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A typology of residents' travel safety perceptions and geopolitical border hesitancy

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Abstract

Global crises prime travel safety perceptions and foster hesitancy to cross intra- and inter-country borders, significantly shifting travel flows. Tourism's post-crisis recovery is typically driven by domestic travel while international travel returns lag, leading many tourism destination managers to monitor resident travel safety perceptions and willingness to welcome domestic and international visitors. This study uses latent class analysis to model heterogeneity in travel safety perceptions among residents during the most recent global crisis and to profile the characteristics of people with different travel safety perceptions to understand the influence of geopolitical borders. Parameter estimates support a five-cluster typology of *Unfettered Travel*, *Nationwide Travel*, *Cautioned Travel*, *Averse To All Travel*, and *Localized Travel*. All clusters feel safest traveling in their community and least safe traveling internationally, similarly for welcoming visitors. Notably, crossing a border, even within one's province and country where boundaries are invisible, causes feelings of safety to decline. The results reveal the significant impact on travel sentiments of geography and borders between communities and provinces where traffic may flow without formal customs requirements. The effect of intra-country borders provides new insight into domestic travel flows.

Keywords

Travel safety, perceived risk, geopolitical borders, domestic travel, international travel, travel flows, latent class analysis, crisis recovery

Introduction

History reveals the susceptibility of tourism to crises, from natural disasters to health pandemics, each causing a disruption to travel flows and, in many cases, a perturbance to the traveler's psyche (Elliot and Lever, 2022). Perceptions of risk and safety impact tourists' sentiment and behavior and consequently influence destinations' recovery post-disaster. Following the latest global crisis, COVID-19 has had an unprecedented impact on global shifts in travel patterns, revealing a reliance by many destinations on domestic travelers living within their

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borders to lead recovery (Benjamin et al., 2020; Ramires et al., 2022), highlighting the importance of residents to rebuilding tourism and sustaining destinations.

While it is recognized that domestic tourism can be critical in rebuilding communities post-disaster, surprisingly few studies have considered residents' perspectives (Backer and Ritchie, 2017). Yet residents are not only more resilient in downturns—their domestic trips build back local destinations well before international travelers return (Destination Canada, 2022; Kourgiantakis et al., 2021)—they also affect the timing and extent of recovery as hosts, welcoming or discouraging visitors to their destination. Destination Marketing Organizations (DMOs) who feel pressure to initiate marketing campaigns to drive recovery (Ritchie, 2009) should first consider the readiness of residents to welcome tourists before investing in promotions.

The disrupted state of tourism resulting from global crises provides an opportune context to study the impact of residents' perceptions and personal agency on travel flows. For instance, in the wake of the pandemic, researchers found that uncertainties about risk and restrictions, safety perceptions, and rising costs led to the initial recovery of domestic travel for many destinations. Furthermore, pull factors to reconnect with family and friends, support local, and pride in one's country also favored domestic travel, boosted by lingering anxieties about straying far from home and crossing borders. DMOs responded to this shift by targeting residents, calling for better knowledge of the underlying sentiments of this significant yet understudied market segment.

The distance from their homes significantly influences tourists' perceptions. While traditional travel research often defines distance in objective spatial terms (such as miles or kilometers), human geographers take a more subjective approach, considering temporal and social factors (Simandan, 2020). borders are not only marked by visible indicators like signage or toll booths; many are also geopolitically demarcated, uniting areas through intangible perceptions tied to historical origins, sovereignty, market economy, and shared security concerns (Palacio, 2009). This research adopts a geopolitical distance measure, interpreting distance as an ordered sequence of ego-centric geopolitical zones (community, province/territory, country, USA, and international), potentially invoking social and symbolic boundaries (Lamont and Molnár, 2002) in the minds of travelers.

Physical factors, such as distance and borders, wield substantial influence over individuals' travel decisions. When selecting destinations, travelers weigh various factors, including their perceptions of the destination, its geographical proximity, the characteristics of the local population, and the prevailing political conditions (Boniface et al., 2020; Hall and Page, 2014). Collectively, these considerations play a pivotal role in shaping how individuals distinguish between nearby and distant destinations and domestic and international ones. Additionally, these factors significantly shape travelers' perceptions of whether a place feels familiar or unfamiliar and is perceived as safe or unsafe. Consequently, perceptions play a crucial role in crafting their travel plans and forming their consideration sets (Koo et al., 2019).

Understanding residents' sentiments toward travel in a post-pandemic environment can help DMOs prepare a pathway to recovery. To this end, the study analyzes resident survey data collected by Destination Canada (DC), Canada's national DMO, to examine the influence of geopolitical borders and residents' feelings of safety toward travel and welcoming guests. Travel safety perceptions are compared based on geopolitical distance from residents' homes, ranging in scale from travel within their community, province, or country, to the USA or internationally to other countries.

This paper contributes a pioneering attempt to empirically assess how geopolitical borders affect residents' perceived safety of destinations both as potential travelers and as hosts. The examination is particularly pertinent within a pandemic, holding significant importance for better management and strategic travel marketing during tourism's recovery phase. Additionally, the results offer valuable insights into ensuring the long-term sustainability of destinations post-recovery.

The following sections present an overview of the literature on travel safety and risk perceptions and the literature on post-disaster travel recovery, emphasizing the essential role of geopolitical borders. Next, the methodology section describes the survey of Canadian residents and the application of latent class analysis (LCA) to model heterogeneity in travel safety perceptions during the COVID-19 pandemic. The resulting five-cluster typology of *Unfettered Travel, Nationwide Travel, Cautioned Travel, Localized Travel,* and *Averse to All Travel* is analyzed. Findings reveal new insights into how safety perceptions influence residents' feelings of border hesitancy to travel and welcome visitors, with thought-provoking distinctions. Finally, implications for DMOs and tourism theory are discussed.

Literature review

Global crises significantly impact travelers' perceptions and behaviors. Using the COVID-19 pandemic as a recent indication, domestic travel has become increasingly popular among potential travelers looking to return to travel (Benjamin et al., 2020; Ramires et al., 2022). For example, a minority of 30.1% of American travelers reported interest in traveling outside their country in 2022 (Destination Analysts, 2022). Accordingly, DMOs needed to shift their marketing focus to domestic travel to drive post-pandemic recovery and better understand locals' safety perceptions and travel flows (Mackenzie and Goodnow, 2022). In their study of Portuguese tourists' travel intentions post-pandemic, Ramires et al. (2022) identified generational belonging and distance traveled as the most distinct among their three clusters. Specifically, the technology-savvy Gen Z cluster valued the ability to travel shorter distances more than did the older Gen X cluster. Financial and time-related constraints made domestic travel more appealing, particularly to younger travelers.

Studying traveler risk perceptions and border hesitancy in times of crisis offers researchers a unique opportunity to revisit established theories of risk, geopolitical borders, and tourism recovery.

Travel safety and risk perceptions

A tourist's perception of safety while traveling "is critical in [their] decision-making process in unsettling times" (Liu-Lastres et al., 2021: 255). In tourism, risk is defined as what is perceived and experienced by tourists while purchasing and consuming travel (Reisinger and Mavondo, 2005). It can vary depending on the perceived risk type and tourist characteristics. Most tourism studies focus on perceived risk, an individual's perspective of risk to themselves in a specific context (Reisinger and Mavondo, 2005). From the viewpoint of those who identify as risk-averse (i.e., travel avoidant), higher levels of perceived risk are correlated to higher vulnerability and lower levels of travel motivation and intentions (Caber et al., 2020; Hao et al., 2021; Prince and Kim, 2021).

The consideration of safety and perceived risk pre-date COVID-19 (Bauer, 1960; Pennington-Gray et al., 2014; Taylor, 1974) and are likely to continue as travel inhibitors persist from natural disasters and terrorism to crime and viral diseases. For instance, the terrorist events of 9/11 in New York City caused lingering concern and travel disruption, particularly in the United States and Canada (Bowen et al., 2014). Similarly, in the 1990s, the perceived risk of HIV infection negatively impacted destination choice for destinations with higher-than-average HIV rates (Cossens and Gin, 1995). Godovykh et al. (2021) outlined the main components of health risks to travelers, identifying them as either cognitive (e.g., characteristics of the destination, accessibility of information, etc.), affective (i.e., positive and negative affective states and discrete emotions), individual (e.g., gender, age, prior experiences), or contextual (e.g., framing of risk information).

What is common across these major disruptions to travel is the increased complexity of assessing the safety of a destination in periods of crisis (Campiranon and Arcodia, 2008). For example, Neuburger and Egger (2021) collected data over two distinct periods of the pandemic: the beginning of March 2020 (i.e., early impacts) and two weeks later, when impacts were immense and COVID-19 was officially declared a global pandemic. The authors identified three distinct clusters: in Period 1, respondents mainly were reserved (60%), relaxed (22%), or nervous (18%); in Period 2, their attitudes shifted, as the majority were now anxious (65%), then nervous (21%), and finally reserved (14%). Moreover, in just 2 weeks, participants' risk perceptions of COVID-19 and travel and their willingness to change or cancel their travel plans significantly increased (Neuburger and Egger, 2021). This change reflects higher perceptions of health risks in Period 2 and a subsequent increase in travel avoidance behavior.

The protection motivation theory (PMT), introduced by Rogers in 1983, suggests that several key factors influence people's decisions to engage in protective behaviors. These factors include their perception of the level of danger, the likelihood of that danger occurring, the availability of actions to mitigate the consequences, and their perceived ability to control them.

In a study conducted by Sönmez and Graefe in 1998, they utilized the PMT to explore how individuals' perceptions of risk, safety considerations, and past international travel experiences impact their intentions to travel. Their findings indicated that people tend to avoid certain regions when they perceive a higher level of risk and safety concerns. Conversely, individuals with prior international travel experience were more inclined to reduce avoidance behaviors and express a stronger intention to travel.

It is important to note that their research focused on comparing travel plans to different

global macro-regions. While they did not specifically investigate the influence of domestic travel experiences, which are more common than international travel, it is reasonable to assume a similar relationship between travel experience and travel intentions also exists in that context.

More recently, the risk perception attitude (RPA) framework developed by Rimal and Real (2003) identified four attitudinal groups of those who are facing a risky situation depending on whether they were provided high- or low-efficacy messaging: responsive (high risk, high efficacy); avoidance (high risk, low efficacy); proactive (low risk, high efficacy); and indifference (low risk, low efficacy). Specifically, when risk and efficacy are engaged, individuals' actions are guided by their perceptions of risk. While the framework was initially developed in a communications context, it has since been effectively applied to attitudinal research in a travel context. For example, Liu-Lastres et al. (2021) use the risk perception attitude framework to study female business travelers' risk perceptions, attitudes, and willingness to travel. The authors found that perceived safety mediated the relationship between risk perception attitudes and willingness to travel. In another study, the RPA framework helps identify adventure tourists' safety behaviors concerning personality traits and emotions during an adventure experience (Wang et al., 2019). They found that emotions varied by segment and influenced decision-making. Finally, Liu-Lastres et al. (2019) used the RPA framework to examine the norovirus' impact on messaging shared with cruise line customers and how those messages influenced their information search behaviors, safety perceptions, and travel intentions.

Across tourism studies of risk, safety, and fear, distinctly different patterns of perceived risk emerge for different destinations and sub-segments of tourists (Dolnicar, 2005). Moreover, understanding tourist demand and identifying viable markets through market segmentation is essential to destination recovery strategies (Backer and Ritchie, 2017). Segments vary but typically comprise socio-demographics (i.e., age, gender, education) and psychographics (i.e., attitudes, perceptions). Konak's (2022) study examines the impact of tourists' perceptions regarding hygiene safety and their travel-related concerns on their travel intentions during the pandemic. However, it should be noted that this study focuses explicitly on travel abroad and does not consider factors related to travel distance. The current study captures a range of demographic and psychographic variables and uniquely adds geopolitical distance from home.

Geopolitical borders and travel hesitancy

In times of crisis, borders matter. Consider the following example of impacts on travel flows during the COVID-19 pandemic to demonstrate this: based on a scan of the news circulated on Twitter over six weeks, travelers faced considerable uncertainty at the end of 2021 as the pandemic dominated the news. Fears over the global spread of the Omicron variant banned travelers from South Africa and neighboring countries, leading Japan to seal its border and Australia to postpone border reopening (*BBC News*, 2021). New Year's Eve celebrations in London and Broadway shows in New York City were called off (*The Globe and Mail*, 2021), and Royal Caribbean canceled cruises (Lynch, 2021). Airports and airlines struggled to find staff to match demand as infection and vaccination rates varied across nations.

Meanwhile, popular tourist destinations, including Puerto Vallarta and Puerto Rico, issued health advisories, strengthened security measures, enforced mask requirements, and implemented new cleaning protocols to attract visitors. In Canada, Sun Belt-bound snowbirds faced PCR testing if entering and returning from the United States, while provincial tourism agencies petitioned to remove such restrictions (*CBC News*, 2021). Meanwhile, Canadian trucker protests of cross-border travel restrictions grew louder within an ever-amplifying din of doubt, gossip, and misinformation about COVID-19. These examples are not uncommon experiences caused by crises that cross geographic borders.

Research on border tourism has primarily focused on the perspective of cross-national boundaries. However, intra-country borders between provinces have been found to impact tourist flows significantly (Peng et al., 2016), though they are rarely studied. Peng et al. (2016) found that China's provincial boundaries were a key factor influencing tourist flows into destinations, referencing the boundary effect. The development of bordered areas is influenced by the boundary effect, meaning an area's ability to promote or hinder the flow of economic, social, and cultural activity (Coughlin and Novy, 2013), including the flow of tourists. Political boundaries greatly impact tourist flow (Timothy and Kim, 2015). In the context of COVID-19, political decisions about travel restrictions were not

just the prerogative of national governments but of states, provinces, and other levels of governments with substantial border powers (Seyfi et al., 2023), highlighting the relationship between political geography, governance, tourism, and mobility.

The importance of the domestic travel economy as a tourism recovery strategy cannot be understated. Around the world, there are examples of domestic travel driving recovery post-crisis, including 9/11 in the USA (Chen and Noriega, 2004; Fall and Massey, 2006), foot and mouth disease in the UK (Hopper, 2003), and the financial crisis in Asia (Henderson, 1999). The vulnerability of long-haul travel to crises (Campiranon and Arcodia, 2008) reflects travelers' challenge to determine how safe it is to visit long-haul destinations. Shorter-haul travel, inversely, returns much faster. For instance, Thai domestic travelers were motivated to return to travel quickly to help support locals and boost their country's economy (Rittichainuwat, 2008; Walters et al., 2015). The choice to travel domestically versus internationally can be partially explained by the perception that domestic destinations are less risky if challenges arise (Carvalho, 2022). Returning home can be considered safer and more cost-effective when one removes the uncertainty of crossing a national boundary or being required to self-quarantine before returning home.

As a result of the restricted country-to-country movements triggered by COVID-19, domestic travel has grown in many countries around the world (Samdin et al., 2022). Isaac and Keijzer (2021) observed the positive relationship between risk perceptions and domestic leisure travel intentions. In contrast, the relationship between risk and international leisure travel intentions is negative. Further, Yang et al. (2022) argued that crises are often highly country- and region-specific and can significantly affect destinations. Distinguishing between domestic and cross-border crises, Toudert and Bringas-Rábago (2018) confirmed that greater familiarity with one's domestic destination is a strong indicator that one will hold a positive perception, supporting the assertion that borders matter. Finally, Timothy and Tosun (2003) observed that a segment of travelers considered the Canada–USA border a hindrance and was most concerned with issues such as crossing formalities, lack of information, and border officials. Such border-crossing frictions and related emotional responses of frustration, anxiety, and anger are also reported in print media coverage, weakening demand for cross-border shopping travel (Mulvey et al., 2016).

Crisis recovery in tourism and domestic travel

Throughout history, disasters of all types have significantly impacted the flow of travel and show no sign of stopping, given the tourism industry's fragile vulnerability to external shocks (Irvine and Anderson, 2006; Santana, 2004). Risks related to health, crime, accidents, and environmental disasters all negatively influence a potential tourist's decision to visit a place (Wut et al., 2021). Beyond the disruptive event, service failures (actual or potential) can persist. Therefore, effective crisis management and communication response must be effectively planned by DMOs and travel-based service providers (Ghaderi et al., 2014).

Indeed, developing a crisis management plan is necessary to learn from prior experiences and not repeat past mistakes (Ramanpong et al., 2021). DMOs, in particular, are called upon in times of crisis to provide crucial information, such as communicating travel impacts and offering emergency accommodations for tourists (Chan et al., 2020). Since tourists generally welcome risk management interventions during times of crisis (Gstaettner et al., 2022), DMOs' involvement is crucial (Kenny and Dutt, 2022). For example, during the COVID-19 pandemic, a tourist's perceptions of a destination's preparedness for and sensitivity to the virus directly influenced its perceived competitiveness (Xu et al., 2021). That is, destinations that seemed prepared for the pandemic's impact were considered more appealing than those that were not. The main lesson for DMOs has been that crisis management and recovery plans are necessary for their recovery efforts (Spencer and Tarlow, 2021). For example, Kuščer et al. (2022) developed a crisis management model to identify the critical actions needed for a destination to rebuild its resilience to COVID-19, including responsibilities and interventions to restore a place as a tourism destination. Khan (2021) noted the national DMO's ability to manage Spain's image by communicating with tourists through creative and frequent updated messages offering comprehensive COVID-19 information.

Research highlights the importance of a destination's resiliency to recovery, yet few studies have considered the specific role of the border on travel recovery following times of crisis. Further, the segments impacted most by these borders have not been thoroughly examined. Relatedly, the visiting friends and relatives

segment has been demonstrated to be a strategic travel segment during the recovery phase of a crisis (Backer and Ritchie, 2017), reflecting a typical pattern of domestic travel behavioral response post-disaster. Nevertheless, although we know from the literature that resilience during recovery is essential, relatively less is known about how major crisis events influence travel-related safety perceptions. What is the impact on residents' sentiments toward travel during a crisis, and how can recovery be informed by better understanding those sentiments?

This study builds on these findings to explore how perceptions of safety relate to willingness to travel perceptions. Here, we find resident groupings that go beyond past segmentation studies by considering distance and borders, a critical factor that reflects the reality of travel anywhere in the world. Thus, the study results contribute to the risk perception and crisis recovery literature and greatly benefit practitioners managing destinations through and post-disaster.

Methodology

Data collection tool

Amidst the chaos of the COVID-19 pandemic, DC needed to understand COVID-19's impact on Canadian tourism. In September 2020, DC launched a weekly survey targeting Canadian residents. This survey aimed to gauge the travel safety perceptions among residents of various provinces and regions and their willingness to host visitors from different locations. The survey was collected online by Leger, an outsourced market research organization. On average, 1,800 responses were collected weekly using the online survey instrument.

Sampling procedure

The data was collected from Friday to Sunday each week, and the results were summarized and distributed to all interested tourism stakeholders. Although DC did not collect sample demographic information as part of their survey, they weighted the study's respondents based on population statistics collected by Statistics Canada to ensure the data's representativeness of the Canadian population. In the survey, residents were asked to indicate on a 5-point Likert scale (1 being completely disagree and 5 being completely agree) the extent to which they agree or disagree with the following two statements: "I feel safe to travel to [communities near me; communities in my province; other provinces or territories in Canada; The United States; Internationally]" and "I would welcome visitors traveling to my community from other communities near me; other parts of my province; other parts of Canada; the United States; other countries]." While the United States is certainly another country, it warrants special consideration because of the high volume of cross-border traffic between Canada and the United States, with millions of people and vehicles crossing annually. In contrast, other international destinations require air travel.

Given the number of responses from certain geographic locations, data from Saskatchewan and Manitoba were grouped (i.e., the Prairies), as well as data from Nova Scotia, Prince Edward Island, New Brunswick, and Newfoundland and Labrador (i.e., Atlantic Canada). For provinces or regions with fewer than 50 total responses, data was grouped across multiple weeks to allow for a basis of comparison and interpretation.

This study uses data from DC's January 11, 2022, omnibus survey of 1,851 adult Canadians. The sample was weighted to match the demographic characteristics of the national population. The Likert scale responses to feeling-safe-to-travel and feeling-safe-to-welcome visitors and respondent demographics are analyzed. The sample excludes 136 respondents (7.4%) who replied "I don't know" to any of the 10 focal questions on feeling safe to travel to and welcoming visitors from the five geographic zones (own community, own province/territory, and another province/territory, the USA, and other countries).

Results

The results over time show that through the pandemic, Canadian residents generally felt safer, more receptive to travel, and more welcoming of other visitors two years into the pandemic than at its outset. A significant differentiator in resident perceptions was the geopolitical distance from home. The closer to one's community, the safer residents felt and the more receptive they were to advertising and welcoming visitors. Table 1 details the breakdown of responses.

To analyze this data further, LCA is used to model heterogeneity in travel safety perceptions among Canadian residents during the COVID-19 pandemic and to profile the characteristics of people with different travel safety dispositions. The variable of interest is feeling safe to travel across territorial borders domestically and

Table 1. Descriptive statistics.

	I feel safe to travel to…									
	My community		My province		Other provinces		United States		Internationally	
	N	%	N	%	N	%	N	%	N	%
Strongly agree	747	40.4	617	33.3	453	24.5	272	14.7	239	12.9
Somewhat agree	644	34.8	641	34.7	461	24.9	190	10.3	170	9.2
Neither agree nor disagree	200	10.8	250	13.5	280	15.1	192	10.4	160	8.6
Somewhat disagree	137	7.4	193	10.4	360	19.4	375	20.3	331	17.9
Strongly disagree	91	4.9	124	6.7	242	13.1	786	42.5	889	48.1
Missing/I don't know	31	1.7	25	1.4	54	2.9	36	1.9	61	3.3
	I would welcome visitors traveling to my community from…									
	My community		My province		Other provinces		United States		Internationally	
	N	%	N	%	N	%	N	%	N	%
Strongly agree	596	32.2	519	28.0	418	22.6	265	14.3	226	12.2
Somewhat agree	585	31.6	607	32.8	469	25.3	224	12.1	200	10.8
Neither agree nor disagree	299	16.2	292	15.8	310	16.7	236	12.7	230	12.4
Somewhat disagree	174	9.4	204	11.0	330	17.8	375	20.3	366	19.8
Strongly disagree	136	7.4	171	9.2	269	14.5	691	37.3	761	41.1
Missing/I don't know	60	3.2	58	3.1	55	3.0	60	3.2	68	3.7

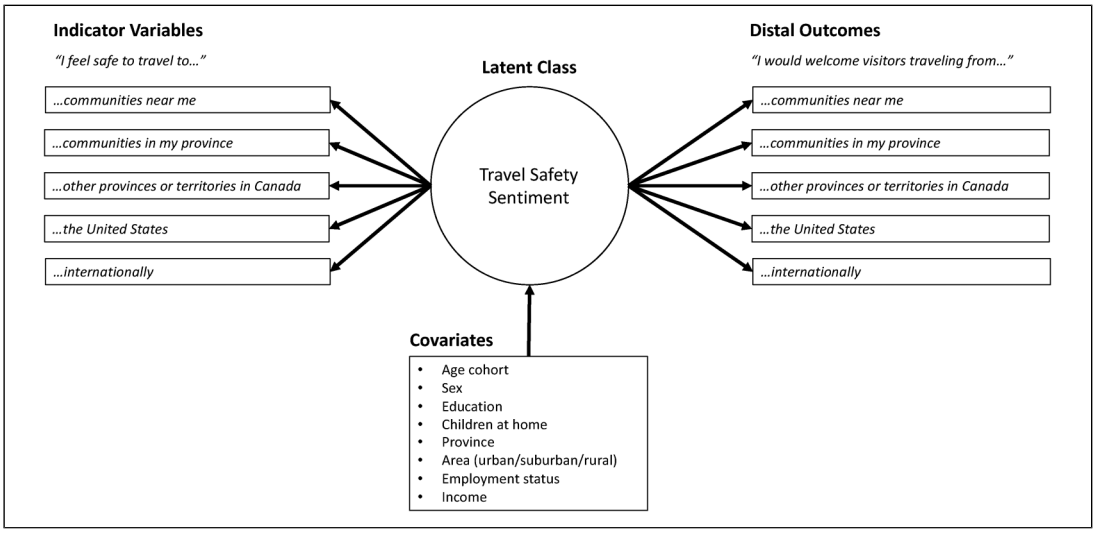

Figure 1. A latent class model of travel safety sentiment.

internationally. To this end, a model-based, 3-step latent class approach with a set of covariates is used (Bakk et al., 2013; Mulvey et al., 2020). Latent class models are well-suited to analyzing non-normally distributed continuous or categorical variables (Magidson and Vermunt, 2002). More precisely, the LCA approach identifies latent, unobservable preferences and groups consumers based on differences in their responses across segments and estimates segment- (or cluster-) specific regression coefficients (DeSarbo et al., 2006). This method yields a more valid representation of preference heterogeneity and greater predictive accuracy and has gained favor in the travel and tourism literature (e.g., Chen et al., 2019; Li et al., 2020; Yankholmes et al., 2021).

Generally, perceptions of safety to travel appear to decrease relative to the travel distance from home. While 75.2% of residents agree that they feel safe to travel in their community, only 22.1% feel safe to travel internationally. This finding holds for their sense of welcoming visitors, with 63.8% of residents in agreement and 23% in disagreement. Beyond these averages, some variations are notable. First, though feeling safe to travel and welcoming others to visit both trend downward as geopolitical distance increases, feeling safe to travel is slightly higher than feeling safe to welcome visitors. At the community level, 40.4% of residents strongly agree that it is safe to travel, yet only 32.2% strongly agree that it is safe to welcome visitors. This gap persists but reverses at the international level—while 48.1% of residents strongly disagreed with feeling safe to travel, 41.1% strongly disagreed with welcoming international visitors. These figures suggest that although residents generally align in their dual roles of hosts and guests, there is an elevated sense of travel safety compared to welcoming visitors to one's community for domestic travel but not for international.

Latent class analysis

Figure 1 illustrates the model with latent class indicator variables, covariates, and distal outcome variables, allowing membership within a latent class to predict the level of observed variables. This approach is most suitable when predicting a manifest outcome using a latent predictor variable, as is the case here. To accomplish this, we first test whether travel sentiments were homogeneous among residents of Canada. The indicator variables measured with the root travel safety perception question of "I feel safe to travel to…" paired with five different geographic zones: "…communities near me," "…communities in my province," "… other provinces or territories in Canada," "…the United States," or "…internationally." In the second step, we test associations of travel safety perception to covariates that profile respondent demographics. Finally, we measure the impact of travel safety perception on the distal outcome of welcoming travelers from the five geographic zones.

The LatentGOLD 6.0 software package estimated a series of latent cluster analysis models, beginning with a single cluster solution (a comparative baseline) and sequentially increasing the number of latent clusters while examining the fit statistics in

Table 2. Model fit indices for 1- through 8-cluster solutions.

Model	Npar	LL	BIC(LL)	AIC(LL)	Class. Err.	Entropy R^2
1 Cluster	20	−12237.9	24624.6	24515.71	0.00	1.00
2 Cluster	26	−10527.4	21248.5	21106.88	0.02	0.94
3 Cluster	32	−9754.7	19747.8	19573.48	0.04	0.90
4 Cluster	38	−9454.7	19192.3	18985.32	0.04	0.91
5 Cluster	44	−9179.1	18685.9	18446.22	0.07	0.89
6 Cluster	50	−9030.5	18433.4	18161.09	0.08	0.88
7 Cluster	56	−8940.5	18298.0	17992.97	0.09	0.87
8 Cluster	62	−8838.6	18138.9	17801.22	0.09	0.88

Table 3. Indicators of the clusters.

	Clusters						
Feel safe to travel to…[a]	1 Localized travel	2 Cautioned travel	3 Averse to all travel	4 Unfettered travel	5 Nationwide travel	Wald (=)[b]	R^2
My community	1.74	2.58	4.02	−2.83	−5.51	332.1	0.63
My province	2.33	2.53	5.40	−5.06	−5.20	234.1	0.79
Other province/ territory	2.12	1.20	4.66	−5.99	−1.99	341.6	0.76
USA	1.79	−0.80	3.29	−4.11	−0.16	358.7	0.78
International	2.16	−1.06	1.97	−2.78	−0.29	307.9	0.73

[a]The Likert scale response categories ranged from 1 = strongly agree to 5 = strongly disagree.
[b]All Wald(=) values are significant ($p < .001$), thus indicating each variable is helping to discriminate clusters.

search of conceptually and statistically superior solutions (Vermunt and Magidson, 2002). The fit indices for one- through eight-cluster models are in Table 2. The one cluster model assumes no differences in safety perceptions, and each subsequent model relaxes this assumption to include more subgroups with differing views. Smaller Bayesian Information Criterion (BIC) values indicate better model fit, and the BIC statistic decreased with more classes. Given no local minimum, we plotted the model fit values. We found a scree plot elbow of diminishing returns at 3 classes. A bootstrapping comparison tested parameter stability and supported a more complex model moving from 3 to 4 and 4 to 5 clusters (500 replications, -LL Diff test, $p < .0000$). Thus, we report the results of the five-cluster model—a finding supported by our interpretation of the parameter estimates.

Residents did not exhibit homogeneity in travel safety sentiment; there was considerable variability in their feelings of travel safety within and across geographic zones. Based on the pattern of parameter estimates (DeSarbo et al., 2006), we interpret the cluster names and report the cluster sizes as *Localized Travel* (25.6%), *Cautioned Travel* (25.2%), *Averse to All Travel* (19.2%), *Unfettered Travel* (16.8%), and *Nationwide Travel* (13.2%). The indicators for each are presented in Table 3. The labels use the term "travel" versus "traveler" for these clusters as they describe residents' geographical and safety-based openness to travel compared to individuals in other clusters.

The first travel safety perception cluster, *Localized Travel*, is the largest group that mirrors the overall pattern of responses. They somewhat agree with feeling safe to travel in their community and province but report greater apprehension about traveling out-of-province, to the United States, or other international destinations. The *Nationwide Travel* cluster shares similar views regarding the risk of international travel yet is significantly more open to travel to other provinces within Canada. The *Averse to All Travel* cluster feels very unsafe crossing provincial or international borders and is apprehensive about local travel in the community or province. Opposingly, *Unfettered Travel* feels safe traveling anywhere. Finally, *Cautioned Travel*, representing the middle ground between the extremes, is more ambivalent or cautious about travel, feeling less safe as the geopolitical distance grows.

Table 4. Cluster membership probabilities by covariate category.

			Clusters						
	n	%	1 Localized travel	2 Cautioned travel	3 Averse to all travel	4 Unfettered travel	5 Nationwide travel	Wald (=)[a]	*p*-value
Cluster size			25.6%	25.2%	19.2%	16.8%	13.2%		
Education									
High school or vocational	572	30.9%	0.23	0.29	0.20	0.16	0.12	156.8	0.000
College	749	40.5%	0.30	0.20	0.18	0.17	0.15		
University cert/diploma	75	4.1%	0.22	0.24	0.23	0.21	0.09		
University Bachelor	297	16.0%	0.26	0.28	0.16	0.17	0.14		
University Master's degree	114	6.1%	0.20	0.30	0.22	0.13	0.15		
Language									
French	385	20.8%	0.19	0.27	0.20	0.20	0.13	81.2	0.000
English	1163	62.9%	0.29	0.22	0.18	0.17	0.14		
Other	81	4.4%	0.20	0.24	0.32	0.17	0.06		
English and other	115	6.2%	0.22	0.42	0.19	0.10	0.07		
English and French	69	3.8%	0.20	0.39	0.11	0.13	0.17		
Province									
British Columbia	251	13.6%	0.28	0.34	0.14	0.14	0.11	74.3	0.000
Alberta	208	11.2%	0.18	0.24	0.09	0.32	0.18		
Prairies	121	6.5%	0.26	0.27	0.22	0.15	0.11		
Ontario	710	38.4%	0.27	0.23	0.23	0.14	0.14		
Quebec	434	23.5%	0.19	0.28	0.21	0.19	0.13		
Maritimes	127	6.8%	0.50	0.11	0.16	0.12	0.11		
Children at home									
Yes	479	25.9%	0.20	0.32	0.13	0.22	0.12	72.1	0.000
No	1363	73.7%	0.28	0.23	0.21	0.15	0.14		
Employment									
Working full time	765	41.3%	0.21	0.28	0.15	0.22	0.15	50.8	0.005
Working part time	182	9.8%	0.27	0.34	0.14	0.12	0.13		
Self-employed/freelancer	74	4.0%	0.20	0.22	0.20	0.16	0.21		
Student	134	7.2%	0.17	0.44	0.08	0.19	0.12		
Homemaker	92	5.0%	0.17	0.20	0.23	0.29	0.12		
Unemployed	103	5.6%	0.33	0.15	0.31	0.12	0.09		
Retired	479	25.9%	0.37	0.15	0.27	0.10	0.11		

(continued)

Table 4. (continued)

			Clusters						
	n	%	1 Localized travel	2 Cautioned travel	3 Averse to all travel	4 Unfettered travel	5 Nationwide travel	Wald (=)[a]	*p*-value
Age									
18–24	201	10.9%	0.17	0.41	0.12	0.19	0.11	48.1	0.002
25–34	291	15.7%	0.15	0.32	0.13	0.27	0.14		
35–44	312	16.9%	0.19	0.30	0.18	0.18	0.14		
45–54	332	17.9%	0.29	0.19	0.22	0.16	0.13		
55–64	323	17.5%	0.28	0.20	0.19	0.15	0.18		
65–74	295	15.9%	0.39	0.15	0.26	0.09	0.11		
≥75	97	5.2%	0.41	0.20	0.25	0.09	0.06		
Sex									
Male	900	48.6%	0.23	0.28	0.18	0.19	0.13	16.8	0.002
Female	950	51.4%	0.29	0.23	0.21	0.14	0.14		

Notes: Area (urban, suburban, rural) and income were tested yet not predictive. Row categories with small response proportions (< 2%) are omitted for clarity.`

Table 5. Distal outcomes of the latent clusters.

	Clusters						
I would welcome visitors from…[a]	1 Localized travel	2 Cautioned travel	3 Averse to all travel	4 Unfettered travel	5 Nationwide travel	Wald (=)[b]	R^2
My community	0.46	0.84	1.99	−2.07	−1.23	266.5	0.52
My province	0.74	0.82	2.38	−2.63	−1.31	382.2	0.60
Other provinces/ territories	0.83	0.35	2.09	−2.68	−0.59	316.8	0.58
USA	1.34	−0.46	1.85	−2.79	0.06	297.3	0.70
International	1.31	−0.72	1.56	−1.99	−0.17	189.9	0.64

[a]The Likert scale response categories ranged from 1 = strongly agree to 5 = strongly disagree.
[b]All Wald(=) values are significant ($p < .001$), thus indicating each variable is helping to discriminate clusters.

Relationship to the covariates

Next, we tested the association of cluster membership to the covariates. Table 4 describes the respondent demographics used as covariates.

The highlighted cells indicate relative frequencies among all covariates, with the darker the shading indicating a greater likelihood of cluster membership (compare values to cluster size proportions). Here, clear distinctions emerge to reveal key demographic differences among the five clusters in the sample. For instance, *Averse to All Travel* members are typically retired or unemployed seniors aged 65 and older. The *Cautioned Travel* cluster members are bilingual, younger students representing the Generation Z cohort. Those in the *Unfettered Travel* cluster also skew toward a younger age category and are likelier to be homemakers with children at home. *Nationwide Travel* members are more likely to be residents of Alberta and aged 55–64. Finally, the *Localized Travel* segment members are more likely to be older adults, female, retired or unemployed, and from the Maritimes.

LCA with distal outcomes

As shown in Table 5, the Travel Safety Perception Profile (cluster membership) is highly predictive of the propensity to welcome visitors (by geopolitical distance) to their communities (Wald(=) = 382.2; $p < 0.001$). Views on welcoming travelers are related to one's travel safety perceptions, as the Wald (=) statistic indicates that the differences in these beta effects across classes are significant (DeSarbo et al., 2006).

Viewing the distinct patterns of the five membership clusters reveals insight into the perceptions shared both across and within clusters. The graph (Figure 2) shows the average Likert-scale travel safety responses (from 5 = strongly disagree to 1 = strongly agree), comparing the scenarios ("I feel safe to travel to…." and "I would welcome visitors…") by geographic zone and latent cluster. The results illustrate the following.

The range of travel safety sentiment responses held by residents spans the continuum from feeling entirely safe for travel (*Nationwide Travel*, in my province = 1.00) to unsafe (*Localized Travel*, international = 4.90) and feeling ready to welcome visitors (*Unfettered Travel*, in my province = 1.19) to unready (*Averse to All Travel*, international = 4.64).

Travel safety sentiment varies across geographic zones, as people feel less safe to travel as distance from home increases. However, the effect is non-linear and segment-specific. For some, crossing a provincial boundary is consequential, while crossing international borders matters to others.

Travel safety perceptions are broadly consistent between the visiting and welcoming scenarios within segments. However, there are significant differences among residents; for example, the readiness to welcome visitors from the USA ranges from 1.36 (*Unfettered Travel*) to 4.64 (*Averse to All Travel*).

Discussion

This study analyzed the impact of the COVID-19 pandemic on travel flows using data from a survey of 1,851 Canadians. The results of a latent class segmentation model showed that residents exhibit considerable heterogeneity in travel safety perceptions, spanning the spectrum of travel hesitancy. The cluster profiles of unobservable preferences also identified demographic differences, which can inform the development of a more effective and targeted marketing strategy. Most importantly, the results provide insight

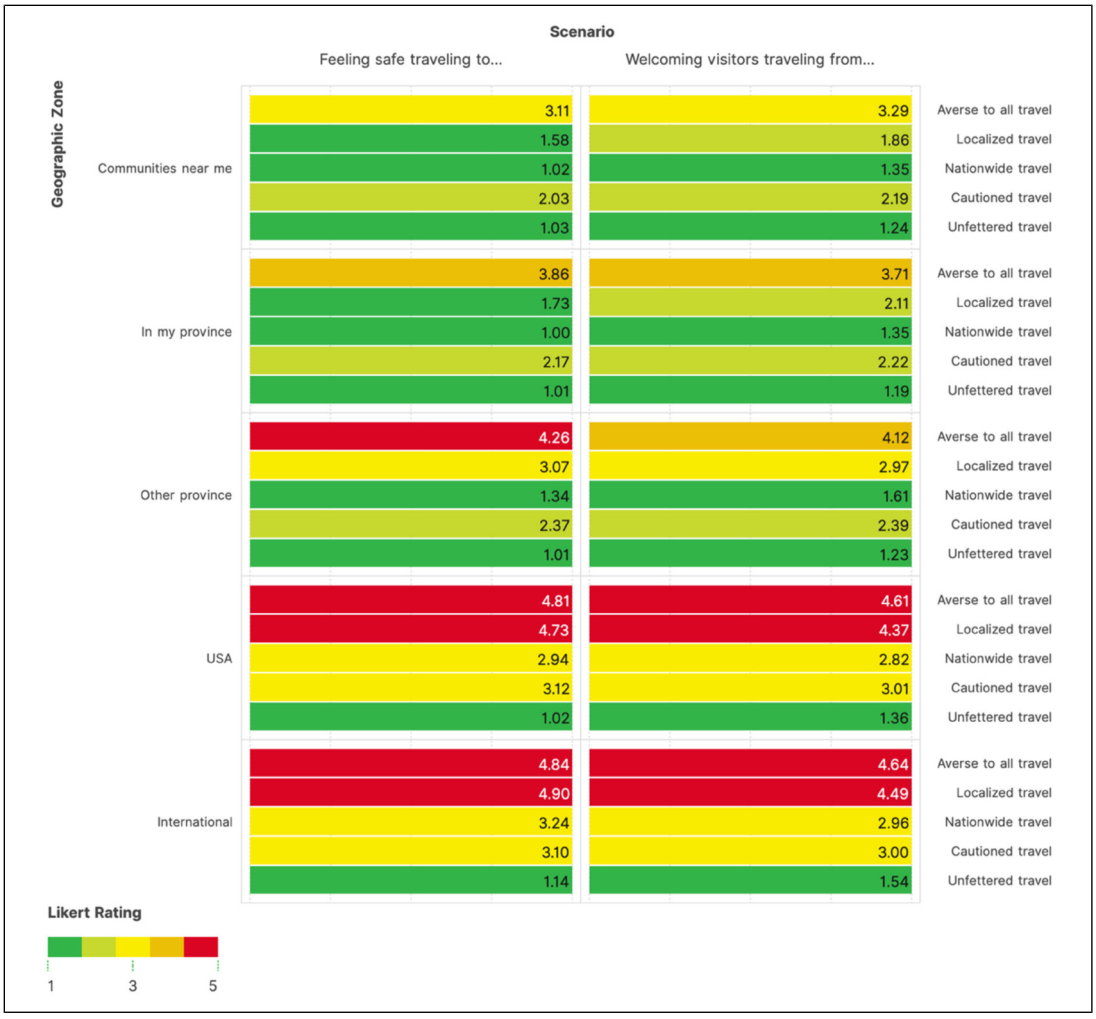

Figure 2. Safety perceptions by scenario, geographic zone, and latent cluster.

into the relationship between geography and travel hesitancy as distance and geopolitical borders impact feelings of safety to travel and welcome visitors.

Overall, the study found that perception of safety to travel appears to decrease relative to the travel distance from home, with 75.2% of residents agreeing that they feel safe to travel in their community but only 22.1% feeling safe to travel internationally. However, the impact of borders varies by cluster, as reflected by the relative steepness of the lines in Figure 2. Notably, there are significant spikes in travel hesitancy for trips crossing borders (to the USA and internationally) with visible official checks and necessary stops, such as a customs booth. This hesitancy is true for *Averse to All Travel*, *Typical* and *Nationwide Travel*; *Cautioned Travel* also shifts their perception from positive to negative, though less dramatically. Only *Unfettered Travel* (13.2% of respondents) agree that travel to/from the USA and international destinations is safe. Though LCA has limited adoption in travel research (it requires specialized software and expertise in statistics), it is a powerful tool for identifying subgroups or segments with a population that would otherwise be overlooked or ignored. Accounting for heterogeneity warrants further investigation in travel research (Chen et al., 2019; Dolnicar, 2022).

Residents are reasonably consistent in their responses to feeling safe to travel and welcoming visitors, contingent upon the geopolitical borders in question (the x-axis), latent cluster membership (line color), and scenario (the shape of the respective solid T—travel to and dotted W—welcome lines). At the community level, all clusters feel safer to travel than to welcome visitors, most noticeably for the *Domestic Traveler* and *Typical Traveler* cluster (depicted by the rating gap between lines). However, these perceptions

reverse for most clusters as they move further away from their community. At the international level, all clusters except *Unfettered Travel* feel more welcoming to international visitors than they are willing to travel themselves internationally. This shift occurs at different points, with *Nationwide Travel* feeling safer traveling than welcoming visitors from other provinces but shifting their views regarding the USA or international travel.

In contrast, the *Averse to All Travel* cluster shifts as soon as they are beyond their community and is most disagreeable with it being safe to travel even within their own province. Despite the variances among these clusters, there is a notable consistency in how their attitudes toward welcoming visitors align with their feelings of safety when traversing both domestic and international borders. Building upon the foundational work of Sönmez and Graefe (1998), which explored travelers' perceptions of safety during international trips and its impact on future travel intentions, this study expands the scope to encompass a broader range of geographic distances. This extension includes evaluating travelers' safety perceptions at local, regional, and national levels. It would be valuable for future research to continue along this line of inquiry, exploring how each of these geographical scales correlates with travel intentions. For example, it raises questions about whether travelers planning shorter journeys within their local communities may be less apprehensive than those who must cross provincial boundaries. This line of investigation could shed further light on the dynamics of travel intentions and safety perceptions.

This study delves into Resident Perceptions of Safety (RPA) and its connection to residents' willingness to travel. In doing so, it follows the RPA framework established by Liu-Lastres et al. (2019), identifying parallel groupings. However, our research advances beyond previous segmentation studies by introducing an additional dimension: the consideration of distance and borders. This element is pivotal in capturing the real-world dynamics of travel on a global scale. Consequently, the findings of our study hold significant importance for academics who contribute to the RPA framework and practitioners involved in destination management in the aftermath of disasters.

The increased hesitancy to travel and welcome others is intuitive when considering visible borders where increased uncertainty threatens travelers, such as unclear vaccination requirements, potential border delays or other related issues, and concerns about becoming ill while abroad. However, the invisible borders are of particular interest—those intra-country transitions from one place to another where one could easily miss a border entirely, perhaps only marked by a sign welcoming a traveler to a new town or city, but otherwise without markers. For most countries, it is easy to cross states or provinces without even noticing the exact moment that one becomes the other, even if the locations are distinct in some aspect. In Canada, for example, provincial borders between English and French-dominated provinces are easily crossed without a required stop. However, even to cross these invisible borders, this research reveals hesitancy among the identified clusters. For example, for *Localized Travel*, the largest cluster (25.6%), the shift to disagreeing with travel safety and welcoming visitors happens within their own country at the inter-provincial border. Therefore, future research should follow the current study's lead and investigate the impact of less conspicuous within-state borders.

The demographic profiles of clusters can help marketers allocate resources more effectively. For example, the second largest cluster, *Cautioned Travel* (25.2%), is somewhat equally influenced by all borders, both visible and invisible, nearest to the midpoint of the scale (3 = neither agree nor disagree) for trips across intra- and inter-country borders. An examination of this cluster's demographic profile (Table 4)—relatively young, bilingual, many at the student stage of life—is suggestive of the Generation Z ("zoomers") cohort. As members of this highly connected generation, zoomers represent an incredibly diverse group of individuals who value pragmatism and easy access to information. As members of this highly connected generation, zoomers represent an incredibly diverse group of individuals who value easy access to information and are a relatively realistic cohort (Dimitriou and AbouElgheit, 2019). A pragmatic weighing of travel-related factors may explain their middle-of-the-pack perceptions. At the other end of the generational divide, the Averse to All Travel cluster (19.2%) skews to an older cohort, many unemployed or retired, most averse to traveling even short distances from home, likely heeding warnings of the severity of the COVID-19 virus for older individuals. In short, latent class segmentation is crucial to managing customer heterogeneity and effectively targeting customers; thus, the approach can

advance practitioners' tourism management priorities (Mulvey et al., 2020).

This research stands out for its distinctive focus on understanding how geopolitical borders shape residents' perceptions, whether in the role of potential travelers or hosts. This aspect carries substantial significance. By uncovering the link between safety perceptions in travel and hosting, DMOs gain a valuable tool. They can use this insight to promote local products and services to residents while assuring them of safety, thereby positively influencing both inbound and outbound travel.

Conclusions and implications

Shifts in global travel caused by the COVID-19 pandemic have brought to the forefront travelers' perceptions about risk and safety not just to travel oneself but to welcome visitors to one's community, province, and country. This study expands on the current research by capturing residents' perceptions as travelers and hosts during the recent pandemic, using LCA to identify the presence of five clusters: *Localized Travel, Cautioned Travel, Averse To All Travel, Unfettered Travel*, and *Nationwide Travel*. The demographic profile of each cluster (Table 4 highlights significant distinctions in education, language, residence, household composition, employment, age, and gender. For the first time, it reveals traveler segment perceptions of travel safety and welcoming visitors.

All five clusters feel most safe traveling in their community and least safe traveling internationally. However, the results reveal the significant impact on travel perceptions of distance from home and borders between communities and provinces despite the invisibility of these demarcations, where traffic may flow without any formal customs requirement. Crossing any geographic border, even within one's country where demarcations are invisible, causes feelings of safety and welcome to decline.

This border hesitancy may provide some positive news for DMOs' strategies for recovery, which are projected to be driven by domestic travel first before international travel returns. The more agreeable perceptions of travel within one's community, province and country versus international travel of *Localized Travel* (25.6%) and *Nationwide Travel* (13.2%) provide a target for early campaigns. Appeals to reconnect with family and friends, to support local, and pride in one's country may help calm anxieties about straying far from home and, notably, crossing borders, perceptions that are likely to linger even post-pandemic. On the other hand, campaigns targeting younger individuals within the *Cautioned Travel* cluster (25.2%) and Unfettered *Travel* cluster (16.8%) will need to promote domestic experiences effectively to keep this cohort from traveling out of the country. Lastly, for the *Averse to All Travel* (19.2%), DMOs may partner with local and regional tourism operations and develop campaigns targeted to this older demographic, emphasizing the safety of hyper-local travel experiences to convince this cohort to travel.

These findings provide DMOs with a clear strategic roadmap for post-crisis recovery efforts. Moreover, they can foster a sense of pride and attachment among residents toward their locale, yielding short- and long-term benefits. In the short term, attracting nearby visitors can be instrumental in aiding the tourism industry's recovery. In the long term, cultivating a robust resident market contributes to the destination's sustainability and fortifies its overall resilience.

Theoretically, this research builds from the PMT and theories of risk and safety perception to advance our understanding of safety perceptions in a travel context during times of crisis. Further to Liu-Lastres et al.'s (2021) evidence that perceptions of safety are critical in unsettling times, this study shows how geopolitical borders influence these perceptions. As Rogers (1983) concluded, people's decisions are influenced not only by their perceptions of danger but also by the likelihood of danger occurring, the availability of actions to mitigate consequences, and control. Results suggest that distance from home influences these perceptions, likely reflecting a greater familiarity with one's community compared to what may be beyond a border. This aligns with Sonmez and Graefe's (1998) PMT study that found past travel experience led to stronger intentions to travel, given that most residents would have more experience traveling locally than internationally. The heterogeneity of the clusters supports past segmentations that typically find a range of "relaxed" to "nervous" travelers in response to perceptions of travel safety (Neuburger and Egger, 2021), refined here to consider the significant influence of geopolitical borders. These findings have implications for destination management during a travel recovery period and suggest the broader

consideration of all local and international borders in future segmentations.

However, limited to one country, it would be valuable to test these relations further in other countries (beyond Canada) and post-pandemic to assess the identified perceptions against actual travel intentions and behaviors. Additionally, this study did not capture past travel experience and may have influenced results. Though the news headlines may change from Avian flu, COVID-19, Monkeypox, SARS, or Zika to the next virus outbreak or crisis, the impact on travel demand will pivot mostly on safety perceptions and travelers' willingness to cross borders or welcome visitors. Şengel et al. (2023) show that tourists' concern about COVID-19 directly affects their intention to travel. If history repeats, the tourism industry should be better prepared to address geopolitical borders and perceptual boundaries' role in travelers' decisions. As DMOs will inevitably need to search for a path to recovery through a future global crisis, the findings of our perception-based typology offer essential support to help determine strategic directions forward.

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