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# The echoes of social media friends' travels: social influence and venue selection in a hyperconnected world

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This research examines how social media friends influence each other's travel decisions by investigating the roles of geographic distance and venue type. Through analysis of over 22 million check-ins from 112,000 users across Foursquare and Twitter platforms, we provide unprecedented empirical evidence of how social influence manifests in actual travel behaviors. Our findings reveal two key patterns: social influence diminishes systematically with distance, with friends showing 12% venue overlap for destinations at least 50 km from home, decreasing to 5% at 10,000 km; and influence varies meaningfully across venue categories, with Travel and Transport venues demonstrating the strongest friend overlap. These results extend both social comparison theory and construal level theory by providing large-scale empirical validation of how psychological distance affects social influence in digital travel behavior. This study offers valuable insights for developing personalized travel recommendations and social network-based marketing strategies.

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## Introduction

The role of friends' influence and word-of-mouth recommendations in the tourism decision-making process has been a longstanding topic in tourism research (Liu et al., 2019). According to the United Nations World Tourism Organization (UNWTO, 2008), tourism is defined as the temporary movement outside one's usual environment. Travel for tourism purposes thus extends beyond daily activities and includes vacation trips, weekend getaways, and visits to destinations that deviate from routine movement patterns. Friends are consistently recognized as one of the most credible sources of information, given their trustworthiness and personal experience with recommended destinations or venues (Murphy et al., 2007; Huertas, 2018). Numerous studies show the significance of friends' influence in shaping tourists' decisions related to travel choices (Litvin et al., 2008; Dimitriou and AbouElgheit, 2019; Hernández-Méndez et al., 2015).

Travel information sources have shown a significant transformation with the emergence of social media. Recent research indicates that user-generated content (UGC) on social media has exceeded the impact of personal recommendations from friends, particularly in the pre-trip stage of the decision-making process (Dai et al., 2022). UGC has evolved into one of the most crucial sources of information for tourists as it is considered authentic, reliable, and trustworthy. This trust extends beyond personal circles, with many tourists relying on content posted by unknown travelers (Pop et al., 2022). Studies show that UGC significantly influences decision-making, especially for intangible tourism products such as accommodations, attractions, and restaurants (Pop et al., 2022). This suggests UGC's important role in making initial evaluations and subsequent purchasing decisions for tourists (Liu et al., 2019; Li et al., 2023).

The advent of social media platforms has fundamentally transformed how social media friends influence each other's leisure travel choices in the digital age. Unlike traditional friends who rely primarily on physical proximity and shared experiences, social media friends represent a complex web of relationships that span both online and offline contexts (Badejo and Okorie, 2021). These digital connections transcend geographical boundaries, enabling continuous interaction through posts, messages, and shared content about travel experiences (Lin et al., 2016). While interactions between social media friends might lack some depth compared to traditional face-to-face relationships, these digital connections excel at information exchange and collective experiences within digital communities (Shore et al., 2018). Social media friends are particularly influential in leisure travel decisions, where their shared posts and experiences serve as trusted sources of inspiration and validation (Chen, 2017). The visibility of social media friends' activities and recommendations creates powerful normative effects, with individuals often aligning their travel choices with the perceived preferences of their online social network (Ordenes et al., 2017).

Despite extensive research on social media's influence on leisure travel decisions, current understanding remains limited by the scope of existing studies. Most investigations have been confined to specific regions or countries, or conducted on a relatively small scale (Hernández-Méndez et al., 2015; Liu et al., 2019; Latif et al., 2020). This limitation creates a significant gap in our comprehension of this phenomenon at a global level. Furthermore, there has been minimal quantification of the degree to which social media friends influence each other's travel choices, particularly concerning the impact of distance. The influence of social media friends may vary significantly for far-off locations requiring careful planning and research, potentially playing an important role in shaping travel itineraries, specifically in determining the destinations and venues to visit.

To bridge this gap, this research aims to expand our understanding of how social media friends —defined as a connection between two users who mutually follow each other on social media platforms (Yang et al., 2021)—influence leisure travel behavior through two primary research questions:

RQ1: Will the influence of social media friends on each other vary based on the distance of the trip to their home?

RQ2: Will the influence of social media friends on each other vary based on the type of venues they visit?

To address these questions, our study examines the impact of social media friends on leisure travel behavior by analyzing over 22 million check-in data points from more than 112,000 users on Foursquare and Twitter. This research investigates how social media friends influence each other regarding distance traveled and venue visits during non-routine travel experiences, specifically exploring variations in social influence based on geographic and cultural familiarity. We exclude travel activities close to the user's home location, which typically represents local movements such as visits to nearby grocery stores, regular commutes, or other everyday activities. Instead, we focus on discretionary travel choices that deviate from typical daily patterns.

This research significantly contributes to the theoretical understanding of social influence on travel decisions. It provides substantial empirical evidence supporting and extending social comparison theory, affirming that individuals, especially friends, directly mimic and are influenced by each other's travel behaviors. The study advances construal level theory by demonstrating that social influence varies with geographic and cultural familiarity, showing that tangible behaviors shift as the perceived distance decreases. The study's global-scale application of social theories across diverse users contributes to the generalizability of findings to cross-border tourism and hospitality trends. Furthermore, the research breaks new ground by operationalizing social influence in online platforms. Specifically, Twitter and Foursquare provide clarity on how online interactions affect offline leisure travel actions.

The rest of the paper is structured as follows: In Section "Literature review", we review the literature. Section "Data and method" describes the data and methodology. In Section "Findings", we discuss our findings. In Section "Discussion and conclusion", we provide implications, conclude the paper and also discuss limitations and future work.

## Literature review

Social media has fundamentally transformed travel decision-making by extending its influence beyond traditional word-of-mouth recommendations. Today's travelers are influenced by a sophisticated network of "social media friends"—individuals who follow and interact with each other online. These relationships have redefined how people discover, evaluate, and choose travel experiences, with social media friends serving as both sources of information and mechanisms for social validation (Liu et al., 2019; Wang and Park, 2023). To examine how this influence varies across geographic distances and venue types, we review the relevant literature on the conceptualization of social media friends and explore the application of construal level theory and social comparison theory to understand social media's impact on travel behavior. Together, this section provides the theoretical foundation for our empirical analysis.

### Social media friends and their influence on travel decisions

The nature of friendships and their influence on consumer decisions has undergone a fundamental transformation with the rise of social media platforms. Unlike traditional friendships that

primarily develop through physical proximity and shared experiences, social media friends represent a wide spectrum of relationships that transcend geographical boundaries. These digital connections encompass various relationship types, from offline acquaintances maintaining connections online to purely digital friendships sustained solely through platforms, as well as hybrid relationships that flow between online and offline contexts (Badejo and Okorie, 2021). What distinguishes social media friends is their unique pattern of interaction and influence mechanism. These relationships are characterized by unprecedented accessibility and immediacy, enabling continuous engagement through posts, messages, and shared content. These connections often transcend geographic boundaries, allowing relationships to persist and influence decisions despite physical separation (Lin et al., 2016). While these interactions might not match the emotional depth of traditional face-to-face relationships, social media friends excel at information exchange and creating collective experiences within digital communities.

The influence of social media friends has become particularly significant in the tourism and hospitality industry. Recent research shows that sharing travel experiences on social networking sites has become a common practice, with the shared information serving as a crucial resource for potential travelers (Feng et al., 2021; Pan et al., 2021; Pop et al., 2022). Social media friends wield this influence through both direct recommendations and subtle cues in shared content, creating powerful normative effects that lead individuals to align their choices with their online social network's perceived preferences (Ordenes et al., 2017). The way social media friends share and influence travel decisions has evolved into a sophisticated process. Frequent travelers now employ various approaches to sharing their experiences, carefully considering factors such as authenticity, uniqueness, relevancy, and emotional connection when deciding what to share. They demonstrate mindfully different sharing behaviors across different stages of their travel experience - before, during, and after trips - while actively considering their followers' needs and reactions (Ghaderi et al., 2024).

Recent studies have found that UGC from social media friends has a particularly strong impact on opinions and decisions related to tourism and hospitality (Huertas, 2018; Liu et al., 2019; Nguyen and Tong, 2023). This influence is especially powerful because people tend to rely on their social media friends' opinions when making decisions about high-involvement products such as travel, believing these friends better understand their preferences, lifestyles, and attitudes (Gershoff & Johar, 2006). The impact of social media friends manifests through various platforms and content types. While previous studies have explored their influence on platforms like TripAdvisor (Filieri and McLeay, 2014) and Facebook (Latif et al., 2020), recent research indicates that visual content plays an increasingly crucial role. Studies show that images and videos generate substantially stronger engagement than text-based content (Wang and Park, 2023), suggesting that the visual documentation of travel experiences has become a powerful tool for social media friends to influence travel decisions.

## Construal level theory and travel decision-making

Construal level theory suggests that individuals' decision-making processes are closely related to psychological distance, which includes four dimensions: temporal, social, spatial, and probabilistic distance (Liberman and Trope, 2008). Psychological distance has been commonly considered in tourism research (Massara and Severino, 2013), and thus, tourism scholars have recently begun to adopt the construal level theory. For example, Craig and Feng (2018) use the construal level theory to show how climate and weather impact tourism sales by temporal and spatial distances. They explored the influence of temperature, precipitation, and extreme weather events on these sales. Kim et al. (2016) examine the impact of temporal and spatial distance on preferred promotional messages in the tourism industry. Their results suggest that individuals who plan vacations far into the future or to distant destinations prefer abstract promotional messages and vice versa. Tan (2018) investigates the pre-trip planning process by analyzing how destination image attributes and temporal psychological distance, such as how far or near the trip is in the future, affect travelers' planning behaviors, perceptions, and decisions. Chung and Chen (2017) illustrate how psychological distance plays a vital role in investigating the formation of travel destination images and show that travelers tend to favor superficial or abstract images when a destination is more psychologically distant. Lindblom et al. (2022) use the construal level theory of psychological distance as a useful framework for tourism and community researchers and planners. This paper compares how residents' affective responses to satisfaction vary across scenarios regarding local tourism sites.

In construal level theory, spatial distance, which refers to whether it is located far away or nearby, is one of the dimensions that often affect the extent to which people think about an event, person, idea, or place (Pronin et al., 2008). It can affect how people make decisions (Burgoon et al., 2013). This study explores how the spatial aspect of psychological distance affects consumer behavior and travel decisions. Trope and Liberman (2010) emphasize that various types of distance not only impact the level of abstraction but also significantly influence individual preferences. Despite the acknowledged importance of travel distance in tourism literature, there is a noticeable gap in research focusing on how psychological distance affects the information needed for informed decision-making (Sharples et al., 2023). Within the framework of spatial construal, tourists show distinct preferences depending on the destination's proximity. For destinations nearby, individuals seek concrete information, while for more distant places, there is a tendency to search for abstract details (Henderson et al., 2011; Kim et al., 2016). Although the significance of travel distance is well-documented in tourism literature, there remains a substantial research gap regarding the influence of psychological distance on information requirements for effective decision-making (Sharples et al., 2023).

## Social comparison theory and travel behavior

The intangibility of travel experiences makes it challenging for consumers to evaluate them, leading to an increased reliance on the opinions and images of other travelers (Liu et al, 2019). Consumers often get highly inspired by their friends' travel experiences shared on social media, such as photos and reviews, leading to a stronger intention to visit the same destination (Latif et al., 2020). To understand tourist behavior, it is important to research how social influence affects travel-related decisions, such as tourist destination or hospitality venue selection.

Social comparison theory (Festinger, 1954), which suggests that people compare themselves to each other due to self-evaluation, has drawn comparatively less attention in travel. To get a comprehensive understanding of themselves, people particularly compare themselves with others who share some similarities with them based on various factors, for example, age, gender, location, attitudes, habits, and so on (Meier and Schäfer, 2018). Social comparison theory is especially suitable for studying UGC on social media, where comparisons often occur among users due to the networking sites allowing for self-presentation using images, videos, and text (Liu et al., 2019). This theory enables us to explore how personal travel experience sharing and the influence

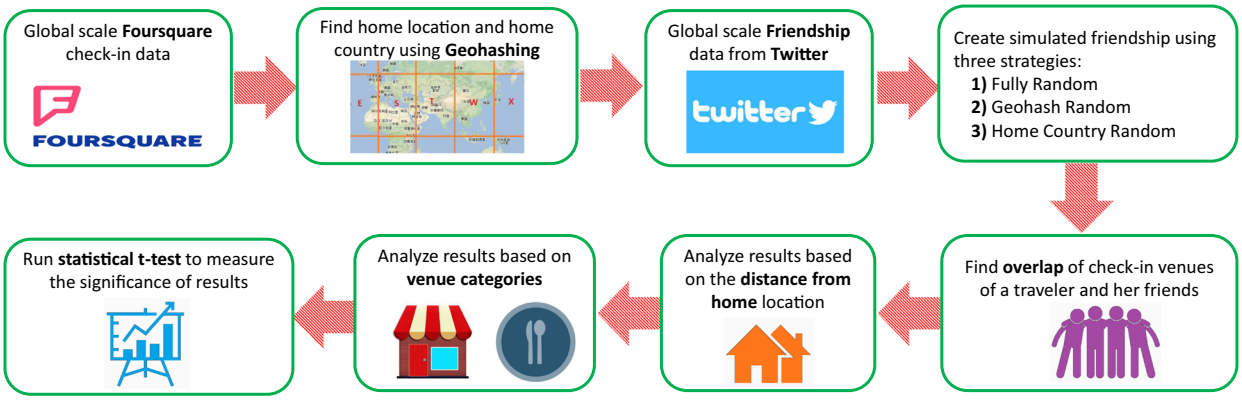


**Fig. 1** Analytical framework.

of other users on social media can impact travelers' choice of destinations and venues.

Travel has also become a marker of social status, especially among younger generations, such as Gen Z and Millennials, who are more materialistic and involved in heavy consumption. Younger generations regularly rely on social networking sites when making their purchase decision. They also compare with their peers and tend to envy their experiences on social media posts, which are also related to their travel decisions (Feng et al., 2021). Travel-related content posted by friends on social networking sites triggers social comparison as users tend to portray the positive side of their lives to appear more successful to others and increase their self-esteem and self-evaluation (Wong et al., 2019). Friends' opinions shared online about their travel experiences are very influential in travelers' decision-making process (Latif et al., 2020). Users are inspired by the luxurious experiences displayed by their peers on social media as it increases their self-esteem and perception of social status; thus, the social comparison triggers envy, which can increase the intention to visit a destination (Liu et al., 2019).

With the increased exposure to brands and travel destinations through technology, travel has become more accessible and widespread, leading to a culture of high consumption in the travel industry (Wang et al., 2016). Therefore, the level of social influence on travel decisions may vary depending on the type of venue and the level of involvement and importance it holds for the individual. Decisions to visit status-related, high-involvement venues like nightclubs are more likely to be influenced by friends on social media than utility venues such as retail shops. However, the literature has not empirically verified how social influence varies across different types of venues.

## Summary

Our review identifies several critical gaps in understanding how social media friends influence travel decisions. While recent studies have examined general patterns of social media influence (Wang and Park, 2023) and specific sharing behaviors (Ghaderi et al., 2024), there remains a lack of clarity on how these influences vary across different both venue types and distances simultaneously. Current research has not fully explored how venue characteristics might interact with psychological distance to shape social media friends' influence. Studies, such as Wu et al. (2024), analyze different dimensions of psychological distance, and Gao et al. (2023) investigate the complexity of tourist decision-making. Still, little is known about how these factors affect social media friends' specific travel choices. Moreover, while recent research has revealed sophisticated patterns in travel information sharing and processing, most studies rely on limited samples or narrow geographical contexts. To address these gaps, we build on construal level theory and social comparison theory to provide a theoretical foundation for analyzing large-scale global check-in data. The integration of the two theories suggests that social influence from social media friends likely varies based on travel distance, and venue type. For nearby destinations, where travelers can form concrete mental representations, social influence is likely to operate through detailed and specific comparisons. In contrast, social influence might work through broader and more general aspirational comparisons for distance destinations, where abstract construal dominates. Similarly, venues with higher social significance (such as prestigious restaurants or exclusive clubs) are likely more susceptible to social influence than utilitarian venues.

## Data and method

To address our research questions, we utilize a real-world, large-scale behavioral dataset to investigate how social connections impact users' travel decisions. The availability of objective digital traces supports a quantitative observational research approach, which involves analyzing naturally occurring behavioral data and applying statistical analysis (Lazer et al., 2009; Creswell & Creswell, 2017). This method enables the examination of user behaviors based on real-world activities and allows for the analysis of such activities across large populations, leading to more robust generalizations than findings derived from small-scale surveys or interviews. We analyzed patterns of check-in overlap between users and their social media friends to show the influence of friends on individuals in terms of travel choices. To support such analysis, we developed an analytics framework (illustrated in Fig. 1) to guide a structured analysis, ensuring that the analysis aligns closely with our research questions and allows the identification of user patterns in a scalable and replicable manner. Specifically, this framework investigates how friendship type, distance from home, and venue categories affect travel behavior. We used a well-established, publicly available, and anonymized global-scale dataset of Foursquare check-ins spanning from April 2012 to January 2014, collected by Yang et al. (2021). The dataset's rich and global nature has been validated in prior studies for location-based analyses (e.g., Amaro et al., 2016), which supports its reliability and suitability for our research. By identifying Foursquare-tagged tweets from Twitter Public Streams, this data includes more than 112,000 users from 254 countries, with 22 million check-ins at 3.9 million venues, alongside user social networks on Twitter. The full description of the data collection process is detailed in Yang et al. (2021). In the original data collection, the authors focused on active users, defined as those with at least one check-in per month. We did not apply additional filters to the dataset.

Since the dataset is publicly available and anonymized, accessible at https://data.4tu.nl/articles/_/15112308/1a, it protects user privacy while supporting open access. According to our institution's Research Ethics Board (REB) guidelines, no further approvals were required for secondary analysis of this type of data. These additions reinforce our commitment to ethical standards and responsible data-handling practices

Then, we find the home locations of all individuals to analyze how distance from home affects their travel choices based on the influence of friends. Since the home location of users is not always available in the dataset, we infer these using geohashing, a hierarchical spatial data structure that divides the earth into grids. Each grid represents a geographic location and is represented using a short string of characters. This technique, validated in previous research (Cho, 2011), inferred home locations by discretizing the world into grid cells and defining the home location as the cell with the highest number of user check-ins (Scellato, 2011), which achieved an accuracy rate of ~85% through manual validation. This accuracy means that in 85% of cases, the inferred home location matched the expected location for a subset of users. This high accuracy supports the validity of our home-location inference approach. In this work, we adopt a similar approach and determine a user's home location by identifying the grid with the highest number of check-ins as their home grid and calculating the average latitude and longitude of all check-ins within that grid. We use a grid size of 39.1 km × 19.5 km, which balances accuracy and practicality. This grid size is fine enough to pinpoint a user's general area of activity (e.g., a city or district) while minimizing overlap between distinct regions. It provides sufficient granularity to assign users to a specific "home" area based on check-in densities without being overly precise, which might risk misclassifying movements within a smaller area as shifts between grids. A larger grid (the next larger grid size in geohashing is 156 km × 156 km) might lack the granularity needed to capture meaningful distinctions between nearby locations, while a smaller grid (the next smaller grid size in geohashing is 4.89 km × 4.89 km) could lead to fragmented data.

The dataset also incorporates social connections among users derived from Twitter data to represent social media friends among users. In Yang et al. (2021), social media friends within the dataset are defined as a connection between two users who mutually follow each other on social media platforms. Specifically, two users are considered friends if they both follow each other and thus are connected in social networks (i.e., if only one user follows the other one and not vice versa, this does not count as a friendship).

This definition of social media friends is commonly used in social network analysis and reflects a strong, mutual connection, which is often considered a reliable indicator of real-world friendships in digital contexts. Previous research (e.g., Scellato et al., 2011; Cho et al., 2011) has shown that reciprocal ties are robust predictors of stronger interpersonal relationships. Thus, this definition of friendship is consistent with established methodologies in the field and supports the reliability of the data for our analysis. While we acknowledge that reciprocal following on Twitter does not necessarily equate to close personal friendships, it serves as a reliable proxy for identifying users who are more likely to engage with each other.

To validate if friends influence each other in travel choices, we create a set of simulated friends for each user and compare the results with social media friends. By generating three types of simulated friendships (fully random, geohash random, and home country random), we aim to identify the unique impact of social media friendships while accounting for geographical and cultural factors, distinguishing between social influence from mutual connections and general exposure to travel content.

To generate simulated friends, we follow three strategies:

1. *Fully random*: In this strategy, for each user u who has a friend v, we randomly select another user from the entire dataset (other than v) as u's simulated friend. These random friends can come from any location or social group within the Twitter network.
2. *Geohash random*: In this strategy, for each user u who has a friend v, we randomly select another user who is from the same geographic grid area (Geohash grid) as real friend v to be u's simulated friend. This allows us to assess the importance of social media friendships compared to the influence of being geographically close.
3. *Home country random*: In this strategy, for each user u who has a friend v, we randomly select another user who is from the same home country as real friend v to be u's simulated friend. Similar to Geohash random, this helps us explore whether social connections within a shared national context influence travel choices more than random connections.

After creating simulated friends, we ran our analysis to measure how friendship connections influence travel choices by examining the overlap in travel visits between users and their social media friends. To qualify as a travel visit, a check-in must occur at least 50 km away from the user's home location. Check-ins within this distance were excluded to ensure the analysis focuses on meaningful travel behavior rather than local activities, as travel activities near the user's home location typically represent routine movements. For all users, we compared the venues they visited with those visited by their friends and calculated the average percentage of overlap. We conducted this analysis separately for social media friends and each type of simulated friend (fully random, geohash random, and home country random). By comparing the overlap percentages for real and simulated friends, we measure social influence by assessing how closely a traveler's venue choices align with those of their connections. The analysis focused on key variables, including the type of friendship (real vs. simulated), the distance of venues from the user's inferred home location, and the categories of venues visited (e.g., nightlife, shops, events). This structured approach captured the role of geographic proximity, contextual factors, and the nature of connections in shaping travel behavior, directly addressing the study's research questions. Specifically, (1) We assessed how the proximity of venues to the traveler's inferred home location influences the overlap with their friends' check-ins. This dimension addresses RQ1 by examining whether social influence is stronger for venues closer to home or further away, reflecting patterns of localized versus extended social impact. (2) We investigated whether certain types of venues (e.g., nightlife, shops, events) exhibit stronger overlap patterns, addressing RQ2. This analysis identifies which types of activities or locations are more likely to be influenced by social connections.

We use statistical Mann-Whitney *U* test to see if the influence of social media friendship (i.e., venue overlap between the traveler and her social media friendship) significantly differs from the influence of simulated friendship (i.e., venue overlap between the traveler and her simulated friendship).

The framework demonstrated in Fig. 1 is highly replicable due to its use of publicly available data, standardized methodologies, and adaptable techniques. Geohashing for home location inference and simulated friend strategies (fully random, geohash random, and home country random) are flexible for application to various datasets, such as Instagram or Google Maps data. The study ensures reliability through consistent use of the venue overlap metric and validated methods, while its validity is reinforced by isolating the influence of social media friendships using simulated controls. The global scale and diversity of the dataset

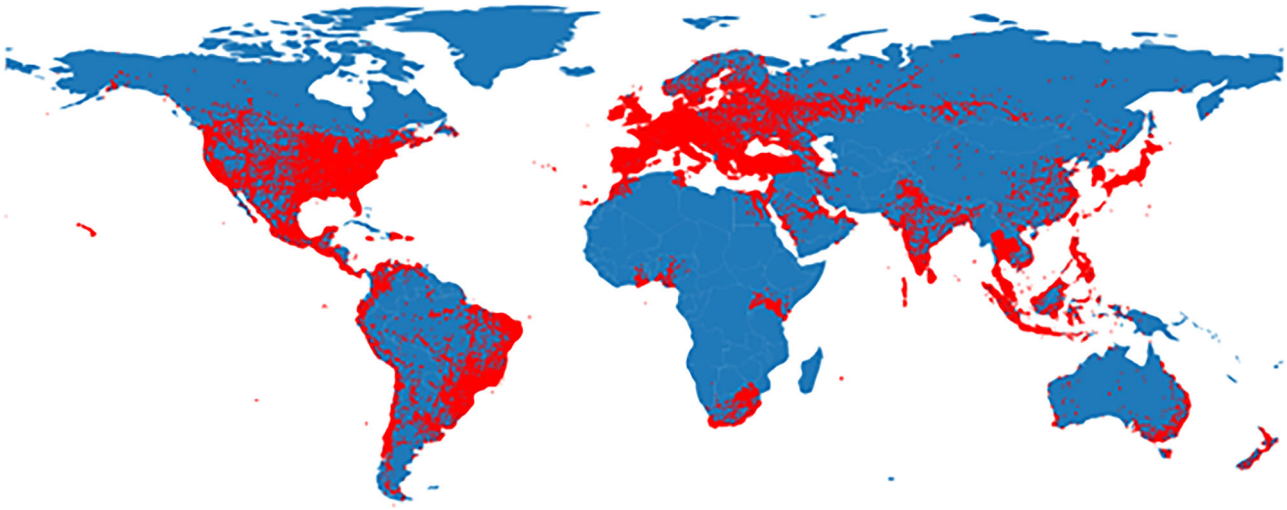

**Fig. 2** Distribution of check-in points on the map.

enhance external validity, making the findings generalizable across different social and geographic contexts.

## Findings

This section outlines the results from our analysis to answer our research questions. The distribution of 22 million check-ins from over 112,000 users is shown on the map in Fig. 2.

**Analyzing findings for research question 1 (RQ1)**. To analyze RQ1: Will the influence of social media friends on each other vary based on the distance of the trip to their home? We present our results in Fig. 3 (top chart). This chart shows the average percentage of venues visited by travelers that overlap with those visited by their friends, revealing how the influence of friends changes with increasing distance from the travelers' homes. We measured this influence by using distance thresholds ranging from 50 km to 10,000 km. For each threshold, we calculated the percentage of venues visited by both travelers and their friends, including only venues that were farther than the specified distance from the traveler's home.

In our analysis, we use non-mutually exclusive distance bins because social influence often spans multiple distances rather than being limited to one specific range. This approach helps us capture the full picture of how influence works across different distances, as people can be influenced by friends at various overlapping ranges. By not separating the bins completely, we avoid losing important connections that might happen across multiple distances. The percentage of overlapping venues among social media friends exceeds 12% when the minimum distance to home is set to 50 km. This percentage gradually decreases as the distance to the home location increases, reaching over 5% when the minimum distance is set to 10,000 km. This decrease aligns with expectations, as individuals often have friends in their geographical neighborhood, which results in more shared visits to local venues during short trips.

Moreover, when comparing social media friendships to simulated ones, the venue overlaps for social media friends is nearly twice as high as when friendships are simulated based on geo-hash or home country. This difference becomes even more pronounced when friendships are simulated fully randomly, showing much larger distinctions. These contrasts are statistically significant, as confirmed by Mann-Whitney $U$ tests ($p < 0.01$ for comparisons with fully random, geo-hash, and home-country-based simulated friends). These findings address the research question (RQ1) by showing that social media friendship exerts a significant influence on a traveler's choices and behaviors, irrespective of the specific location associated with the friends. Furthermore, the impact of friends on a traveler's decisions varies based on the distance of the traveler from their home location.

**Analyzing findings for research question 2 (RQ2)**. To answer RQ2: Will the influence of social media friends on each other vary based on the type of venues they visit? Our analysis, shown in Fig. 3 (bottom charts), explores how friends influence each other in visiting ten different venue categories, as defined by Foursquare. We focus on two minimum distances from home: 100 km and 1000 km. Focusing on only two distances makes it easier to interpret the results and highlights how spatial proximity (e.g., close vs. distant relationships) affects social influence. These results suggest that friends affect each other in visiting all kinds of venues. The difference in the overlap between social media friends and all three types of simulated friends (fully random, geohash random, and home country random) is significant for nearly all venue categories except for the "Event" category. This significance is confirmed using the Mann-Whitney $U$ test ($p < 0.01$). For the "Event" category at 100 km, social media friends show a significant difference compared to fully random simulated friends ($p < 0.01$) but not compared to geographic proximity simulated friends, including geo-hash-based ($p = 0.041$) or home-country-based simulated friends ($p = 0.238$). For the "Event" category at 1000 km: There is no significant difference between social media friends and any of the simulated friend types ($p = 0.824$ for all). Overall, the effect of social media friends on each other varies based on the venue category, which addresses RQ2. Of all categories, Travel and Transport venues have the highest overlap among friends, followed by Shop and Service venues, Nightlife venues, Arts and Entertainment venues, and College and University. Event venues show the lowest overlap, indicating less social influence in this category.

## Discussion and conclusion

This study examines how social media friendships affect individual travel decisions by analyzing 22 million check-ins from Foursquare and Twitter connections. Our findings provide new insights into how social influence operates across geographic distances and different types of venues.

1) Geographic distance and social influence

Our analysis quantifies the degree to which social media friends influence each other's travel choices, revealing that the

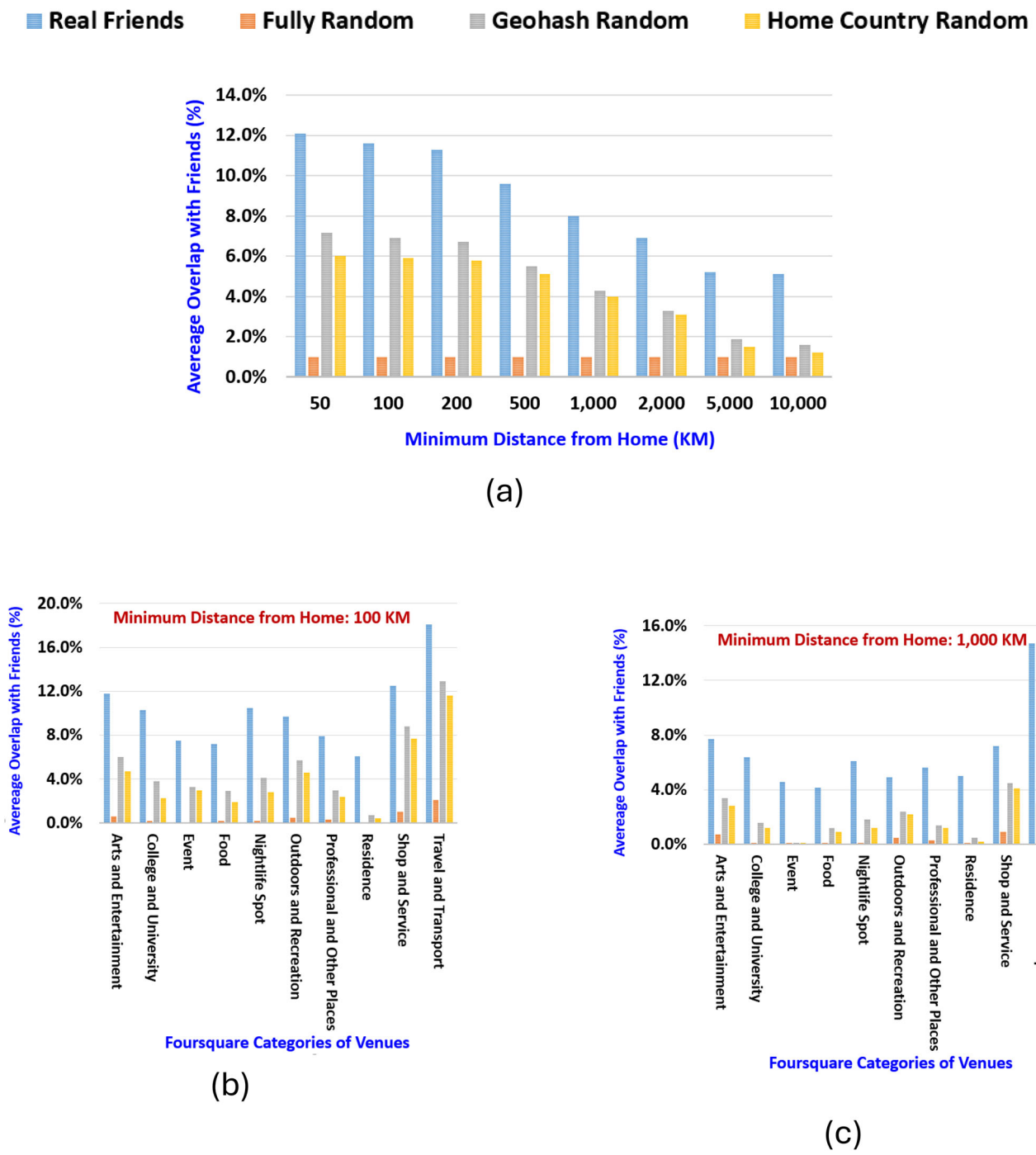


**Fig. 3 Average percentage of overlapping venues visited by each user and her social media friends. a** Average venue overlap with friends across distance thresholds (50–10,000 km). This panel shows how average venue overlap between travelers and their friends changes with increasing distance from home. Social media friendships are compared to three types of simulated friendships: geohash proximity, shared home country, and fully random. **b** Average venue overlap with friends across ten categories, for visits occurring at least 100 km from home. Average venue overlap across ten categories is shown for social media friends, compared with three types of simulated friendships: geohash proximity, shared home country, and fully random. **c** Average venue overlap with friends across ten categories, for visits occurring at least 1000 km from home. Average venue overlap across ten categories is shown for social media friends, compared with three types of simulated friendships: geohash proximity, shared home country, and fully random.

impact of friends on a traveler's decisions varies based on the distance from their home location. Specifically, social media friends exhibit a higher venue visit overlap at shorter distances, but this overlap declines for distant locations, suggesting that social influence weakens as travel distance increases. This aligns with construal level theory, which suggests that tourists' preferences vary by destination proximity and explains how spatial distance influences information processing. For destinations nearby, individuals seek concrete information, while for more distant places, they tend to search for abstract details (Henderson et al., 2011; Kim et al., 2016).

Notably, when compared to simulated friendships—based on random selection, geographic proximity, or home-country proximity—social media friendships exert a stronger influence

on venue selection. Travelers are more likely to visit places their social media friends have been, suggesting that influence is primarily driven by social relationships rather than shared geographic location. In other words, geographic proximity plays a lesser role compared to the influence of digital social circles, aligning with the idea from social comparison theory that individuals look to their social circles as important points of comparison (Festinger, 1954). This is particularly relevant in the context of social media platforms, where comparisons frequently occur as users engage in self-presentation through images, videos, and text (Liu et al., 2019). These findings address RQ1 by showing that social media friendship exerts a significant influence on a traveler's choices and behavior, demonstrating the unique power of online networks beyond physical proximity

2) Venue type and social influence

Our study reveals that social influence varies significantly across different venue types. Among the ten categories analyzed, Travel and Transport locations exhibit the strongest friend influence, followed by Shopping, Nightlife, Arts & Entertainment, and College & University venues, suggesting that venues associated with travel and experience-driven activities are more likely to be influenced by social networks. In contrast, Event venues show the least overlap among friends, indicating that event attendance is less influenced by social media friendships. This is likely due to personal interests that reduce the role of social networks in shaping these decisions. This pattern holds true for both nearby (100 km) and distant (1000 km) travel, although the strength of social influence decreases with distance across all venue categories.

When compared to simulated friendships, including random selection, geographic proximity, and home-country proximity—all venue types, except Events, show a significant difference, confirming that social influence is the primary driver of various travel decisions. In contrast, the lack of significant influence for Event venues suggests that event-based travel is more likely dependent on individual preferences or scheduling availability, making peer influence less relevant in these decisions. These findings confirm RQ2 by demonstrating that social media friends' influence on each other varies based on the type of venues they visit.

These findings have important theoretical implications for understanding how social influence operates across different spatial and venue contexts, while also offering practical insights for businesses seeking to leverage social networks in their marketing strategies.

## Theoretical implications

This research significantly advances our theoretical understanding of how social media shapes travel behavior through two complementary frameworks: social comparison theory and construal level theory.

First, our findings substantively extend social comparison theory in the social media and travel context. Traditional social comparison theory suggests that individuals evaluate themselves relative to others to determine their social status and self-worth (Meier and Schäfer, 2018). Our research demonstrates how this comparison process manifests in actual travel behaviors at an unprecedented scale. The significantly higher venue overlaps between real social media friends compared to simulated connections confirm that individuals actively coordinate and mirror their social media friends' travel choices. This behavior aligns with recent research showing how frequent travelers carefully consider their digital audience when sharing experiences, creating a recursive cycle of influence (Ghaderi et al., 2024). This empirical validation of social comparison processes advances our understanding beyond theoretical predictions to demonstrate how social media platforms transform traditional comparison mechanisms into actionable travel decisions in the digital age.

Second, our research provides novel insights into how construal level theory operates in modern travel decision-making. The finding that venue overlaps decrease from 12% at 50 km to 5% at 10,000 km validates theoretical predictions about psychological distance affecting behavior. This pattern aligns with recent studies demonstrating how spatial distance moderates social influence in travel decisions (Gao et al., 2023). Moreover, our analysis of different venue categories reveals how construal level varies not just with distance but also with venue type, extending theoretical understanding of how psychological distance operates across different consumption contexts. The dual influence of distance and venue type suggests that construal level theory should be expanded to consider not just the spatial dimension of distance but also the social significance of different consumption settings in shaping how people process and act on travel-related information.

Our methodological approach significantly strengthens these theoretical contributions. While previous studies relied primarily on small-scale surveys or interviews (Meier and Schäfer, 2018), our analysis of actual behavioral data across global platforms provides unprecedented insight into how social influence operates in practice. This dataset in our study is one of the most comprehensive resources available for studying these dynamics, offering a robust foundation for generalizable and scalable findings. This approach addresses limitations noted in recent research regarding the need for more comprehensive empirical evidence of how social media shapes travel decisions (Wang and Park, 2023). Particularly novel is our ability to trace specific influence through data sources from different platforms—Twitter social connections and Foursquare venue visits. This granular analysis advances beyond previous theoretical frameworks by demonstrating precise mechanisms through which social comparison and psychological distance affect actual travel choices. Interviews or surveys, while valuable for in-depth insights, are limited by self-report biases and scalability challenges, making them less suitable for observing broad, natural behaviors across diverse contexts (Olteanu et al., 2019). Our approach captures natural social interactions and travel behavior at a global scale, which interviews could not easily accomplish (Golder and Macy, 2014).

## Practical implications

Based on our study's findings of how social media friends influence travel decisions, we offer several key practical implications for industry stakeholders. First, for destination marketing organizations (DMOs) and venues, our analysis reveals significant opportunities to leverage friend networks in marketing strategies. The higher percentage of overlapping venues between social media friends compared to simulated connections suggests that targeting friend groups could be more effective than individual marketing. DMOs could partner with social platforms to identify and target connected user clusters, such as by applying clustering techniques to uncover different types of travelers (Ghosh & Mukherjee, 2023) in key feeder markets, emphasizing shared experiences and group-focused promotions.

Second, geographic targeting also emerges as an important strategy, given our finding that friend influence is stronger for shorter trips closer to home. Marketers should focus on core feeder markets within certain radiuses, creating campaigns that highlight local connections and reunion opportunities. This could be particularly effective when timed around periods associated with hometown gatherings. The varying influence across venue categories suggests differentiated strategies for different types of

establishments. Experiential venues like restaurants, bars, and tourist attractions should particularly focus on group-oriented promotions and social sharing features, as these categories showed stronger friend influence patterns.

Finally, our findings for social platforms suggest enhancing social features that facilitate group coordination and venue discovery. This could include developing more sophisticated recommendation systems based on friend networks and improving features that help users coordinate venue visits with their connections. Such enhancements align with current trends in tourism recommender systems, which emphasize leveraging new technologies and data sources, such as social networks, to provide personalized and effective recommendations (Solano-Barliza et al., 2024). Specifically, these enhancements should focus on utilizing demonstrated patterns of social influence in travel decision-making and recommendation processes.

## Limitations and future research

This study has three key limitations that suggest directions for future research. First, our reliance on historical Foursquare check-ins matched to Twitter connections provides only a partial view of social influence patterns. Future research should expand to real-time data collection across multiple platforms (Facebook, Instagram, Snapchat) and incorporate mixed methods. For instance, combining user-nominated friend connections with interaction data (messaging, tagging, link-sharing) could help develop weighted influence scores similar to Lin et al. (2014), potentially offering a more accurate reflection of relationship strength. We plan to adopt a mixed-methods approach by integrating qualitative data, such as platform conversations or user interviews, to complement our quantitative findings. Second, the lack of demographic attributes for users constrains our understanding of how social influence varies across different groups. Future studies should collect or infer demographic data to examine how factors like nationality, gender, and age affect friend influence patterns in travel decisions (Kim et al., 2025; Popșa, 2024). This would help reveal whether certain demographic segments show stronger peer effects in their venue choices while traveling. Finally, while our venue category analysis provides broad insights, it lacks brand-level granularity that would be valuable for precise targeting. Future research could link venue categories to specific brands, enabling the analysis of brand preference mimicry among friends, as social group mimicry has been shown to shape consumer preferences for differentiated brands (Jiang et al., 2024). This could identify which brands are most "viral" in terms of visit patterns propagating through friend networks, offering deeper insights into social influence dynamics.

## Conclusion

This study advances our understanding of how social media friends influence travel behavior through an analysis of a large-scale dataset sourced from Foursquare and Twitter. Our findings reveal systematic variations in social influence based on both geographic distance and venue type, with friend influence being strongest for nearby destinations and particularly pronounced in Travel and Transport venues. These patterns provide empirical support for both social comparison theory and construal level theory in travel decision-making, while offering practical insights into tourism management. Our methodology demonstrates the value of analyzing actual behavioral data across platforms to understand social influence, though we acknowledge limitations in our reliance on historical data from specific platforms. As social media continues to reshape travel decision-making, this research provides a foundation for future studies investigating real-time data across multiple platforms, demographic variations, and brand-level effects in social influence patterns.

## Data availability

The datasets generated during and/or analyzed during the current study are available in: Yang, D., Qu, B., Yang, J., & Cudré-Mauroux, P. (2021). LBSN2Vec++: Global-scale check-in dataset with user social networks (version 1) [Data set]. 4TU.ResearchData. https://doi.org/10.4121/15112308.V1.

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## Author contributions

XY: methodology development, writing, conceptualization, data analysis. ZL: literature review, theory development, writing, conceptualization. MK: methodology development, proofreading, data analysis. ED: literature review, theory development.

## Competing interests

The authors declare no competing interests.

## Ethical approval

Ethical approval was not required. The research data is publicly accessible and anonymous, sourced from public data. It does not contain identifiable information. According to the policy of the corresponding author's university (Toronto Metropolitan University) Research Ethics Board (REB), ethical approval is not required for research using exclusively secondary anonymous information as long as the data linkage, recording, or dissemination processes do not reveal identifiable information.

## Informed consent

Data used in this study were publicly available from Yang, D., Qu, B., Yang, J., & Cudré-Mauroux, P. (2021). LBSN2Vec + +: Global-scale Check-in Dataset with User Social Networks (Version 1) [Data set]. 4TU.ResearchData. https://doi.org/10.4121/15112308.V1. Since data are being reused from prior publications, such as: (1) Dingqi Yang, Bingqing Qu, Jie Yang, Philippe Cudre-Mauroux, Revisiting user mobility and social relationships in LBSNs: A hypergraph embedding approach, In Proc. of The Web Conference (WWW'19). May. 2019, San Francisco, USA. (2) Dingqi Yang, Bingqing Qu, Jie Yang, Philippe Cudre-Mauroux, LBSN2Vec + +: heterogeneous hypergraph embedding for location-based social networks, IEEE Transactions on Knowledge and Data Engineering (TKDE), 2020 The consent was assumed to have been obtained by the prior publications.

## Additional information

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