, we argue that strategic digital autonomy should not be understood as “decoupling from dependence.” It must be redefined as the ability tohh restructure and leverage those very dependencies. This paradox also reveals the limitations of current theoretical frameworks. On the one hand, studies on “digital sovereignty” often equate autonomy with control over data, infrastructure, and platforms within one's own territory (Floridi, 2020; Pohle & Thiel, 2020). On the other hand, works on interdependence and “weaponized dependence” emphasize that the deeper the integration, the more susceptible

one becomes to coercion, thereby narrowing autonomy (Farrell & Newman, 2019, Drezner et al, 2021).

This paper does not aspire to build a new macroeconomic theory. We only attempt to develop an intermediate analytical framework that clarifies the mechanisms by which digital autonomy can emerge even under conditions of dependence. Specifically, the paper accomplishes three things: First, redefining digital autonomy as the result of exploiting a strategic position within a dependent structure, rather than viewing it as a state of complete control. Second, proposing a conditional analytical mechanism: from structural dependence → power concentration → leverage → autonomy effect. Third, contributing to the research stream of digital political economy by showing that countries outside the center still have room for action, rather than being completely bound by dependence. We chose the case of Vietnam not to describe the entirety of Vietnam's digital policy, but to illustrate and test this analytical framework in a real-world context. Vietnam is a deeply integrated economy, heavily reliant on foreign technology and platforms, yet it maintains the ability to regulate in several key areas. This is a prime example of how digital autonomy can be built despite limited overall system control capacity (World Bank, 2021). Of course, this level of autonomy is only partial and highly dependent on structural conditions, rather than being stable or comprehensive.

The next parts of the paper are organized as follows: Part II presents an overview of the research and clarifies the theoretical gap. Part III constructs an analytical framework on autonomy based on the leverage mechanism in dependent systems. Part IV applies this framework to the case of Vietnam through process analysis. Part V discusses theoretical implications and compares it with other models. Finally, Part VI provides conclusions and some suggestions for further research.

1. Research Methodology

This paper uses a qualitative approach based on mechanism-based analysis combined with a case study. The primary method is process-tracing analysis within the Vietnamese context, aiming to clarify the causal chain from structural dependence to the formation and operation of leverage points, and then to the autonomy effect. We rely mainly on high-quality secondary sources, including: Vietnamese policy and legal documents from 2023 to early 2026, reports from international organizations (World Bank, OECD, UNCTAD, ASEAN), academic literature on network power and digital political economy, as well as industry reports on digital infrastructure and data centers. For comparison and generalization, this article uses a small-N comparison between three models: EU (open strategic autonomy), China (system control), and Vietnam (selective leverage). This comparison helps to highlight the structural conditions and limitations of the leverage model for middle powers. In terms of data, we prioritize official and most recent sources (as of April 2026) to ensure timeliness. However, due to the sensitive and rapidly changing nature of digital policies, some data on specific infrastructure and projects are for reference only and may continue to fluctuate. This approach does not aim to quantitatively test hypotheses, but focuses on clarifying the mechanisms and strategic logic, thereby

contributing to the development of a mid-level analytical framework on digital autonomy under conditions of dependence.

2. Overview of research and gaps

The concept of "digital autonomy" did not emerge spontaneously. It is formed from three main lines of research in international relations and political economy. First, there is the study of digital sovereignty and regulatory power. Second, there is the study of interdependence within global networks. Third, there is the study of the power of technology platforms and digital structures. Although each line views a different aspect, they all share the understanding that power today is closely tied to controlling data, infrastructure, and connections (Grewal, 2008; van Dijck et al., 2018).

The first approach is developing most strongly in Europe. In the context of competition with the US and China, the European Union is trying to reassert its position by controlling data and reducing dependence on foreign tech giants. The European Data Strategy and the Digital Services Act and Digital Markets Act clearly demonstrate this (European Commission, 2020, 2022). They want to spread their standards globally through the “Brussels effect” (Bradford, 2020). Recently, the EU has started talking more about “strategic autonomy” and “risk reduction” instead of absolute control. But deep down, their thinking still revolves around “control as much as possible”. This approach suits the EU, but is difficult to apply to countries without large markets and strong regulatory capacity.

The second approach views the issue from a network perspective. Researchers like Farrell and Newman (2019) argue that real power lies in "chokepoints" within the financial, data, and supply chain systems. Whoever controls these points can monitor, interfere with, and even "weaponize" the dependence of others. Later studies expanded this idea to the fields of security and data. However, most analyses still focus on the superpowers sitting at the center. Few question how countries that don't control these chokepoints can survive and operate within that system. Dependence is therefore often seen as a negative thing, as a source of weakness, rather than as a condition for creating power.

The third approach focuses on the power of platforms. Srnicek (2017) speaks of “platform capitalism,” where tech giants use data and network effects to dominate. Van Dijck et al. (2018) describe a “platform society” where platforms not only connect people but also shape how we interact, buy, and live. Some even call it “data colonialism” (Couldry & Mejias, 2019), emphasizing the inequality in global data exploitation. These studies paint a fairly clear picture of how power is concentrated. However, they stop at describing dominance. Few delve into the question of what countries without large platforms can do to intervene and gain an advantage.

Generally, all three research directions are valuable, but they are not truly interconnected. One emphasizes control, another emphasizes network structures, and the third emphasizes the concentration of power at the grassroots level. A comprehensive perspective is lacking to explain how countries can be both heavily dependent and still act and create their own space. Some recent studies on ASEAN have begun to shed light on

this direction. They have found that countries in the region often choose a flexible approach: deep integration while retaining selective regulatory control in certain key areas. This is a kind of "strategic adaptation in dependence" rather than pursuing absolute autonomy (ASEAN, 2021; UNESCAP, 2022).

In Vietnam, most current research is still more descriptive of policy. It discusses digital transformation, the role of technology in economic growth, personal data protection, cross-border platform management, and how the government supports domestic businesses. These works provide a fairly complete picture of what Vietnam is doing (Nguyen Van Thao and Nguyen Manh Hung, 2024; Nguyen Trong Co, Ta Thanh Mai and Nguyen Thu Trang, 2025; Hoang Thi Hanh, 2026). However, from an academic and international political economy perspective, they remain quite fragmented. Few studies place Vietnam's case within the larger picture of digital power and autonomy. There is still no real explanation for why Vietnam behaves the way it does within a system on which it is heavily dependent. Compared to studies on ASEAN, Vietnam is similar in that it pursues a flexible approach between integration and control, but it also has its own unique characteristics, particularly in the relatively strong role of the state and its institutional intervention. It is this combination of regional typicality and unique features that makes us feel the need for a different analytical framework, one that goes beyond conventional policy descriptions.

From the above overview, the theoretical gap is quite clear. Most current research still assumes that autonomy can only be achieved through as much control as possible, and that dependence is always a limiting factor in action. What is missing is a perspective that explains how autonomy can emerge from within that very system of dependence. This gap is not just theoretical; it has significant practical implications for countries like Vietnam, where controlling the entire digital system is almost impossible. This article attempts to fill that gap by shifting the focus. Instead of asking "how much control is possible", we want to ask "where does control create a significant impact?" From this, digital autonomy is understood not as total control, but as the ability to grasp and exploit leverage points within the system – where a restrictive action can produce disproportionate effects. This approach does not deny dependence, but rather views it as a condition for the formation of that leverage. And perhaps that is a more realistic understanding of autonomy in today's digital world.

3. Theoretical framework: digital autonomy as a leverage mechanism in dependent systems

3.1. Shift your approach from "how much control" to "where control is exercised"

Most current views on digital autonomy stem from a very familiar assumption: the more control a nation has over data, infrastructure, and platforms, the greater its autonomy. This sounds reasonable. However, when applied to the reality of the global digital system, this assumption reveals a weakness. Power in the digital world is not evenly distributed. It is often concentrated in a few key positions within the network. Broad control, diluted

across many areas, is not necessarily strong. Conversely, controlling just a few key positions, however small, can have a significant impact (Grewal, 2008; Srnicek, 2017). Therefore, we believe we need to rephrase the question more clearly. It's not about "how much a nation controls," but rather "at what point in the system structure it controls".

This shift is not just a technical issue. It fundamentally changes how we understand autonomy. Autonomy is no longer about accumulating as many resources as possible, but about the ability to occupy and exploit positions that can create spillover effects. Most importantly, this perspective shows that autonomy does not disappear when dependence exists. It simply operates in a different way – by leveraging the very asymmetries within that system of dependence.

3.2. The nature of digital systems: dependence, asymmetry, and concentration of power

The global digital system has three core, interconnected characteristics. First, a very high degree of interdependence and a "locking" nature. Countries are deeply dependent on digital infrastructure, cross-border platforms, and data flows. Replacing or withdrawing from them is often very costly, both economically and strategically (Farrell & Newman, 2019; UNCTAD, 2021). Second, this interdependence is uneven. Some parties hold central positions – routing data, setting standards, or providing core services. From there, they have the ability to monitor and intervene without controlling everything. Third, power tends to be highly concentrated. Thanks to network effects and economies of scale, a few large platforms gradually dominate areas such as cloud computing, operating systems, or data (van Dijck et al., 2018; Srnicek, 2017). As a result, power is not scattered throughout the system, but concentrated in a few strategic points. These points have the potential to amplify impact far beyond the scope of direct control. And that is the foundation for the formation of leverage.

3.3. What is leverage?

We place the concept of "leverage" at the center of our analytical framework. This isn't just a metaphor but a concrete mechanism. Leverage here is simply understood as controlling only a small portion, but placing it in a position that is difficult to replace and has the potential for real intervention, allowing you to create a disproportionate influence on the entire system. It inherits the idea of "weaponizing dependence" from Farrell and Newman (2019), but we try to clarify the conditions for leverage to truly work. Specifically, three elements are needed:

- The position is difficult to replace (low substitutability),
- There is actionable access,
- And it creates a widespread ripple effect (system-wide impact).

Importantly, leverage is not something fixed. It doesn't automatically appear simply because of a desirable position. It only forms when that position is exploited in a context where others can hardly avoid or replace it. This perspective helps us shift from asking "who holds the power" to asking "how is power created?".

3.4. Distinguish from similar concepts

To avoid confusion, we also need to clarify that leverage is different from concepts often confused with it, such as chokepoint or network power. A chokepoint is a characteristic of the structure – a point where flow is blocked. But having a bottleneck doesn't necessarily mean having leverage if you don't know how or can't exploit it. Network power refers to how standards and connections force people to comply. It's an attribute of the system. Leverage, on the other hand, is how an entity uses its position to intervene. Digital sovereignty is often understood as a goal or state. Leverage, however, is a mechanism that explains how you can still achieve a degree of autonomy despite limited control. In short, leverage doesn't compete with the other concepts, but helps explain how power is activated in an environment of asymmetric dependence.

3.5. The causal mechanism of levers

From the above, we propose a four-step mechanism: dependence → concentration → leverage → autonomy effect. However, this mechanism is not a rigid linear sequence. It is a conditional mechanism. Structural dependence increases the likelihood of concentration points appearing, but it is not enough to create leverage. An irreplaceable element and the ability to intervene in practice are necessary for leverage to form. Only then can you intervene at key points to shape the behavior of others or adjust the flow of the system, thereby creating an autonomy effect. This mechanism also has a feedback loop. Exploiting leverage today can change the structure of dependence tomorrow. Therefore, autonomy here is not something achieved once and for all, but a dynamic process, constantly changing according to the system.

3.6. From concept to practical perspective

To make this framework applicable, we divide it into three levels of analysis. The first level is about leverage: looking at the degree of control over a position and the difficulty of replacing that position. Indicators such as network centrality, replacement costs, or the degree of dependence on other parties can be used. The second level is about implementation: through specific actions such as data regulation, standardization, or limiting platform behavior. The third level is about results: demonstrated through the ability to withstand external pressure and the ability to maintain its own policy space. This division helps avoid confusing tools with results – a common error in research on digital power.

In short, this theoretical framework shifts the understanding of digital autonomy from "control as much as possible" to "leveraging the right position can still create advantages". It shows that autonomy can be built even without controlling the entire system, as long as one knows how to leverage certain points of control. Of course, this mechanism is not always successful. If the position is easily replaceable or tightly controlled by others, then dependence can easily turn into a constraint instead of an advantage. Therefore, digital autonomy should be viewed as a conditional and ever-changing state, not something permanently stable. With this understanding, the following section will examine the case of

Vietnam – a country that does not control the entire digital system – and whether it can exploit these points of leverage to create strategic space for its own action.

4. The case of Vietnam: leverage in the context of structural dependence

4.1. Structural conditions: high interdependence, deep integration, but a position within the network

The case of Vietnam can only be properly analyzed within a structure that is both dependent on and deeply integrated with regional and global digital flows. At the core technology level, Vietnam has yet to master the most crucial links. Most critical issues such as advanced semiconductors, operating systems, large-scale cloud computing, and many key infrastructure layers remain beyond its control. Official documents openly state this. The Semiconductor Industry Development Strategy to 2030, with a vision to 2050, acknowledges that Vietnam must proceed step by step, initially focusing on design, packaging, testing, and human resource development, rather than leapfrogging to high-end fab technology. Resolution 57-NQ/TW of 2024 also frankly acknowledges the situation of "not yet mastering strategic technologies and core technologies" (Central Committee of the Communist Party of Vietnam, 2024; Prime Minister, 2024a). But dependence doesn't mean being left out of the game. Vietnam has deeply integrated into the electronic and digital value chain and is part of the regional production restructuring wave towards "China+1." The government is also promoting the development of domestic digital, data, and cloud computing infrastructure through the Digital Infrastructure Strategy 2024, the National Cloud Action Program 2025, the Data Law 2024, and decisions on the National Data Center (Prime Minister, 2024b; National Assembly, 2024; Government, 2023). This combination of high dependence and deep integration is a crucial condition mentioned in the theoretical framework. Vietnam cannot control the entire system, but it has the ability to access and intervene at some key intersection points. Herein, we also need to recognize that this structural condition does not automatically generate leverage. It only creates the potential for leverage if the dependence converges with three other factors: a relatively irreplaceable position, the actual intervention capacity of the state or domestic enterprise, and a sufficiently large impact on the behavior of other parties (Farrell & Newman, 2019). The following section will examine this.

4.2. Strategic logic does not pursue total control, but rather selectively intervenes at key points

On the surface, Vietnam's policies seem to be merely reactions to specific issues such as personal data protection, platform management, domestic cloud development, or cybersecurity. However, tracing these actions chronologically from 2023 to early 2026 reveals a gradually emerging strategic logic. Vietnam is not following China's path of systemic control, nor does it possess the capacity to transform domestic regulations into universal standards like the EU. Instead, Vietnam is building a selective control system focused on areas where the state or key businesses can increase their regulatory power, even while remaining dependent on others. This logic is demonstrated through a closely

linked series of documents: Resolution 175/NQ-CP on the National Data Center, Decision 142/QD-TTg on the National Data Strategy, the 2024 Data Law, Decree 165/2025 guiding the Data Law, the 2025 National Cloud Program, the 2025 Personal Data Protection Law, and Decree 356/2025 effective from January 1, 2026 (Government, 2023; Prime Minister, 2024c; National Assembly, 2024; Government, 2025a; National Assembly, 2025; Government, 2025b).

Certainly, not all regulatory tools create leverage. Many measures only create legal leverage within the territorial scope, meaning they force foreign actors to adjust in order to continue operating in Vietnam. Only when the intervention location has the potential to affect routing costs, latency, accessibility, or connection architecture beyond the border can we speak of structural leverage. This is the standard for examining the four areas below (Farrell & Newman, 2019; Grewal, 2008).

4.3. Testing leverage by sector

(1) Data: has legal leverage, but has not yet reached structural leverage

Vietnam started from a position of significant dependence on cross-border data processing platforms and infrastructure. Decree 13/2023 was the first step, but from 2025 onwards, the legal framework will be much stricter. The Data Law 2024 will take effect from July 1, 2025, the Personal Data Protection Law 2025 will be promulgated, and Decree 356/2025 will replace Decree 13 from January 1, 2026. Simultaneously, Decree 165/2025 requires many entities to synchronize data to the National Data Center, while Decision 1751/QD-TTg of 2025 further clarifies the strategy at this center (Government, 2023; National Assembly, 2024; National Assembly, 2025; Government, 2025a; Government, 2025b). These are no longer isolated actions, but a process of centralizing data regulation. However, these measures have not yet changed the global power landscape of hyperscalers or Big Tech. Nor have they turned Vietnam into a regional data "bottleneck". The main impact is the shrinking of the operating space for foreign platforms within Vietnam. Cloud and hosting providers must significantly adjust their storage, security, and compliance practices to remain in the market (LuatVietnam, 2024). This is a form of localized regulatory leverage. Vietnam has forced them to change their behavior to retain market share, but it has not yet created a ripple effect beyond its borders.

In short, in the data sector, the conditions of "dependence" and "ability to intervene" are present, but "systemic non-replaceability" is absent. Therefore, this is only localized regulatory leverage, not structural leverage.

(2) The fundamental regulations create pressure for compliance, but do not restructure the system

In the platform sector, Vietnam clearly can force cross-border companies to adjust their behavior domestically. The Cybersecurity Law, along with its guiding decrees and requirements regarding content, data, legal presence, and cooperation, has created real pressure. Major players like Meta, Google, and TikTok haven't retreated, choosing instead to comply to retain users and revenue.

However, this is still primarily a lever for behavior within the country's territory. Vietnam can influence how platforms operate within Vietnam, but it hasn't yet touched upon core algorithms, global technical standards, or platform architecture. There's no clear evidence that changes in Vietnam have spilled over to other markets. Therefore, this is more of a gatekeeping leverage, effective in internal operations, rather than a structural leverage.

(3) Digital infrastructure: the only sector with the potential for structural leverage

Unlike the two aforementioned sectors, digital infrastructure is where the conditions for leverage begin to converge more strongly. Policies clearly prioritize this through the 2024 Digital Infrastructure Strategy, the 2025 National Cloud Computing Program, and decisions regarding the National Data Center (Prime Minister, 2024b; Government, 2023). At the enterprise level, Viettel, FPT, and VNPT are investing heavily in data centers. Viettel is building the largest data center in the country, commissioning the Asia Direct Cable (ADC) submarine cable landing in Quy Nhon from April 2025, and collaborating with Singtel to deploy a new submarine cable connecting Vietnam and Singapore directly (Viettel, 2024, 2025a, 2025b). In terms of scale, the operational capacity of data centers by the end of 2025 is approximately 221 MW, while the pipeline under construction and planned exceeds 500 MW, projected to reach nearly 1,000 MW by 2030 (Research and Markets, 2025). Large projects by Viettel (hyperscale 140 MW in Ho Chi Minh City), CMC Telecom, VNG-NTT, and the operational ADC cable line help diversify connectivity, but are still mainly supplementary rather than dominating the region (Viettel, 2025b). If data is increasingly stored, processed, and routed through nodes in Vietnam, Vietnam will not only increase domestic control but also have the potential to influence connection costs, latency, routing choices, and the attractiveness of the regional network. Currently, it is only in the formative stage (emergent structural leverage), not yet sufficient to say that Vietnam has become a regional hub. By April 2026, Vietnam will still be in its early stages, while Singapore will maintain its dominant role.

Therefore, infrastructure is the only area in which the three conditions of "location – ability to intervene – high replacement costs" are gradually converging, though not yet fully met. This is a structural leverage that is in its nascent form, with the potential to develop over time.

(4) Domestic businesses: intermediate leverage, not yet structural leverage

Companies like Viettel, FPT, VNPT, and VNG play a crucial role. They operate infrastructure, cloud, data centers, and a portion of the domestic digital ecosystem. However, one shouldn't be overly optimistic, as they haven't yet mastered core technologies. Vietnam's semiconductor strategy still focuses on design, packaging, testing, and attracting investment, rather than aiming for advanced fabrication capabilities or setting global standards (Prime Minister, 2024a). Therefore, domestic companies currently only create intermediate leverage. They help increase the government's intervention capabilities at certain points, especially in infrastructure and cloud. But they lack the capacity to create independent structural leverage, as they remain at the OSAT layer,

integrating and operating, rather than reaching the most irreplaceable links in the global value chain.

4.4. Limitations and risks: when leverage does not translate into full autonomy

Analysis shows that Vietnam can create different levels of leverage, but none currently eliminates the fundamental dependence. At the semiconductor level, in core software and equipment, Vietnam remains tightly bound. Even the semiconductor strategy is based on the logic of integration and partial specialization, rather than complete separation (Prime Minister, 2024a; Central Committee of the Communist Party of Vietnam, 2024). Leverage also comes with costs. When substitutability is high, or key nodes are out of control, dependence can easily turn into constraint. Requirements for domestic data storage or strict compliance can increase operating costs, create legal burdens, and sometimes provoke a reaction from foreign businesses. On a broader level, increased control could push Vietnam into a "digital entrapment", meaning that the more it tries to expand regulation, the more likely it is to face pressure from export controls, global cloud dependence, or US-China competition (Farrell & Newman, 2021; OECD, 2023).

According to the theoretical framework, Vietnam's current digital autonomy is partial. Vietnam is not escaping dependence, but is only learning to manage and sometimes exploit that dependence through specific points of intervention. In short, the case of Vietnam confirms a core principle: dependence does not automatically eliminate autonomy, but neither does it automatically generate leverage. Leverage only forms when dependence converges with a position that can intervene and possesses relative irreplaceability. Currently, most of Vietnam's tools only create domestic regulatory leverage. Digital infrastructure, however, is showing the potential to gradually shift towards regional structural leverage, although it is still in its early stages. Thus, Vietnam's digital autonomy is not a state of complete control, but rather the result of the conditional selection and exploitation of leverage points within an asymmetrical dependency structure. The crucial question is not how much control Vietnam has, but whether Vietnam correctly identifies the points where limited intervention can create asymmetrical effects.

This case not only illustrates but also verifies the central hypothesis of the paper: even without controlling core technology layers, a nation can still achieve a significant degree of autonomy if it knows how to correctly exploit systemic intervention points. Autonomy within a dependent system, therefore, is not a function of total control, but a function of the ability to intervene in the right places.

5. Discussion on digital autonomy in fragmented systems – from control to leverage

5.1. EU and Vietnam: Between normative power and leverage under binding conditions

When comparing the EU to Vietnam, it's impossible to stop at a simple classification like "the EU is strong in regulatory power, while Vietnam is only defensive". By 2025-2026, the EU itself will have undergone a significant shift in its approach. Previously, the EU

was often referred to through the "Brussels effect" – the ability to spread standards globally (Bradford, 2020). But recently, they have moved to a more complex model, often called "open strategic autonomy" (European Commission, 2023; Council of the European Union, 2024). Instead of relying solely on regulations, the EU is combining strong technological investment through the European Chips Act, cloud sovereignty, AI governance, and "de-risking" policies, rather than completely cutting itself off from global value chains (European Commission, 2023; IMF, 2023). This shows that the EU's regulatory power is no longer purely "normative". It has become a form of institutionalized structural leverage. Laws like the DMA and DSA not only regulate behavior within the EU, but also force large platforms to modify their operational architecture on a broader scale to reduce compliance costs (European Parliament & Council, 2022a, 2022b). However, this effect is facing limitations. Recent reports on EU competitiveness show that the accumulation of too many regulations can slow innovation and provoke negative reactions from the Global South. Many countries view this as "standard imposition" rather than cooperation (Draghi, 2024; World Bank, 2023). In other words, the EU's structural leverage is not unlimited. It is constrained by compliance costs, the degree of localization of the value chain, and the ability of other parties to choose to "break out" of the EU's normative space.

Vietnam, however, is quite different. Lacking the ability to create global standards, Vietnam cannot transform domestic regulations into widespread influence. Legal tools, especially in data and platforms, primarily create leverage for domestic regulation – meaning forcing foreign actors to comply when operating in Vietnam. This expands the policy space but has not created a systemic effect (Farrell & Newman, 2019). Nevertheless, this difference should not be interpreted as "EU strong – Vietnam weak". In an increasingly fragmented system, where there is no longer a single center, Vietnam's defensive leverage can provide a flexibility advantage that the EU finds difficult to achieve. This advantage only becomes apparent when the level of fragmentation is high, and the cost of policy adjustment is low, making it easier for middle-sized countries to reconfigure their positions. The EU is bound by the obligation to maintain global standards, while Vietnam can adapt more flexibly to each situation, especially in the context of US-China competition (WTO, 2023). Therefore, the core difference lies not in the tools but in the ability to transform those tools into influence across borders. The EU has achieved this in some areas but is facing limitations. Vietnam has not yet reached this level, but it has a higher capacity for adaptation in an uncertain environment.

5.2. China and Vietnam: Between systemic control vs. leverage and heterogeneous combinations

Completely contrasting China and Vietnam in terms of "systemic control" versus "selective leverage" is not entirely accurate in the current context. China does indeed pursue quite strong systemic control. They have built a domestic platform, their own operating system, and even a digital financial structure like e-CNY (Kshetri, 2022; IMF, 2023). But that doesn't mean they have eliminated dependence or live within a closed system. In fact, China is operating a dual strategy. On the one hand, they are promoting technological self-

reliance through long-term plans such as the 14th Five-Year Plan, focusing on semiconductors, AI, and digital infrastructure (State Council of China, 2021). On the other hand, they are very proactive in leveraging existing systems, especially through exporting digital infrastructure, technology standards, and digital finance to the Global South. Projects within the framework of the "Digital Silk Road" or cross-border digital currency experiments show that China is not only building alternative systems, but also attempting to restructure flows within the existing system to exert influence (Hillman, 2021; OECD, 2022).

Compared to China, Vietnam clearly lacks the ability to control the system. But that doesn't mean Vietnam will simply sit idly by and accept defeat. Vietnam pursues a selective approach – choosing intervention points that can produce the lowest cost, as demonstrated by its handling of data, platforms, and infrastructure (Farrell & Newman, 2019). The core difference lies in the attitude towards dependence. China tries to minimize and replace dependence. Vietnam seeks to manage and exploit that very dependence. In a complex system where complete decoupledness is almost impossible, the second approach is sometimes more cost-effective (Baldwin, 2016). However, this approach is only feasible when the cost of replacing the system remains high and central actors have not yet locked down nodes with coercive tools. In the context of increasingly fierce US-China competition, the leverage points that Vietnam is exploiting are easily targeted by external pressure. This is the risk of "digital entrapment" – the more dependent it is on the system, the more limited its ability to exploit its leverage (Farrell & Newman, 2021).

5.3. Overview of the conditions and limitations of the leverage model for middle-income countries

The case of Vietnam shows that this approach is particularly suitable for middle-sized countries in the global digital system – where comprehensive control is not feasible, and setting global standards is even more far-fetched. This is even truer for many countries in the Global South: autonomy cannot be achieved by separating from the system, but only by reconfiguring one's position within that system. In this context, a leverage-based strategy becomes a fairly practical adaptation method (Cooper, 2016; Jordaan, 2003). However, in general, we need to avoid two major mistakes. Firstly, not every country can identify and exploit leverage effectively. This depends not only on the degree of integration but also on the structure of integration and the actual capacity to transform position into the ability to intervene. Specifically, this model requires three minimum conditions: sufficiently deep integration to create structural dependence, the existence of accessible focal points, and sufficiently strong institutional and business capacity to translate position into practical action (World Bank, 2021; OECD, 2023). Without any of these conditions, the ability to create leverage will be drastically reduced.

Secondly, leverage does not automatically translate into autonomy. When substitutability is high, key nodes are out of control, or coercive tools are deployed synchronously (control of core technologies combined with financial constraints and standards), dependence easily becomes a systemic constraint instead of a strategic

resource. "Weaponizing dependence" is the clearest evidence of this (Farrell & Newman, 2019). Therefore, the leverage strategy must be understood as a continuous adjustment process. Countries must constantly reposition themselves within the system and reassess their ability to maintain their intervention points. It is not something that accumulates once and for all, but rather a capacity that must be continuously regenerated in an ever-changing environment of dependence and competition…

5.4. Theoretical contribution: Restructuring the concept of autonomy in highly dependent systems

The comparative analysis above shows the need to readjust the perspective on digital autonomy. In many previous studies, autonomy was often closely linked to the degree of control – the more control over resources and structures, the greater the independence of action (Krasner, 1999). But in digital systems with a high degree of interdependence, that assumption no longer fully explains reality. Instead, a different understanding is needed: autonomy is determined by the ability to exploit strategic positions within the system to create asymmetrical influence. This perspective does not deny the role of control, but places it within a broader framework where power can stem from position and the ability to intervene, not just from owning resources (Farrell & Newman, 2019; Grewal, 2008). The contribution of this paper is not to invent a completely new concept, but to systematize and clarify the logic of leverage as a central mechanism of autonomy. The framework "Dependence → Centralization → Leverage → Autonomy Effect" helps connect system structure and strategic behavior and explains why non-centrally located countries can still achieve significant levels of autonomy.

Certainly, it must be acknowledged that leverage is not a perfect substitute for control. It can fail when the dependent structure is dominated by central actors with A comparison between the EU, China, and Vietnam shows that there is no single path to digital autonomy. Each country operates according to its own logic: the EU combines normative power with structural leverage, China pursues system control but still exploits leverage, and Vietnam relies on selective exploitation under conditions of dependence. In an increasingly fragmented and competitive system, the ability to identify and maintain points of leverage – rather than comprehensive control – is becoming a crucial factor determining the degree of autonomy of countries not at the center of power (Farrell & Newman, 2019). However, this ability only exists under certain structural conditions and is easily reversed when strategic nodes are controlled externally or when the system structure changes. This shows that, in an era of overlapping dependencies, autonomy is no longer a function of control, but rather a result of the ability to locate and exploit the structure.

Table 1. Comparison of three digital autonomy models in dependent systems

Model	**Core strategic logic**	**Sources of power**	**Main type of leverage**	**Scope of impact**	**Structural limits**
EU	Strategic autonomy combined with risk reduction	Market size + benchmarking capacity	Regulatory leverage can transform into structural leverage when compliance costs spread	Spread beyond territorial boundaries (Conditional Brussels Effect)	High compliance costs; risk of innovation decline
China	Controlling the domestic system while expanding influence.	Domestic ecosystem + government leadership + market size	Control the system by leveraging a combination of factors (infrastructure, standards, digital finance)	Expanding to the Global South (Digital Silk Road)	Dependence on core technology at several levels; pressure to control exports
Vietnam	Selective exploitation of intervention points in asymmetric dependent systems.	Position within the network + accessibility and intervention capabilities + emerging infrastructure	Primarily domestic regulatory leverage; potential to transform into structural leverage in infrastructure	Mainly domestic; regional potential through infrastructure (data centers, cable landing points)	Lack of control over core technologies; risk of digital traps

6. Conclusion: autonomy in dependent systems – from total control to point-based control

This article argues that autonomy does not disappear when dependence exists. It is merely restructured according to a different logic – the logic of leverage. The crucial point is not how much of the system a nation controls, but which areas it can intervene in, at what cost, and to what extent it influences the behavior of other parties. In other words, autonomy in the modern environment is no longer about "escaping dependence," but about the ability to act conditionally within that very dependence. From this perspective, the analytical framework proposed in this paper – linking dependence to centralization, to leverage, and then to the autonomy effect – is not intended to completely replace existing theories. It merely attempts to clarify a mechanism of operation that has not previously been fully conceptualized. Studies on "weaponizing dependence" have shown how central nodes are used to impose power (Farrell & Newman, 2019). Research on network power and regulatory power emphasizes the role of position and norms (Grewal, 2008; Bradford, 2020). However, these approaches largely focus on central actors and have not

systematized how non-central actors can transform their limited position into strategic influence. The concept of "leverage" in this paper attempts to fill that gap. It shifts the focus from "who holds the position" to "how to exploit the position". Analysis of the Vietnamese case further reinforces this point, while also highlighting its limitations. Vietnam does not control the core technological layers of the global digital system and therefore cannot achieve autonomy in the traditional sense. However, through selective interventions in data, platforms, and especially digital infrastructure, Vietnam can still create various forms of leverage at different levels – from domestic regulation to regional influence.

More importantly, this case demonstrates that regulation does not automatically translate into leverage, and leverage does not automatically lead to autonomy. Leverage only truly comes into play when specific structural conditions converge, including the degree of dependency concentration, access to nodes, and the actual intervention capacity of domestic actors. Certainly, a leverage-based approach is not a panacea. In many configurations, structural constraints remain strong enough to negate the potential for leverage. Arguments from “data colonialism” or dependency theory remind us that dependencies can become systemic limitations for peripheral actors (Couldry & Mejias, 2019; Srnicek, 2017). This is especially true when strategic nodes are centrally controlled, highly interchangeable, and coercive tools are deployed simultaneously at multiple levels. Therefore, leverage should be understood as a conditional mechanism, not a universal law applicable to all cases. The most important generalization drawn from this study is that autonomy in modern systems is not an absolute state, but a relational capacity, always dependent on context. It is not determined by the overall level of control, but by the ability to identify and exploit points of intervention - where a limited level of control can create disproportionate influence. This is particularly significant for middle-sized and Global South countries – actors who cannot shape the entire system, but can still shape how interactions occur within it. From a broader perspective, this study suggests a shift in how we understand power in international relations. While power was previously linked to control and ownership, in modern network systems, power is increasingly tied to position, connectivity, and the ability to intervene. The central question, therefore, is no longer "who controls the system," but "who controls the points where the system is most vulnerable". Power in dependent systems is no longer allocated according to the overall level of control, but according to the ability to intervene at points that amplify the system.

The core conclusion of this paper is: In an era of interdependent systems, power does not belong to those who control the entire system, but to those who control the points where the system cannot function without them. Countries that do not control the system can still achieve a significant degree of autonomy – not by escaping dependence, but by intervening precisely at points where dependence can be transformed into leverage. In interdependent systems, power is no longer a function of overall control but a function of position and the ability to intervene. This paper shows that autonomy does not disappear in dependence, but is restructured as leverage – a mechanism in which limited control at key points can create disproportionate influence over the entire system. This forces us to

adjust our traditional understanding of power in international relations: from ownership to structural exploitation. For countries not located at the center, the strategic question is no longer how to control the system, but how to control the points where the system cannot function without them.

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EMERGING RISKS GETTING REAL: ASSESSMENT APPROACHES AND THE GOVERNANCE FRAMEWORK

Abstract: In times of uncertainty, it is important to adequately manage new and emerging risks, with their associated trends. Especially considering their interaction and correlations with existing risks. This paper presents the underpinning emerging risks governance framework. The assessment of emerging risks is its core component, combining quantitative and qualitative approaches for their analysis. This comprises of a SWOT analysis combined with the PESTLE factors. These are interlinked with the ESG factors and SDGs for the emerging risks identification and categorization. In relation to their quantification approach, utilizing real options to evaluate their impact is introduced, capturing the organizational response. This paper contributes to the literature by documenting the steps in designing and deploying the framework to govern emerging risks, as well as linking emerging risks to ESG and SDGs. The use of real options as a quantification approach is explained, under strategic responsiveness lenses, determining the transition of risks from threats to opportunities.

Keywords: emerging risks, real options, horizon scanning, ESG, SDG, SWOT, PESTLE

NOWE, POJAWIAJĄCE SIĘ RYZYKA STAJĄ SIĘ REALNE: METODYKA OCENY RYZYKA I RAMY ZARZĄDZANIA

Streszczenie (abstrakt): W czasach niepewności istotne jest odpowiednie zarządzanie nowymi i pojawiającymi się ryzykami oraz związanymi z nimi trendami, szczególnie z uwzględnieniem ich wzajemnego oddziaływania i korelacji z ryzykami już istniejącymi. Niniejszy artykuł przedstawia podstawowe założenia ram zarządzania pojawiającymi się ryzykami. Ocena pojawiających się ryzyk stanowi ich kluczowy element i łączy ilościowe oraz jakościowe podejścia do ich analizy. Obejmuje to analizę SWOT połączoną z czynnikami PESTLE. Są one powiązane z czynnikami ESG oraz Celami Zrównoważonego Rozwoju (SDGs) w celu identyfikacji i kategoryzacji pojawiających się ryzyk. W odniesieniu do podejścia do ich kwantyfikacji przedstawiono wykorzystanie opcji rzeczywistych (real options) do oceny ich wpływu, z uwzględnieniem reakcji organizacji na te ryzyka. Niniejszy artykuł wnosi wkład do literatury poprzez udokumentowanie kolejnych etapów projektowania i wdrażania ram służących zarządzaniu pojawiającymi się ryzykami, a także poprzez powiązanie pojawiających się ryzyk z czynnikami ESG i Celami Zrównoważonego Rozwoju (SDGs). Wyjaśniono również wykorzystanie opcji rzeczywistych jako podejścia do kwantyfikacji ryzyka z perspektywy strategicznej zdolności do reagowania, określając proces przechodzenia ryzyk od zagrożeń do szans.

Słowa kluczowe: pojawiające się ryzyka, opcje rzeczywiste, skanowanie horyzontu, ESG, SDG, analiza SWOT, analiza PESTLE

1. Introduction to Emerging Risks

Emerging trends and risks are key for organizations, considering the evolving risk landscape globally. Under volatile and dynamic conditions, understanding more about new and emerging risks is vital for their adequate management. This forward-looking angle of risks and their transmission channels are considered crucial components of organizations' risk management practices. Especially for financial institutions, often operating in different geographical locations and jurisdictions under different regulatory regimes and frameworks, amplifying the complexity, while at the same time exemplifying the importance of emerging risks management. In recent years, more and more emerging risks of the future have emerged and crystalized. Key examples refer to Covid-19 and the global coronavirus pandemic, along with different crises events, like the cost-of-living, energy, with geopolitical conflicts and tensions, exacerbating these. Therefore, the central question is: what constitutes an emerging risk, why are these risks important, and how can organizations, specifically financial institutions, manage them?

Flage and Aven (2015, p. 67) focused on providing a consistent and agreed definition of emerging risks, recognizing that this is missing. Relating emerging risks to known unknowns and based on possible understanding of its concept, "a newly created risk", "a newly identified/noticed risk", "an increasing risk", or "a risk becoming widely known or established" are noted as definitions (Flage and Aven, 2015, p. 61). Emerging risk is a common term used within the insurance industry (Flage and Aven, 2015, p. 62). Emerging risks are defined by Lloyd's of London as "*an issue that is perceived to be potentially significant but which may not be fully understood or allowed for in insurance terms and conditions, pricing, reserving or capital setting*" (Beecroft, 2015, p. 4).

Emerging risks are considered non-financial risks, mostly either operational or strategic in nature (Matić, 2017). Emerging risks could be linked to systemic risks according to Allan et al. (2012, par. 3.11). They are unpredictable in terms of strength and consequences, with indirect and invisible financial impact, under an uncertain horizon (Matić, 2017). Emerging risks could be simply perceived as the risks and opportunities of tomorrow. Many emerging risks have an unknown impact and timescale. They are dynamic and changeable, with new risks emerging, others crystalizing into existing risks, and some not materializing at all. Emerging risks are difficult to quantify, because of their underlying uncertainty, as these risks have not occurred before or have rarely been observed. They vary by nature and are driven by different factors and their interaction between complex risk drivers. Their timescale of impact is unknown, but they are frequently long-tailed risks, with longer horizons, often observed in the medium to long-term.

Allan et al. (2012, par. 3.2) comment on the problematic type of emerging risks, inherent to their nature and the element of surprise. They discuss common features of emerging risks, listing uncertainty, difficulty in quantification, no industry position, difficulty for risk communication, regulatory requirement, identification, desirability, causality, and assess-ability (Allan et al., 2012, Table 2). The level of information about emerging risks is changing, with new updates available infrequently and without

a predetermined pattern. Similarly, their probability of occurrence is evolving, conditional on updates and new information. Wansley (2016) offers two ways to explain why emerging risks are different from a regulatory perspective; firstly, epistemic, from the lack of available information at the time of regulation, and secondly, political, based on the window created where regulatory interventions are politically viable. Matić (2017) also commented on the limited historical data as a complication of emerging risks, highlighting the difficulty in connecting and linking them to other (emerging) risks. These characteristics of emerging risks highlight the importance of developing a framework for their identification, assessment, and management.

In this paper, the governance framework of emerging risks is presented. This comprises of the identification process based on the horizon scanning accompanied by the analysis and evaluation. Part of the latter are different assessment approaches utilized to understand the impact of emerging risks. These vary by type and nature, split into qualitative and quantitative approaches. The qualitative approaches are based on combining a strengths, weaknesses, opportunities, threats (SWOT) analysis with the political, economic, social, technological, legal/ regulatory, and environmental or ethical (PESTLE) factors, derived from Chapman (2011), Andersen and Schrøder (2012), and Johnson et al. (2017). The combination of the horizon scanning with the SWOT and PESTLE is aligned with the emerging risks guidance from the Institute of Risk Management (IRM, 2021, p. 11-3). These are interlinked with the environmental, social, governance (ESG) factors and the sustainable development goals (SDGs). The categorization of emerging risks conditional on the ESG and SDGs mapping is discussed. In terms of their quantification, the use of real options is introduced, complementing the combined SWOT/ PESTLE analysis regarding their qualitative assessment. The real options approach supports the transition of risks and threats to opportunities. The paper starts with the presentation of the emerging risks governance framework and its components. After discussing the horizon scanning and identification process, the analysis and evaluation steps are captured. In this section the connection of the ESG and SDGs is highlighted, linking the emerging risks assessment with their mapping and segmentation. Then, the application of the real options framework for the emerging risks quantification is examined. In the final section of this paper, concluding remarks are included, with practical applications to operationalize the ERGF, for its continuous embedding and integration within other risk management frameworks.

2. The Framework

Emerging risks and their management are core elements of strategic risk management. A comprehensive framework is required for the adequate management of emerging risks, denoted as the Emerging Risks Governance Framework (ERGF). This is in alignment with the emerging risks guidance from the International Risk Governance Council (IRGC) and the Emerging Risks Initiative (ERI) of the CRO Forum. The ERGF is designed and developed based on the IRGC's guiding principles (IRGC, 2015). This has also been highlighted by Matić (2017) about the governance of emerging risks adopting the IRGC

pillars. According to the IRGC guidelines (2015), designing the appropriate internal processes involves the ability to anticipate risk (identify, evaluate and prioritize potential threats and opportunities) and respond to risk (assess and respond to those threats that may develop into risks to the financial institution). Therefore, the management of emerging risks is based on the anticipation (A) and response (B), core pillars of the IRGC's guidelines (IRGC, 2015). These support the prudent assessment of emerging risks, from their identification (A1), analysis (A2) and evaluation (A3) to their management (B1), mitigation (B2), and continuous monitoring (B3). The following figure presents the ERGF with the emerging risks process, as adapted from the IRGC guidelines (IRGC, 2015).

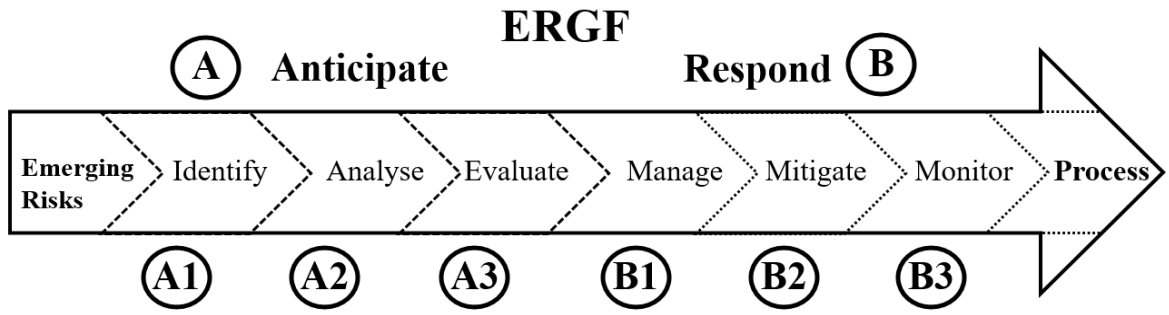


Figure 1. The Emerging Risks Process and Governance Framework

Source: Own interpretation based on the IRGC Guidelines

The components of the ERGF are discussed in the subsequent sub-sections. The anticipation pillar comprises of the identification, analysis, and evaluation of emerging risks whereas the response pillar covers their management, mitigation, and monitoring. Emerging risks are continually monitored, updated, and reported as part of the ERGF. They are reviewed for updates periodically, conducting an exercise to "refresh" them, while also considering new risks to include.

2.1 Identification with Horizon Scanning

The starting point in the emerging risks process and the ERGF is their identification. There is no single golden source to use, since differences among geographical regions, industries, and organizations should be accounted for. Consequently, the identification follows a multi-stage iteration of critically analyzing external forecasts and predictions with internal views and assessments. Horizon scanning is an integral part of the identification process. It involves reflecting on the analysis of external sources to understand the relevance and applicability of emerging risks. This internalization is linked to a combined top-down view from the strategic risks of the financial institution with the bottom-up approach and the granular risks from risk registers.

Scanning the horizon allows financial institutions to discover market-wide and industry-specific risks, under forward-looking lenses. Horizon scanning is a forward-looking tool, exploring futures, emerging issues and searching for signals (Cuhls, 2019). It is a popular method of foresight (Washida & Yahata, 2021), with its objective to create knowledge on emerging issues (Könnölä et al., 2012). It is a technique comprising of the

systematic examination of threats and opportunities, as well as potential future developments impacting the organization, used to better understand potential risks (Brown, 2007, p. 208-10). It is defined as the systematic collection of insights on emerging trends for the identification of potential risk, threats, and opportunities (UK Government, 2024, p. 34-43). The goal of horizon scanning is to support decision-making, via creating flexibility and adaptability, using emerging information, preparing for possible future states and plausible risks (Sutherland & Woodroof, 2009, p. 527; Palomino et al., 2012, p. 360). It consists of collecting large amount of information (Washida & Yahata, 2021, p. 19), after monitoring the internal and external environment, tracking developments impacting the business (Brown 2007, p.208), synthesizing observations (Könnölä et al. 2012). There are different requirements to develop and deploy a horizon scanning system[1] (Palomino et al., 2012, p. 365), with different concepts, such as weak signals, wild cards, emerging issues, discourses, decision-making (Amanatidou et al., 2012). Key steps in the horizon scanning processes are the keyword definition, with the relevant field, selecting sources and methods, searching/scanning, with the use of the derived output (Guhls, 2019). Key components of horizon scanning are data, information, knowledge and strategic insight, supporting the identification of trends (Airmic, 2024, p. 5-6). Horizon scanning is applied to identify relevant emerging risks as part of the emerging risk management assessment (IGRC, 2015; Airmic, 2024: p. 17,20,45). For emerging risks, horizon scanning could be performed via splitting the horizon into three categories[2]: Horizon #1 – *current and short-term*; Horizon #2 – *next, with good visibility and expectations of future, medium-term*; Horizon #3 – *future, items poorly understood, long-term* (Airmic, 2024: 8-9).

For the actual horizon scanning, certain external resources are utilized, such as consultancy publications, reports from trade bodies and associations, university databases and regulatory bodies. For financial services in this case, external source categories are from **(i) associations/ consortiums**, with the key examples of the CRO Forum ERI (2026), the Global Risks Report from the World Economic Forum (WEF, 2026) and the Operational Risk Consortium (ORIC), **(ii) re-insurance research**, with the Systematic Observation of Notions Associated with Risk (SONAR) from Swiss Re (2025), the RiskScan of Munich Re (2026), AXA's (2025) Future Risks Report and emerging risks insights from Lloyd's of London, **(iii) governmental and regulatory bodies**, such as the Bank of England in the UK and the National Risk Register (Cabinet, 2026) for legal and regulatory concerns, and **(iv) consultancies inclusive of university research**.

Given the highly uncertain nature of emerging risks, the magnitude, effect, and the timing of their impact, they require a tailored risk management approach, comprising of

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[1] Note that there are a range of approaches to horizon scanning, such as exploratory and issue-centred (Amantidou et al., 2012), network-based (gathering info from networking and events), and web-based (complementing network-based with use of electronic sources) (Palomino et al., 2012, p. 356). Good horizon scanning practices are continuous and systemic, based on existing knowledge, using technology for scanning and information storage, innovative, collaborative, based on credible information (Palomino et al., 2012: p. 369).

[2] In the absence of formal horizon time periods, the horizon scan output could be listed into Now, Next, New, for risks (and opportunities) Brown (2007, p. 211-3).

both qualitative and quantitative techniques. This is detailed below in the analysis and evaluation section

2.2 Analysis and Evaluation

The emerging risks identified are then segmented into different categories based on their type and characteristics. This is achieved via different layers of mapping. Starting with the broad economic, social, and governance (ESG) factors [3], before considering the 17 sustainable development goals (SDGs) to capture their interaction. The ESG objectives and risks are often hidden, highlighting the importance of assessing emerging risks against them and the ESG objectives (Frank et al., 2021). Then, the PESTLE[4] analysis is followed, overlaying the political, economic, social, technological, environmental (or ethical), and legal categories (Airmic, 2024, p. 26). Once the emerging risks are grouped into those categories from the ESG, SDGs, and PESTLE, the SWOT analysis[5], as initially introduced by Barney (1995), is conducted. Effectively each emerging risk and the associated implications with impacts under those mapped categories, are examined under different scenarios. Each scenario assumes that the emerging risk is considered a strength, a weakness, an opportunity, or a threat respectively.

This is based on the fact that horizon scanning could be combined with other qualitative tools of risk analysis, such as the PESTLE framework (Brown, 2007, p. 211; Airmic, 2024, p. 26) and scenario planning (Brown, 2007, p. 208; Palomino et al., 2012, p. 369). PESTLE is a strategic risk management method employed for the identification of external risks (Rastogi and Trivedi, 2016; Anwar et al., 2021). It is widely used in risk analysis to identify risks, understand their transmission and create a risk framework using other risk management tools, such as a risk materiality matrix (Kolios and Read, 2013; Anwar et al., 2021).

The SWOT and the PESTLE analyses are two strategic business tools which are often combined and integrated in terms of their application (Qadri and Tariq, 2025). This is based on the fact that SWOT looks at the internal capabilities while PESTLE offers a comprehensive view of the external environments (Qadri and Tariq, 2025). The SWOT is a key tool for planning purposes and strategic position (Helms and Nixon, 2010). A limitation of the SWOT is the weak link with other strategic tools and methodologies (Helms and Nixon, 2010). The emerging risks process combining the SWOT analysis with the PESTLE builds on that limitation. An extension of the SWOT analysis could also be considered, after applying the Importance-Performance-Analysis (IPA) technique to capture customer satisfaction, as examined in the study of Phadermrod et al. (2019). The IPA-based SWOT of Phadermrod et al. (2019) could then be utilised to capture the

[3] For the ESG risk taxonomy with the definitions, capturing risk types under "Environmental", "Social", and "Governance" please see Figure 1 in Frank et al. (2021).

[4] Note that there are other variations of the PESTLE, such as PESTEL and PEST, extending the PEST to cover environmental and legal issues (Chapman, 2015, p. 585; Airmic, 2024, p. 26).

[5] Please see the study of Helms and Nixon (2010) for a further review on the SWOT analysis.

customer implications for each emerging risk, providing complementary information for a comprehensive assessment.

The combination of the PESTLE analysis with horizon scanning is considered, since it provides the structure for the evaluation of emerging risks (Airmic, 2025). In particular about new and emerging risks, combining those two qualitative risk analysis tools, in a forward-looking manner, for the categorization of the trends and risks identified based on the PESTLE, the ESG, and the SDGs. After identifying the relevant and applicable emerging risks via horizon scanning, using the PESTLE could support the creation of an emerging risk register/ radar with quadrants and segments based on those categories. This approach replicates the format of the emerging risks radar from the CRO Forum (2024; 2026).

The emerging risks qualitative assessment approach combining the SWOT/PESTLE with the mapping of emerging risks into the ESG categories and the SDGs is graphically depicted in the figure below. The emerging risks identified are mapped against ESG/SDGs for their potential implications to the financial institution. Recognizing the interaction between ESG factors and the 17 SDGs, it is important to consider the impact and the underlying correlations with positive and negative influences. These are then extended based on the PESTLE for their evaluation. The combined SWOT analysis with the different scenarios, one for each SWOT component, allows to examine the impact under each condition for those categories. The register, in the form of a radar, is the end output of this approach.

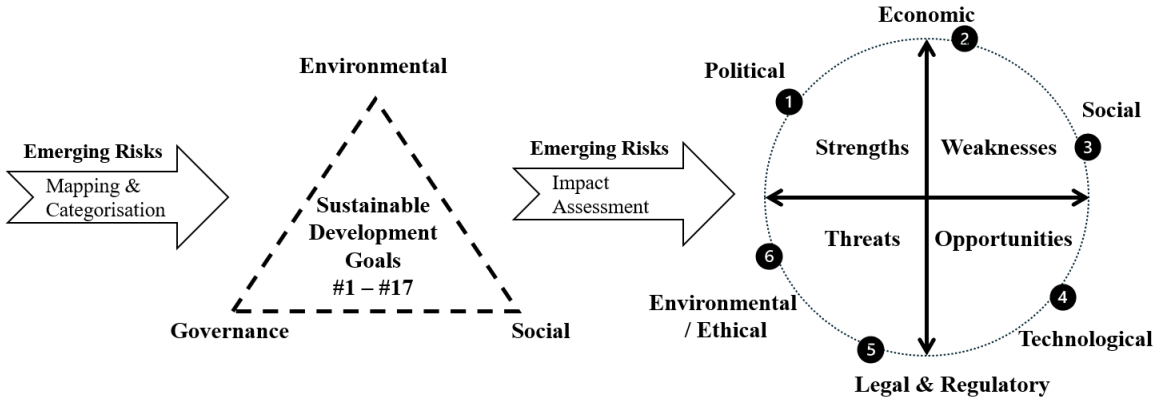


Figure 2. Emerging Risks Qualitative Assessment Approach

Source: Own elaboration based on the SWOT analysis and the PESTLE framework

Emerging risks are classified according to the PESTLE, as used by the Emerging Risks Initiative of the CRO Forum (2026). It is a widely used and understood framework which supports the analysis and monitoring of the external environment, offering us insights into the factors which may impact the different businesses, processes and operations of. The evaluation of emerging risks is performed using a SWOT analysis. This aims to take a holistic view of a perceived risk, leveraging SME-knowledge to assess potential magnitude and timing of impact, attempting to determine whether a potential threat could be turned into an opportunity with effective management action.

The risk measurement resulting in the quantification and assessment of emerging risks ensures the effective comparison of risks, ranking and prioritization with recognition of changes and movements. Certain additional risk management tools could be considered and incorporated in the evaluation of emerging risks. Note that based on scenario planning for futures thinking from Georgiou and Pantos (2022), scenarios explaining potential effects, accounting for the interdependence of risk factors and accumulation effects are also considered. These tools and methods are presented in the table (Table 1) below.

Table 1. Emerging Risk Assessment Tools and Methods

Tool	**Description**
Risk Trees	*A graphical depiction to illustrate the potential impact of each emerging risk to functions, operations and business with its division into partial risks.*
Checklist	*Documenting the relevant risk factors, cause and effect connections (influence factors) influencing the emergence of each risk as in the radar of the emerging risk.*
Direct Economic Exposure (DER)	*The value of the DER for each emerging risks is computed as the product of the probability of emergence, vulnerability of factor of capital asset, hazard intensity factor and insured capital loss or value at risk.*
Classification & Regression Trees (CART)	*The CART method combines both the classification tree analysis and regression analysis, comprising of classification trees where each tree represents a critical risk analysis issue anticipated from the emergence of the emerging risk.*
Hazard & Operability Method (HAZOP)[6]	*The HAZOP method allows uncovering potential problems related to an emerging risk by asking a set of questions for each of anticipated impacts upon crystallization, while examining all potential outcomes and choices of controls to minimize its projected effect. Its application is based on Strom et al. (2013) as suggested about the HAZOP and emerging risks.*
Programme & Evaulation Review Technique (PERT)	*The PERT method examines possible combinations of projected effects of emerging risk occurrence from start to finish aiming to identify all possible impact pathways.*
Scenarios	*Stress testing analysis and scenario planning invovles examining the impact of the adverse development of a single or interconnected risk factors or business assumptions in relation to an emerging risk.*

Source: Own elaboration based on Skipper and Kwon (2007) and Chapman (2015)

2.3 Management, Mitigation, Monitoring

After describing the anticipation pillar of the ERGF, the response follows. This pillar comprises of the management, mitigation, and monitoring of emerging risks. This is consistent with the risk management process of Hopkin (2018) and builds on Aven's (2018) emerging risk analysis, and in particular the risk assessment. The dynamic

[6] Please see Strom et al. (2013, p. 422-3) for more detail about the HAZOP studies.

interrelation of risks and responding action in relation to emerging risk is reflected in their reporting (Christiansen & Thrane, 2014).

After the identification of potential emerging risks, with their impact assessment, their monitoring comprises of their active management, with a defined frequency of risk monitoring and review, and the development/update of the emerging risks register/ radar and watchlist. The material updates and developments in relation to emerging risks are communicated to relevant internal governance forums in alignment to standard risk reporting.

The management and monitoring of emerging risks should be conducted in conjunction with the development of the strategy, having a feedback loop to reflect on changes in shaping the risk universe and risk profile of financial institutions. Following from the identification and prioritization of emerging risks, their management comprises of the implementation and enhancement of tailored and specially designed risk management techniques to achieve the (i) mitigation of exposure to emerging risks and the (ii) strategic exploration of potential opportunities for risk management solutions.

Developing a register with the top emerging risks is key for their successful management. The emerging risks radar from the CRO Forum (2024; 2026) is a graphical depiction which could be replicated for financial institutions. For their monitoring, while it is important to look at emerging risks on an individual basis, given their interrelationships and dependencies it is also prudent to view them more holistically, as part of larger trends. Therefore, beyond the top emerging risks managed, associated trends, such as the major trends [7] identified by the CRO Forum (2026) should be monitored to capture the interconnectedness of emerging risks and how the risk profile and entire risk universe is affected.

The effective risk management for emerging risks includes the development and implementation of a process to complete timely assessments of emerging risks in terms of their anticipated likelihood of occurrence and expected magnitude as well as speed of impact. The risk measurement is the process resulting in the quantification and assessment of emerging risks, requiring consistency, accuracy and precision, often in compliance with the relevant regulations and the legislative framework. Their risk measurement is vital to ensure the effective comparison of risks, prioritization as well as the recognition of a change, either increase or decrease, in terms of the overall perception of an emerging risk.

In addition to the continuous development of the ERGF based on industry practices and research observations, in particular around the quantification techniques and risk measurements employed, the framework should be transposed and integrated within existing risk management activities. This is conducted for the adequate mitigation of emerging risk. That way the development and deployment of management actions is

[7] Referring to the six major trends from the CRO Forum (2026) which are the: (1) ageing and health, (2) demograhpic and social change, (3) economic development, (4) environment and climate, (5) shifting geopolitical landscape, and (6) technological development.

achieved. Therefore, the ERGF could be integrated into the Enterprise Risk Management Framework (ERMF). Based on PwC's (2010) ERMF triangle, the following table documents how the ERGF is incorporated into each component, for the management, monitoring, and mitigation of emerging risks.

Table 2. ERGF Integration to the ERMF

ERMF Component	**ERGF Application and Embedding**
Risk Strategy	*The strategic direction that the financial institutions selects as evidenced in the relevant plans and strategy. Developing the ERGF is a core element of the risk strategy.*
Risk Appetite	*Difficult to determing appetite for emerging risks considering their nature, but using the SWOT analysis, to decide on whether to treat each emerging risk as an opportunity or threat. This is dynamic and updated as part of the ongoing assessment of emerging risks.*
Risk Profile	*Emerging risks should be reflected in existing risk registers, project logs, and the overall risk profile. This confirms their adequate monitoring for their management.*
External Communications and Stakeholder Management	*Communication of all output of ERGF to key stakeholders across the organization with regular updates (monthly/quarterly/annually) to internal governance forums (working groups, steering meetings, committees, boards).*
Governance, Organisation and policies	*Underlying policy and procedure documents for the operalisation of the ERGF. Clarifying roles and responsibilities within the financial institution. Conditional on the adoption of the three lines of defence model (3LoD) for cascading the ERGF down.*
Business performance and capital management	*Evaluation of how emerging risks impact key performance/risk indicators (KRIs/KPIs) that the financial institution monitors to determine how successful performance has been against plan (e.g., return on capital, profitability measures).*
Risk and capital assessments	*Linked to their assessment and quantification, about modelling associated (financial) implications. Associated with the real options framework extension.*
People and reward	*Raising awareness and contributing towards risk culture with the communication of emerging risks and the involvement of internal subject matter experts for their identification and assessment.*
Management information	*Information provided internally to help understand current and future exposure to key emerging risks, aligned to existing risk reporting, in the form of the register/ radar, MI packs, deep dives and thematic reviews.*
Technology and infrastructure	*As part of the ERGF and the radar, emerging risks could be incorporated into existing risk management systems and platforms (i.e., economic scenario generator, and Enterprise Governance, Risk, Compliance tool).*

Source: Own elaboration based on PwC's 10 components of an ERM framework

3. Strategic Response with Real Options

The quantitative assessment of emerging risks is instrumental for their management. Cognizant of the qualitative focus of the assessment under the anticipation pillar, the quantification of emerging risks is proposed. This involves combining the use of quantitative risk assessment (QRA) as in Apostolakis (2004) focusing on the risk-informed strategic decision making of emerging risks. Building on the inherent uncertainty describing emerging risks, and the qualitative analysis with the use of scenarios as part of the SWOT, the application of real options for their quantification is introduced. This is achieved on the basis that the use of real options captures the strategic features of emerging risks. Specifically, the complex interaction between them and strategic objectives, existing risks, and risk management interventions (Allan et al., 2012, par. 4.25). Especially considering the combination and integration of existing risks with their interdepence (Allan et al., par. 4.26-7). The extension of the SWOT analysis to the real options framework address the need for quantification underlined by Helms and Nixon (2010).

Financial institutions could enhance their enterprise risk management approach via integrating different risk management solutions, combining the creation and exercise of real options (Triantis, 2000). Real options allow financial institutions to generate benefits from an integrated risk management strategy according to Triantis (2000). According to Bowman and Moskowitz (2001) the real options approach to strategic analysis allows thinking about the flexibility, and thus these possibilities are reflected in the different responses to each emerging risk. Bowman and Moskowitz (2001) add that the real options approach offers a positive and radical reassessment of the value of risk and exploration.

Miller and Waller (2003) combined scenario planning with real options analysis under a broader process of integrated risk management. They presented an integrated approach to manage risks combing real options theory with scenarios to formulate a strategic planning framework (Miller & Waller, 2003). Scenario planning [8] allows envisioning and articulating plausible future states, as the risk management framework foundation (Miller & Waller, 2003). From an emerging risks perspective, this could be simplified as four scenarios, one for each component of the SWOT analysis to reflect the financial institution's strategic response. Husted (2005) examined corporate social responsibility (CSR) under a strategic perspective using real options theory. Kim et al. (2020) used option implied volatility to identify the risks management benefit of CSR. The real options approach for emerging risks based on their mapping against ESG could be linked to this.

In extending the literature on real options in strategic management and linking it with the emerging risks quantification, real options theory and the real options framework are employed for their assessment and quantification. There have been different studies in the application of real options in strategic management, noting the seminal work of Trigeorgis (1996) and Trigeorgis and Reuer (2017) among others. Trigeorgis and Reuer (2017, Table 1) detail different types of real options, adapted from Trigeorgis (1996). Basic

[8] Perhaps not all steps of scenario planning Miller and Waller (2003) presented are required, with adjustments and simplifications recommended, to factor the idiosyncracies of emerging risks.

real option types are the options to defer or stage, grow, alter scale, switch, abandon/exit (Trigeorgis and Reuer, 2017, p. 45). They also illustrate extensions and complications of real options, such as multiple sources of uncertainty that is relevant to the emerging risks application (Trigeorgis and Reuer, 2017, p. 45). The stages of the real option life cycle based on their real options theory framework comprise of the identification (discovery), acquisition/ creation (exploration), management (development), and exercise (exploitation) (Trigeorgis and Reuer, 2017, p. 48). A simplified version of the real options theory (ROT) and the real options framework (ROF) as in Andersen and Schrøder (2010) is adopted in the ERGF. The use of real options is combined with the SWOT analysis and scenarios, as graphically depicted in the figure below.

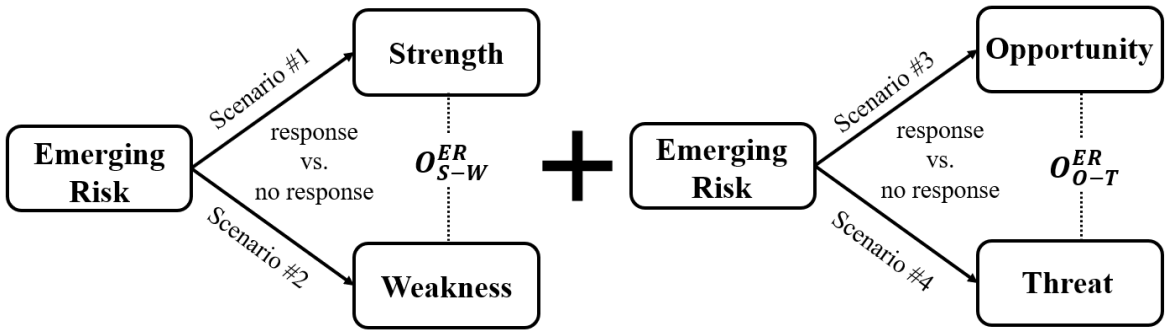


Figure 3. Emerging Risks under Real Options

Source: Own elaboration based on Andersen and Schrøder (2012, p. 237-8)

Effectively, it is assumed that each emerging risk could be considered a strength or a weakness and an opportunity or a threat, based on the SWOT analysis. What determines the impact of each emerging risk is the strategic response from the financial institution, meaning that the strength vs. weakness and opportunity vs. threat is conditional on the response, which could be quantified under the ROT/ROF. Four scenarios are considered, one for each SWOT component, with the financial institution exercising the option to respond. This dictates the impact of the emerging risk, based on certain formulaic assumptions for the real option calculation, and the differential under each scenario. While the scenarios could be considered sequentially in a two-step set up, for simplicity it is assumed that each comparison is conducted in parallel. The two derived values of each real option indicate the emerging risk impact. This is a function of the investment value, capital outlay, variance, time of deferral, and rate of interest. The application of real options for the emerging risks quantification is presented in the following table.

Table 3. Real Options Emerging Risks Quantification

Notation	Definition	Emerging Risk Application
I	Investment value	*The assumed benefit of each emerging risk, if it becomes a strength from a weakness and if it transits into an opportunity from a threat. The difference in value conditional on the strategic response.*
C	Capital outlay	*Financial resources and effort required, covering expenses and initial investment from the financial institution to alter/switch the impact of the emerging risk, moving from a weakness to a strength, and from a threat to an opportunity.*
V	Variance	*The assumed differential impact to the financial institution from the scenario combinations under the SWOT analysis.This captures the variation from the reaction, between the response or no response as a strategic decision.*
T	Time to deferral	*The time of assumed crystalization under each scenario, based on the defined short-term, medium-term, and long-term horizons.*
R	Rate of interest	*The opportunity cost (or cost of capital) under each scenario as a response to the emerging risk crystalizing and/ or realizing impact. This varies by the SWOT analysis segment.*
O	Option value	*The quantified impact of the emerging risk. It is computed from the product of the investment value with N(d1) after subtracting the product of the capital outlay with N(d2) and e in the minutes of the rate of interest times the time of deferral.*
N(d1), N(d2), d1, d2: Cumulative normal density function		

Source: Own elaboration based on Andersen and Schrøder (2012, p. 237-8)

4. Conclusion

Emerging risks are introduced in this paper, presenting a comprehensive framework for their management, the ERGF. This is based on the two pillars from the IGRC (2015), the anticipation and the response. The components of the ERGF are discussed, detailing the emerging risks identification based on horizon scanning. Their analysis and evaluation, central to the ERGF, are expanded, commenting on the different approaches employed for their assessment. The combination of the SWOT analysis with the PESTLE is recommended for the qualitative impact assessment of emerging risks. This is built on their mapping and categorization against the ESG factors and the 17 SDGs, for a comprehensive and integrated assessment of associated implications. Beyond the management, mitigation, and monitoring components of the ERGF, another approach for their quantitative assessment is positioned conceptually; the use of real options. Recognizing the underlying uncertainty, real options could be considered for the quantification of emerging risks. The application of a simplified ROT/ROF with the SWOT analysis and different scenarios is proposed for the emerging risks quantification.

This paper could be extended in different directions. Initially, the recommendations for the ERGF could be explored empirically. The actual emerging risks quantification under the simplified ROT/ROF could be illustrated empirically, based on a selection of emerging risks from the CRO Forum. Essentially presenting a case study, utilizing a financial institution or financial services segment (i.e., insurance sector) to demonstrate how to operationalize the real options emerging risks quantification. Then, looking at the rest components of the ERGF, focusing on each step of the emerging risks process (Figure 1) to provide empirical evidence. In particular the mapping and categorization, expanding on the interaction between ESG and SDGs, with the SWOT analysis and the PESTLE, showing some worked examples. Another direction consists of looking at each part of the ERGF in isolation, for further improvements, such as the IPA based SWOT or expanding on the horizon scanning process. Finally, the real options application could be adjusted, with advances from the ROT/ROF, deviating from the simplified view, targeting improvements in the precision and accuracy of the emerging risk assessment.

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CHAPTER V

REVIEWS

Über die Gegenwart der Germanistik und den Sammelband „Germanistik international und interdisziplinär". Ein Gespräch mit Dr. Paweł Strózik, Universitätsprofessor

Estera Jasita: *Sie sind Mitherausgeber des Bandes* „Germanistik international und interdisziplinär" *und zugleich Autor mehrerer Beiträge. Wer gehört außerdem dem Herausgeberteam an?*

Paweł Strózik: Die Initiatorin des Bandes ist Frau Prof. Joanna Szczęk von der Universität Wrocław. Im Redaktionsteam arbeiteten vier Personen aus verschiedenen akademischen Zentren in Polen. Frau Prof. Dr. habil. Jarochna Dąbrowska-Burkhardt von der Universität Zielona Góra, Dr. habil. Barbara Komenda-Earle von der Universität Szczecin, Herr Dr. Przemysław Staniewski von der Universität Wrocław sowie ich selbst. Von Anfang an war es uns wichtig, dass der Band einen hochschulübergreifenden Charakter hat und das Ergebnis einer tatsächlichen wissenschaftlichen Zusammenarbeit darstellt. Die Struktur des Redaktionsteams ist bereits in gewisser Weise eine Umsetzung der im Untertitel enthaltenen Idee: *Verbindungen – Netzwerke – Synergien*.

E.J.: *Woher stammt die Idee zur Entstehung des Bandes* „Germanistik international und interdisziplinär"*?*

P.S.: Die Idee entstand aus der Überzeugung, dass sich die heutige Germanistik in einer Phase intensiver Internationalisierung und Interdisziplinarität befindet. Deutsche Sprache, Literatur und Kultur können heute nicht isoliert vom sozialen, medialen und politischen Kontext analysiert werden.

Unser Ziel war es, wollten die Germanistik als Disziplin zu präsentieren, die nicht nur die Wirklichkeit beschreibt, sondern sie durch die Reflexion über Kommunikation, Stereotype, Kulturtransfer oder europäische Integrationsprozesse auch mitgestaltet. Im Kontext aktueller Krisen – wie Desinformation, politische Spannungen oder der Krieg in Europa – liegt die Rolle der Geisteswissenschaften, einschließlich der Germanistik, darin, verlässliches, kritisch fundiertes Wissen bereitzustellen, das zur Integration und nicht zur Polarisierung von Gesellschaften beitragen kann.

E.J.: *Welche Ziele verfolgte die Redaktion bei der Arbeit an dieser Publikation?*

P.S.: Wir hatten nicht das Ziel, eine umfassende Gesamtdarstellung der gegenwärtigen Germanistik zu erstellen – das wäre ein unrealistisches Vorhaben. Unser Anspruch war vielmehr, ein möglichst breites Spektrum aktueller Forschungsfelder zu präsentieren und ihre wechselseitigen Verbindungen aufzuzeigen.

Wir wollten drei Aspekte hervorheben. Erstens – die Bedeutung der integrativen Dimension der Germanistik, sowohl methodologisch als auch interkulturell. Zweitens – die zentrale Rolle der Kommunikation als gemeinsamer Nenner linguistischer, literaturwissenschaftlicher und kulturwissenschaftlicher Forschung. Drittens –

die Notwendigkeit internationaler Zusammenarbeit und des Aufbaus von Forschungsnetzwerken, die nachhaltige Synergieeffekte erzeugen.

E.J.: *Der Band umfasst sieben Forschungsbereiche. Welche davon spiegeln die aktuellen Entwicklungen und Herausforderungen der Germanistik am besten wider?*

P.S.: Alle sieben Bereiche wurden als komplementär konzipiert, jedoch erscheinen mir drei besonders repräsentativ für aktuelle Herausforderungen.

Der erste betrifft Diskurs-, Argumentations- und Stereotypenforschung. Im Zeitalter medialer Polarisierung und sprachlicher Manipulation wird die Analyse persuasiver Strategien und politischer Narrative zu einer Aufgabe von grundlegender Bedeutung.

Der zweite Bereich ist die Didaktik des Deutschen als Fremdsprache in einer mehrsprachigen Welt. Sprachunterricht findet heute unter völlig anderen Bedingungen statt als noch vor einigen Jahren – Mehrsprachigkeit ist die Norm, nicht die Ausnahme.

Der dritte betrifft die interkulturelle Germanistik und den Kulturtransfer, die zeigen, dass deutschsprachige Literatur und Kultur Teil dynamischer transnationaler Prozesse sind. Diese drei Felder spiegeln besonders deutlich die Verschiebung der Germanistik hin zu relationalen und netzwerkorientierten Ansätzen wider.

E.J.: *Wie beeinflusst die internationale und interdisziplinäre Perspektive heute die Forschung zu deutscher Sprache und Literatur?*

P.S.: Diese Perspektive bewirkt eine grundlegende Neubestimmung des Forschungsgegenstandes. Die Sprache wird nicht mehr ausschließlich als Zeichensystem betrachtet, sondern als Teil eines vielschichtigen Netzes sozialer und kultureller Beziehungen. Ebenso wird Literatur nicht nur als autonomer Text verstanden, sondern als kommunikative Praxis in konkreten historischen und medialen Kontexten.

Interdisziplinarität ermöglicht die Verbindung linguistischer Methoden mit Ansätzen der Politikwissenschaft, Soziologie, Medienwissenschaft oder Kulturstudien. Die Internationalisierung der Forschung fördert vergleichende Perspektiven und gemeinsame Projekte jenseits nationaler akademischer Rahmen. Dadurch wird die Germanistik zu einer offeneren, dialogischeren und dynamischeren Disziplin.

E.J.: *Welche Rolle spielen im Band Fragen der Didaktik des Deutschen als Fremdsprache, insbesondere im Kontext von Mehrsprachigkeit und kultureller Vielfalt?*

P.S.: Der Abschnitt zur Didaktik Deutsch als Fremdsprache (DaF) ist für mich besonders wichtig, da er die praktischen Konsequenzen der germanistischen Forschung zeigt. Analysiert werden u. a. Transferstrategien zwischen Sprachen, emotionale Aspekte des Lernens – wie Kommunikationsangst – sowie das Funktionieren von Bildungsräumen im Kontext europäischer Mehrsprachigkeit.

Mehrsprachigkeit ist heute nicht nur ein soziolinguistisches Phänomen, sondern eine reale Erfahrung von Studierenden und Schülern. Daher muss die Didaktik des Deutschen die komplexen Sprachbiografien der Lernenden sowie ihre interkulturellen Kompetenzen berücksichtigen. In diesem Sinne fungiert die Germanistik als Brücke zwischen theoretischer Reflexion und Bildungspraxis.

E.J.: *An wen richtet sich die Publikation in erster Linie und welche Bedeutung kann sie für zukünftige Generationen von Germanistinnen und Germanisten sowie für die akademische Lehre haben?*

P.S.: Der Band richtet sich an Forscherinnen und Forscher der Germanistik, Lehrende, Doktorandinnen und Doktoranden, Masterstudierende sowie alle, die an aktuellen Entwicklungen der Geisteswissenschaften interessiert sind.

Ich hoffe, dass die Publikation für jüngere Forschergenerationen ein Beleg dafür sein wird, dass die Germanistik keine geschlossene oder traditionalistische Disziplin ist, sondern ein offenes Feld für Dialog, Integration und neue methodische Ansätze. Ich sehe ihre Zukunft in der weiteren Entwicklung netzwerkbasierter, vergleichender und interdisziplinärer Forschung, die akademische Reflexion mit gesellschaftlicher Verantwortung verbindet.

Das Interview führte Dr. Estera Jasita, Universität für Angewandte Wissenschaften in Racibórz.

Contemporary German Studies and the Volume „Germanistik international und interdisziplinär". An Interview with Dr. Paweł Strózik, University Professor.

Estera Jasita: *You are a co-editor and author of articles in the volume* „Germanistik international und interdisziplinär". *Who else was appointed to the editorial committee?*

Paweł Strózik: The volume was initiated by Prof. Joanna Szczęk from the University of Wrocław. The editorial team consisted of four people representing different academic institutions in Poland: Prof. Dr. habil. Jarochna Dąbrowska-Burkhardt from the University of Zielona Góra, Dr. habil. Barbara Komenda-Earle from the University of Szczecin, Dr. Przemysław Staniewski from the University of Wrocław, and myself. From the very beginning, it was important to us that the volume had a cross-institutional character and was the result of genuine research collaboration. The structure of the editorial team is, in a sense, already a reflection of the idea contained in the subtitle: *Verbindungen – Netzwerke – Synergien*.

E.J.: *Where did the idea for the volume* „Germanistik international und interdisziplinär" *come from?*

P.S.: The idea for the volume arose from the conviction that contemporary German studies are undergoing a period of accelerating internationalisation and interdisciplinarity. The German language, literature, and culture can no longer be analysed in isolation from their social, media, and political contexts.

We aimed to present German studies as a discipline that not only describes reality but also actively contributes to shaping actuality through reflection on communication, stereotypes, cultural transfer, and processes of European integration. In the context of contemporary crises – such as disinformation, political tensions, or the war in Europe – the role of the humanities, including German studies, is to provide reliable, critically grounded knowledge that can serve integration rather than polarisation of societies.

E.J.: *What goals guided the editorial team during the preparation of this publication?*

P.S.: We did not aim to produce a synthesis of all contemporary German studies – this would have been an unrealistic task. Our ambition was rather to present as broad a spectrum of current research fields as possible and to show their interconnections.

We wanted to emphasise three points. First, the importance of the integrative dimension of German studies, both in methodological and intercultural terms. Second, the central role of communication as a common denominator of linguistic, literary, and cultural studies. Third, the need for international cooperation and the building of research networks that create genuine synergies.

E.J.: *The volume covers seven research areas. Which of them best reflect the current trends and challenges in contemporary German studies?*

P.S.: All seven areas were conceived as complementary; however, three of them seem particularly representative of current challenges.

The first is research on discourse, argumentation, and stereotypes. In the age of media polarisation and linguistic manipulation, the analysis of persuasive strategies and political narratives has become a task of fundamental importance.

The second area is the teaching of German as a foreign language in a multilingual world. Language education now takes place under completely different conditions than it did a decade ago – multilingualism has become the norm rather than the exception.

The third is intercultural German studies and research on cultural transfer, which show that German-language literature and culture are part of dynamic transnational processes. These three fields particularly reflect the shift of German studies towards relational and network-based approaches.

E.J.: *How does the international and interdisciplinary perspective influence research on the German language and literature today?*

P.S.: This perspective fundamentally redefines the subject of research. Language is no longer seen solely as a system of signs, but as part of a multidimensional network of social and cultural relations. Similarly, literature is no longer understood merely as an autonomous text, but as a communicative practice embedded in specific historical and media contexts.

Interdisciplinarity enables the combination of linguistic methods with approaches from political science, sociology, media studies, and cultural studies. Internationalisation of research, in turn, promotes comparative perspectives and joint projects beyond national academic frameworks. As a result, German studies become a more open, dialogical, and dynamic discipline.

E.J.: *What role do issues of teaching German as a foreign language play in the volume, especially in the context of multilingualism and multiculturalism?*

P.S.: The section devoted to German as a Foreign Language is particularly important to me, as it shows the practical consequences of German studies research. It includes analyses of language transfer strategies, emotional aspects of learning – such as communication anxiety – and the functioning of learning environments in the context of European multilingualism.

Multilingualism today is not merely a sociolinguistic phenomenon, but a real-life experience of university students and school pupils. Therefore, German language teaching must take into account learners’ complex language biographies and their intercultural competences. In this sense, German studies act as a bridge between theoretical reflection and educational practice.

E.J.: *To whom is this publication primarily addressed, and what significance may it have for future generations of German studies scholars and academic education?*

P.S.: The volume is addressed to researchers and teachers of German studies, doctoral candidates, MA students, and all those interested in contemporary developments in the humanities.

I hope that for younger generations of researchers, this publication will serve as evidence that German studies is not a closed or traditionalist discipline, but rather an open field for dialogue, integration, and new methodologies. I believe that the future of German studies lies in the further development of network-based, comparative, and interdisciplinary research that combines academic reflection with social responsibility.

The interview was conducted by Dr Estera Jasita, University of Applied Sciences in Racibórz.