

Linking travel behavior and tourism literature: Investigating the impacts of travel satisfaction on destination satisfaction and revisit intention

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ARTICLE INFO

Keywords:

Destination satisfaction
Revisit intention
Tourism
Travel behavior
Travel satisfaction
Satisfaction with travel scale
Structural equation modeling

ABSTRACT

This study aims to link two closely related domains in literature – travel behavior and tourism. Travel behavior studies partly aim to improve travel satisfaction by exploring its relationships with overall and domain-specific life satisfaction. Tourism studies, on the other hand, focus on improving the attraction and sustainability of tourism destinations and often investigate the factors affecting destination satisfaction and revisit intention. The present study uncovers the interconnections between travel behavior and tourism by investigating the impacts of travel satisfaction on destination satisfaction and revisit intention. An online survey of 696 visitors to national parks in the US conducted in the Summer of 2022 was analyzed using a structural equation modeling approach. Analysis results show that travel satisfaction has a direct impact on destination satisfaction and both direct and indirect (through destination satisfaction) impacts on revisit intention. Also, interestingly, results reveal that travel satisfaction has a stronger impact on revisit intention than destination satisfaction. These results offer an important implication to the tourism destination managers that investing in destination attributes alone might not be sufficient to attain the desired level of tourism for the destination. Thus, an area to be focused on is improving the satisfaction and experiences of travelers on the way to their destination. This could be achieved by investing in transportation infrastructures, networks, facilities, and services connecting major tourism destinations and city centers.

1. Introduction

The study of ways to improve quality of life is of keen interest to researchers and policymakers across various disciplines, including travel, tourism, health, sociology, and psychology (Zhang, 2017). Both travel behavior (De Vos, 2019) and tourism (Smith & Diekmann, 2017) literature acknowledge the respective roles of daily travel or commute experiences and tourism activities on life satisfaction and overall well-being. Realizing these relationships, travel behavior studies have suggested transportation agencies minimize congestion (Ye & Titheridge, 2017), reduce travel time (Higgins et al., 2018), develop and promote advanced and safer vehicles (e.g., autonomous vehicles), design leisure and work-friendly vehicle interiors (de Almeida Correia et al., 2019), etc. as ways to offer pleasant and satisfying travel experiences to the travelers. Tourism studies, on the other hand, have recommended tourism destination managers develop infrastructures in the destination and area around it (Sangpikul, 2018), offer affordable tour packages to the visitors (Ghose & Johann, 2018), arrange convenient transportation

services around destinations (Loi et al., 2017; Thompson & Schofield, 2008), offer good food and accommodation facilities around the destination (Heung & Qu, 2020), etc. for exceptional tourism experience and sustained and repeated tourism. However, an important part of tourism travel—that is the emotions and experiences of travelers when traveling from home to destination—is seldom considered in either tourism or travel behavior literature, which therefore is the focus of this study.

A plethora of existing studies (summarized in the literature review presented in Section 2) has somehow considered and found the significant impacts of transportation services, facilities, and experiences on tourism satisfaction. These studies conclude that accessibility, service quality, perceived value, and image of the transport system influence tourism satisfaction (Virkar & Mallya, 2018). However, they lack looking at a potentially important dimension of tourism travel: emotions experienced by the visitors when traveling from home to tourism destinations. The only relatable study that has considered this aspect is De Vos (2019), which asserted that there is a significant impact of affective and cognitive dimensions of travel emotions and experiences on the

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satisfaction with leisure activities conducted at the destination. In a country like the US, where the travel time and distance of tourism or recreational trips are relatively high (see [NHTS, 2022](#)), the investigation of the role of travel experiences and emotions on tourism destination satisfaction can be considered more important. Thus, deriving the data from US national park visitors, this study investigates the impact of travel satisfaction, a measure of affective emotions and cognitive evaluations of travel experience while traveling between home and destination, on destination satisfaction and revisit intention. Study findings are expected to offer important policy implications to the tourism destination managers, including the answer to the questions of whether they should take care of transportation infrastructures beyond the destination premises to improve visitors' travel experiences and attraction of destinations.

The remainder of this paper is organized as follows. [Section 2](#) presents the review of tourism and travel behavior literature and conceptualizes the research model. [Section 3](#) outlines the data collection procedure adopted and the descriptive statistics of the data. [Section 4](#) describes the methodology adopted to attain the study objective. [Section 5](#) presents the analysis results and related discussion. And lastly, study conclusions, implications, and limitations are presented in [Section 6](#).

2. Literature review and research model

2.1. Destination satisfaction and revisit intention

The quality and performance of tourism destinations are often judged by the combination of two attributes: destination satisfaction and revisit intention. First, destination satisfaction refers to the aggregate feeling experienced by an individual after and/or during a visit to a destination ([Cole & Scott, 2004](#)). Destination satisfaction is measured either in the form of attribute satisfaction or overall satisfaction. Attribute satisfaction assesses the satisfaction level of the visitor on various attributes of the destination whereas overall satisfaction measures the visitors' level of satisfaction holistically. Depending upon the type of destination studied, common destination attributes considered by existing studies are nature, culture, service, infrastructure, accommodation, and food. Additionally, research has shown that individual attribute satisfaction leads to overall destination satisfaction (e.g., [Chi & Qu, 2009](#); [Hall et al., 2017](#); [Yuan et al., 2018](#)). Knowing the direct impacts of destination satisfaction on the destination's popularity, revisit intention, word-of-mouth publicity, consumption of products and services, and loyalty ([Kozak et al., 2005](#)), the monitoring of destination satisfaction and investigation of its influencers are crucial to destination managers to enhance visitors' overall destination experience and develop an effective destination marketing strategy.

Second, revisit intention is defined as the behavioral intention of a visitor to visit the destination again in the future. It is often called the strongest indicator of destination loyalty. The measurement of revisit intention is common because it is closely related to the concept of repeat tourism, which states that the sustainability and growth of a tourism destination rely (and should aim) on the tourists who repeat their visits rather than on the first-time visitors only ([Meleddu et al., 2015](#); [Van Dyk et al., 2019](#)). Realizing this, a plethora of studies in the literature have investigated the factors affecting revisit intention and concluded that destination satisfaction is one of the strongest factors affecting revisit intention (e.g., [Campo-Martínez et al., 2010](#); [Humagain & Singleton, 2021](#); [Lee et al., 2020](#); [Pai et al., 2020](#)).

2.2. Role of transportation services and experiences in tourism

While looking at the role of transportation services and experiences in tourism, two concepts, i.e., 'transport as tourism' and 'transport for tourism' need to be understood first ([Page and Connell, 2014](#)). First, the 'transport as tourism' concept states that transportation itself could be a tourism activity; for example, driving on a scenic route, sailing on a

cruise or taking a cruise, riding in a gondola, etc. Transportation services and facilities being the major attraction of these 'transport as tourism' destinations, destination managers aim to provide exceptional transportation services and experiences to visitors. Past studies have investigated the impact of transportation facilities, services, and visitors' experiences on overall destination satisfaction and revisit intention. Findings show that self-drive visitors (visitors who drive on routes for tourism) value the availability of road facilities ([Wu et al., 2018](#)), roadside facilities ([Denstadli & Jacobsen, 2011](#)), and scenery ([Wu et al., 2018](#)) on the route as important determinants of tourism satisfaction. Similarly, cruise tourists were found to consider the duration and cost of cruising ([Kawasaki & Lau, 2020](#)), the facilities available onboard (such as Wi-Fi, currency exchange, and shopping) ([Di Vaio et al., 2021](#)), and crowding in the cruise ([Sanz-Blas et al., 2019](#)) as influencers of cruising satisfaction and loyalty. Overall, managers of 'transport as tourism' destinations acknowledge the significant role of transportation facilities, services, and experiences for sustained and repeated tourism and put forward their efforts in investing in transportation facilities and services to improve visitors' transportation experience. Also, some travel behavior studies believe in the existence of what they call 'undirected travel' or 'travel for its own sake' whereby trips have no destination, or the destination is ancillary to the travel (e.g., [Hook et al., 2022](#); [Mokhtarian and Salomon, 2001](#)). These trips (e.g., recreational walking, cycling, jogging) show that travel can have positive utilities in itself (e.g., the sensation of speed, exposure to the environment), and may therefore be perceived as more positive than other types of trips ([Hook et al., 2021](#)).

Second, the concept of 'transport for tourism' emphasizes the importance of transportation facilities and services in tourism destinations that are not specialized for 'transport as tourism'. Any tourism destinations not meant primarily for transportation activities, such as national parks, fall under this category. These destinations mostly focus on providing exceptional tourism services by investing in infrastructures (within the destination and the area around), offering several accommodations and entertainment packages, and offering easy parking and transportation services ([Benur & Bramwell, 2015](#)). Within this list, the necessity of convenient transportation and parking services in the tourism destination and the area around it falls under the concept 'transport for tourism'. However, tourism literature only started realizing this concept more recently, such that only a few studies have investigated the role of transportation facilities, services, and experiences on destination satisfaction and revisit intention. [Thompson and Schofield \(2007\)](#) found a positive impact of ease of use of public transit facilities on destination satisfaction and revisit intention for Manchester, UK visitors. The quality of the tourist shuttle, measured from experiences with staff hospitality, punctuality of service, travel efficiency, and safety while traveling, was found to impact the satisfaction of the visitors of Macao city, China ([Loi et al., 2017](#)). Similarly, the choice of tourism destinations in Spain was influenced by the availability of convenient high-speed rail transportation ([Pagliara et al., 2015](#)). Apart from the transit services in destinations, [Seetanah and Nunkoo \(2020\)](#) found a positive role of visitors' satisfaction with airport services on their destination revisit intention. Overall, studies have concluded that the availability of convenient transportation services and facilities within the destination and the area around it plays a significant role in improving destination satisfaction and loyalty.

2.3. Travel satisfaction

Travel satisfaction is a measure of a traveler's experienced emotions and cognitive evaluation of travel resulting either from a specific trip or general daily travel ([De Vos & Witlox, 2017](#)). It is generally measured either by asking the travelers to rate a single statement about their travel (example question: *how would you rate your overall satisfaction level while traveling from origin to destination?*) or by asking the travelers to rate multiple statements about the travel experience. Among these two ways,

travel behavior literature agrees that measurement by multiple items, which covers both affective emotions and cognitive evaluation of travel, is superior to single-item measurement, which mostly captures the cognitive evaluation of travel only. The most widely adopted multiple-item measurement scale of travel satisfaction is the satisfaction with travel scale (STS), where travelers are asked to indicate to what extent they experienced certain emotions and evaluated their travel. Original STS (Ettema et al., 2011) had nine items measuring three travel satisfaction dimensions: (1) positive deactivation (*time-pressed – relaxed, worried – confident, stressed – calm*), (2) positive activation (*tired – alert, bored – enthusiastic, fed up – engaged*), and (3) cognitive evaluation (*worst – best, low – high standard, worked well – poorly*). The STS has been modified in different research settings (Acharya et al., in progress; see also De Vos et al., 2015; Smith, 2017; Singleton, 2019a).

In the travel behavior literature, the measurement of travel satisfaction is considered a top priority because of its relationships with satisfaction with different life domains and overall life satisfaction or well-being (Mokhtarian & Pendyala, 2018). Research has shown a strong connection between commute satisfaction and work satisfaction (Abou-Zeid and Ben-Akiva, 2011), leisure travel satisfaction and activity satisfaction at the destination (De Vos, 2019), and daily travel satisfaction and overall well-being (Friman et al., 2017). Also, some studies (e.g., De Vos & Witlox, 2017; Mouratidis, 2020) suggest that daily travel satisfaction affects the choice of travel mode and residential location (in the long term) or vice versa. Realizing the importance of travel satisfaction, a plethora of studies have investigated the factors affecting travel satisfaction in search of ways to improve travel satisfaction (e.g., Chen et al., 2022; Ettema et al., 2012, 2017; Singleton, 2019b; Smith, 2017; Sukhov et al., 2021; Ye and Titheridge, 2017; Acharya et al., in progress). Results of these studies show that socio-demographic characteristics, travel mode, travel time (perception), built environment and spatial attributes, travel-based activities, and individual attitudes affect one's evaluation of travel.

2.4. Summary and research model

The review of tourism and travel behavior literature presented above shows that studies linking these two domains are lacking. On the one hand, tourism literature focuses on enhancing the attraction of tourism destinations and has considered the role of transportation services and experiences in destination satisfaction and revisit intention. However, the transportation services and experience looked at in these studies are limited to the transportation facilities within the destination or area around it. To our knowledge, none of the studies in the tourism literature

have investigated the role of transportation and travel experience (while traveling from home to destination and destination to home) on destination satisfaction and revisit intention. On the other hand, travel behavior literature acknowledges the importance of travel satisfaction in improving life satisfaction and well-being, but the literature lacks analysis of the role of travel satisfaction on tourism destination satisfaction and revisit intention. Thus, the primary objective of this study is to link tourism and travel behavior literature by investigating the impact of travel satisfaction (experiences of travel between home and destination) on destination satisfaction and revisit intention.

To attain the study objective, we propose a research model, shown in Fig. 1, that hypothesizes the connections between travel satisfaction, destination satisfaction, and revisit intention. With the literature precedence on the significant impact of transportation services/experiences within the destination and the area around it (including airport services) on destination satisfaction and revisit intention, we hypothesize that travel satisfaction has a significant impact on destination satisfaction and revisit intention. Also, in line with existing tourism literature, we hypothesize a direct positive impact of destination satisfaction on revisit intention. With these two hypotheses, destination satisfaction is considered to mediate the impact of travel satisfaction on revisit intention. The impacts of travel satisfaction on destination satisfaction and revisit intention are controlled by the socio-demographic and trip characteristics of the respondents. The proposed model also hypothesizes the effects of socio-demographic and trip characteristics on travel satisfaction, but these effects are not estimated in this paper since a companion paper (Acharya et al., in progress) has calculated and presented these effects. Travel satisfaction is measured from a modified STS scale consisting of nine items whereas destination satisfaction and revisit intention are measured as single items. Utilizing the data collected from US national park visitors, the proposed research model is analyzed using the structural equation modeling (SEM) framework.

3. Data

The data used in this study was gathered from an online survey the authors conducted in the Summer of 2022 (see Acharya, 2022 for the complete questionnaire). The survey was part of a larger study designed to assess long-distance recreational travel behavior and preferences toward autonomous vehicles. In the survey, long-distance recreational travel was defined as travel intended for pleasure and recreation and involving at least 75 miles of travel one-way. Thus, the respondents of the survey were those who had visited one of the national parks of the US in 2022 by driving at least 75 miles one way, and no air travel was

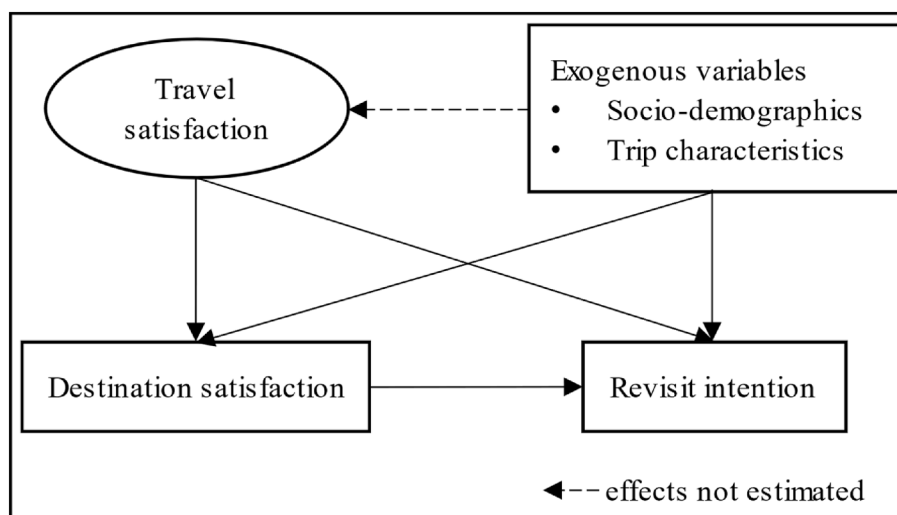


Fig. 1. Proposed research model.

involved in the trip. The detailed information provided by the respondents about their most recent trips to national parks, including their travel experiences and destination satisfaction, are used in this study. The survey was distributed online using Qualtrics and 696 complete responses were collected. The following sections present the descriptive statistics of destination satisfaction and revisit intention, indicators of travel satisfaction, and the socio-demographic and trip characteristics of the sample along with their measurement.

3.1. Destination satisfaction and revisit intention

The destination satisfaction of national park visitors and their intention to revisit the destination are two outcome variables considered in the study, which are referred to as **destination satisfaction** and **revisit intention**, respectively. Both destination satisfaction and revisit intention were measured from single 5-point Likert scale questions. Though measuring revisit intention using a single question is common in literature, there exist two common ways to measure destination satisfaction – by measuring either individual attribute satisfaction or overall satisfaction. We adopted a single overall satisfaction question to measure destination satisfaction given the direct impact of attribute satisfaction on overall satisfaction found in the literature. The wording of questions, choice categories, and the distribution of responses for both variables, destination satisfaction and revisit intention, are presented in [Table 1](#). The response distributions are negatively skewed with positive means as most of the respondents had positive perceptions towards destination satisfaction and revisit intention. While comparing the responses on destination satisfaction and revisit intention, visitors were found to have a slightly higher destination satisfaction (mean: 4.649) than revisit intention (mean: 4.427).

3.2. Indicators of travel satisfaction

Being the primary variable of interest in the study, travel satisfaction was measured from a comprehensive multi-item scale of travel satisfaction measurement called the Satisfaction with Travel Scale (STS) which assesses both affective and cognitive dimensions of travel experience. Thus, in the questionnaire, respondents were asked to rate nine statements about how they felt while traveling on a five-point semantic differential scale. The wording of the statements/items of STS was adapted from [Singleton \(2019a\)](#), which modified/validated the STS developed by [Ettema et al. \(2011\)](#) (and later modified by [De Vos \(2015\)](#)) for the US context. The list of the statements asked in the questionnaire and the distribution of responses are presented in [Fig. 2](#). The distribution shows that more than three-quarters of the sample had positive perceptions (ratings 4 and 5, out of 1–5) towards the statements of travel satisfaction.

Table 1
Sample data for destination satisfaction and revisit intention (n = 696).

Variable	Question	Descriptive statistics		
		Response category	#	%
Destination satisfaction	How would you rate your overall satisfaction with this visit to [destination]?	Extremely dissatisfied	4	0.57
		Somewhat dissatisfied	6	0.86
		Neither satisfied nor dissatisfied	14	2.01
		Somewhat satisfied	182	26.15
		Extremely satisfied	490	70.40
		On average	4.649 (mean)	0.624 (s.d.)
Revisit intention	How likely do you think that you would visit [destination] again in the future?	Extremely unlikely	9	1.29
		Somewhat unlikely	18	2.59
		Neutral	43	6.18
		Somewhat likely	223	32.04
		Extremely likely	403	57.90
		On average	4.427 (mean)	0.824 (s.d.)

3.3. Socio-demographic and trip characteristics

To control for the impacts of travel satisfaction on destination satisfaction and revisit intention, several socio-demographic and trip characteristics of the respondents are considered in the study. The variables considered, and their descriptive statistics are presented in [Table 2](#).

The sample consisted of adults only such that the age was at least 18 years. Among them, more than half (58.85 %) belonged to the 35–64 years age category. The proportion of females (56.90 %) was slightly higher than that of males (43.10 %). In terms of race, more than three-quarters of respondents were white. More than half of the sample had at least an undergraduate degree (58.19 %). The proportions of students (26.44 %) and unemployed individuals (30.17 %) in the sample were almost equal. The annual household income of almost half of the sample (49.14 %) lay between \$25 k and \$75 k. The average number of adults (age >18 years) and children (age <18 years) in the household of the sample were 2.18 and 0.98, respectively. All respondents had a driving license, and the average driving experience reported was 25.66 years. The average number of household vehicles in the sample was 1.52. Respondents reported that they typically make 3.32 long-distance recreational trips in a year, on average.

The socio-demographic characteristics of the US population (obtained from the American Community Survey Data ([US Census Bureau, n.d.](#))) are compared with the respondents' characteristics to assess the representativeness of the sample ([Table 2](#)). The sample and US population distribution look fairly similar for age, gender, race, and income. Compared to the US population, middle-aged (35–64 years) individuals, females, whites, and individuals from middle-income households (\$25–100 k) were slightly overrepresented in our sample. Since these discrepancies were small, no weighting of the sample was performed before analysis.

Based on the characteristics of the recent long-distance recreational trip made by the respondents, the average one-way travel time and travel cost in the sample were found to be 10.89 h and \$193.30 respectively. During the travel, there were 2.36 travel companions on average in the sample, out of which travelers' spouses account for 65.09 %. Around one-third of the sample (38.65 %) were first-time visitors to the destination. Slightly less than half of the sample (47.12 %) stayed at the destination for at least two nights.

4. Methodology

We used confirmatory factor analysis (CFA) and structural equation modeling (SEM) techniques in this study. The measurement structure of travel satisfaction was defined using CFA. A measurement model defines the relationship between unobserved latent factors and observed items. Here, travel satisfaction was considered the second-order factor

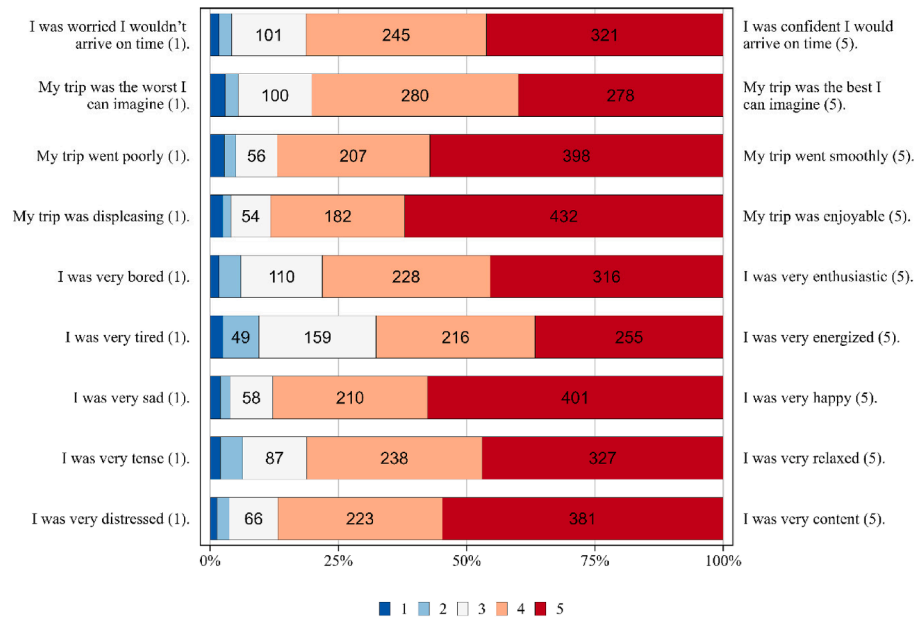


Fig. 2. Sample data for travel satisfaction indicators (n = 696).

measured from three first-order factors: positive deactivation, positive activation, and cognitive evaluation (to be described later), derived from nine observed five-point Likert scale items (presented in Fig. 2).

The specification of the measurement model that shows the connections between observed items and three first-order latent factors is shown in Eqs. (4.1).

$$v_t = \lambda_l F_l^* + e_t$$

where, $l \in \{1, 2, 3\}$ and $t \in \{1, 2, \dots, 9\}$ are the indexes of first-order latent factors (representing positive deactivation, positive activation, and cognitive evaluation respectively) and observed items (presented in Fig. 2) such that F_l^* and v_t represent the vector of first-order latent factors and their respective observed items. λ_l is the vector of parameters that link observed items v_t and latent factors F_l^* . e_t represents the measurement error associated with each factor. The measurement errors are assumed to be standard normally distributed.

Similarly, the specification of the measurement that shows the connections between first- and second-order latent factors is shown in Eq. (4.2).

$$F_l^* = \lambda_l F + e$$

F represents the second-order factor (i.e., travel satisfaction) which is related to the first-order factors by the vector of parameters λ_l . e represents the measurement error associated with the second-order factor which is assumed to be standard normally distributed. The procedure adapted to finalize the configuration of the second-order factor structure of travel satisfaction is presented later.

Once the measurement model of travel satisfaction was defined, SEM was used to investigate the impacts of travel satisfaction on destination satisfaction and revisit intention as per the research model defined in Fig. 1. A structural equation model assesses the simultaneous relationships between latent and exogenous variables of interest. In the structural model, destination satisfaction and revisit intention were outcome variables whereas travel satisfaction (i.e., the second-order latent factor), socio-demographics, and trip characteristics were considered possible predictors. Also, the model considered the simultaneous direct impact of destination satisfaction on revisit intention. A general specification of the structural equation model is represented by Eq. (4.3).

$$Y_l = B_l X_i + r_l$$

where $i \in \{1, 2, \dots, I\}$ is the index of predictor variables such that X_i denotes the vector of predictor variables (travel satisfaction (F), socio-demographics, and trip characteristics; also destination satisfaction in the case of revisit intention as outcome variable) and B_l represents their respective parameters that explain their relationships with the outcome variable (destination satisfaction and revisit intention) Y_l . r_l is the vector of residuals associated with each outcome variable. This error term is also assumed to be standard normally distributed.

As recommended by Kline (2015), the goodness-of-fit of measurement and structural models were judged by the combination of a number of indices: the ratio of chi-square value to degrees of freedom (χ^2/df), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). In general, a model with a higher value of CFI and lower values of χ^2/df , RMSEA, and SRMR better fit the data. As suggested by the literature (Browne & Cudeck, 1992; Hair, 2009; Hooper et al., 2008; Hu and Bentler, 1999; Kline, 2015), the cutoff values of these indices for a good model fit are: $\chi^2/df < 2$, CFI > 0.95 , RMSEA < 0.05 , and SRMR < 0.08 , and for an acceptable model fit are: $\chi^2/df < 5$, CFI > 0.90 , RMSEA < 0.08 , and SRMR < 0.10 . All measurement and structural models were fitted using the lavaan package (Rosseel, 2012) in R (R Core Team, 2022). As seen in Table 1 and Fig. 2, the responses to outcome variables (destination satisfaction and revisit intention) and indicators of the latent factor (travel satisfaction) were not normally distributed (negatively skew with positive means); thus, a robust variant of the maximum likelihood estimator developed by Yuan and Bentler (2000) called maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistics (MLM) was used for estimating measurement and structural models.

5. Results and discussions

5.1. Confirmatory factor analysis results: Measurement structure of travel satisfaction

The measurement structure of travel satisfaction was defined from nine scale items assessing travel experience (presented in Fig. 2) using CFA. Travel satisfaction, being a domain of overall life satisfaction and wellbeing, is believed to be composed of three dimensions: the first two dimensions – positive deactivation (PD) and positive activation (PA) –

Table 2
Sample data for socio-demographic and trip characteristics (n = 696).

Variable	Sample				US population
	#	%	Mean	SD	%
Socio-demographics					
Age					
18-34 years	191	27.44			29.14
35-64 years	404	58.05			49.23
65 + years	101	14.51			21.63
Gender					
Female	359	56.90			49.50
Male/Other	337	43.10			50.50 (male)
Race/ethnicity					
White	576	82.76			72.90
Others	120	17.24			
Education					
No college degree	291	41.81			
Undergraduate degree	278	39.94			
Graduate degree or higher	127	18.25			
Student					
No	512	73.56			
Yes, part-time	46	6.61			
Yes, full-time	138	19.83			
Employment					
No	210	30.17			
Yes, part-time	90	12.93			
Yes, full-time	396	56.90			
Household income (annual)					
< \$25 k	110	15.80			17.40
\$25–50 k	187	26.87			19.10
\$50–75 k	155	22.27			16.80
\$75–100 k	99	14.22			12.80
≥ \$100 k	145	20.83			34.00
# adults in the household (age ≥ 18 years)			2.18	0.98	
# children in the household (age < 18 years)			0.90	1.15	
Driving experience (years)			25.66	16.61	
# of household vehicles			1.52	0.77	
Typical # of long-distance recreational trips per year			3.32	2.19	
Trip characteristics					
Travel time (hours, one way)			10.89	12.83	
Travel cost (dollars, one way)			193.40	202.52	
Travel companion					
Total #			2.36	1.93	
Spouse: present	453	65.09			
Children: present	320	45.98			
Siblings: present	56	8.01			
Other family members: present	109	15.66			
Friends: present	135	19.40			
Length of stay at the destination					
<1 h	6	0.86			
1-4 h	104	14.94			

Table 2 (continued)

Variable	Sample				US population
	#	%	Mean	SD	%
4-8 h	119	17.10			
1 night	139	19.97			
2 nights	180	25.86			
>2 nights	148	21.26			
# of past visits to the destination					
None	269	38.65			
1	184	26.44			
2	119	17.10			
3	43	6.18			
>3	81	11.64			

are related to the affective experience of travel whereas the third dimension refers to cognitive evaluation (CE) of travel. A separate companion paper (Acharya et al., in progress) defined the relationships between nine observed items and these three dimensions of travel satisfaction where items “distressed – content”, “tense – relaxed”, and “worried – confident on time” defined PD, items “tired – energized”, and “bored – enthusiastic” defined PA, and items “sad – happy”, “displeasing – enjoyable”, “worst – best”, and “poorly – smoothly” defined CE. For this paper, we defined the second-order factor called “travel satisfaction” which essentially captures the commonality between these three travel satisfaction dimensions (PD, PA, and CE). This definition of the second-order factor was supported by higher correlations between PD, PA, and CE (0.788–0.822). Finally, CFA was conducted for the proposed second-order measurement structure of travel satisfaction and the results are presented in Fig. 3. The acceptable goodness-of-fit statistics ($\chi^2/df = 2.640 < 5$, CFI = 0.968 > 0.90, RMSEA = 0.037 < 0.08, and SRMR = 0.067 < 0.10) of the measurement model confirm that the second-order measurement structure of travel satisfaction is viable and can be used for further analysis. With this, the overall impact of travel satisfaction on destination satisfaction and revisit intention, rather than the individual impacts of the three travel satisfaction dimensions, can be assessed.

5.2. Structural equation modeling results

The research model proposed in Fig. 1 was analyzed using SEM and the results are presented in Table 3. In the research model, travel satisfaction was the only latent variable that was measured as defined in Section 5.1, and the rest of the variables were directly measured as discussed in Section 6. In terms of variables related to socio-demographic and trip characteristics, all variables presented in Table 2 were first considered in the model but the model was finalized by gradually dropping the insignificant effects. Thus, only the (marginally) statistically significant estimates (at a 90 % confidence interval) are presented in Table 3. Since, the proposed model conceptualized the inter-relationship between the outcome variables, both direct and indirect impacts of predictor variables on outcome variables exist. To maintain brevity, only the direct effects of socio-demographic and trip characteristics on outcome variables were computed; however, travel satisfaction being the variable of interest in the study, both direct and indirect effects as well as total effects of travel satisfaction on revisit intention were computed and are presented in Table 3. The goodness-of-fit statistics of the final model ($\chi^2/df = 1.428 < 2$, CFI = 0.968 > 0.95, RMSEA = 0.033 < 0.05, and SRMR = 0.027 < 0.08) lay under good range. Finally, the interpretations of the results presented in Sections are based on the final model outcomes (shown in Table 3).

5.2.1. Relationships between travel satisfaction, destination satisfaction, and revisit intention

The model results show that travel satisfaction had a direct impact on

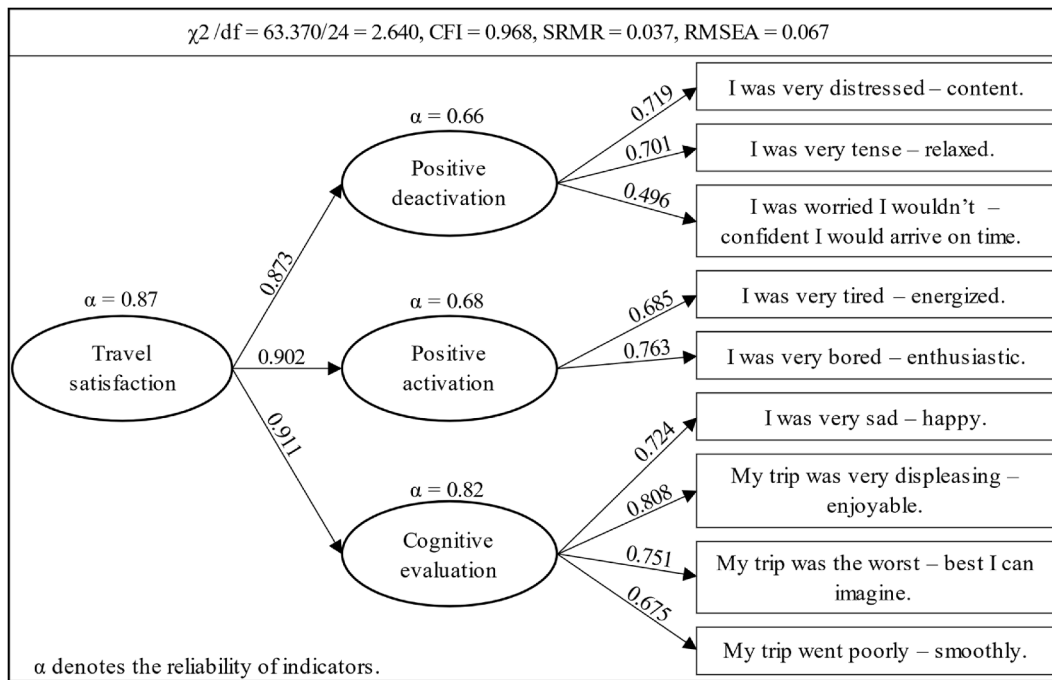


Fig. 3. Measurement model of travel satisfaction.

both destination satisfaction and revisit intention. Also, since destination satisfaction had a significant direct positive impact on revisit intention, travel satisfaction had an indirect impact on revisit intention through destination satisfaction. Looking at the direct effects, the direct effect of destination satisfaction (0.260) on revisit intention was higher than that of travel satisfaction (0.205). However, when accounting for the indirect effect of travel satisfaction on revisit intention through destination satisfaction (0.117), the total effect of travel satisfaction (0.322) surpassed the direct effect of destination satisfaction (0.260). Also, the direct effect of travel satisfaction on destination satisfaction alone (0.448) was higher than the total effect (0.322) on revisit intention.

First, the direct positive impact of destination satisfaction on revisit intention, found in this study, aligns with past studies (Campo-Martínez et al., 2010; Humagain & Singleton, 2021; Lee et al., 2020; Pai et al., 2020). This confirms how crucial the satisfaction of the visitors to the destination is for them to develop destination loyalty and a positive intention to revisit the destination. Second, results showing the positive impacts of travel satisfaction on destination satisfaction (direct effect only) and revisit intention (both direct and indirect effects) support our prior hypothesis that travel satisfaction is an important indicator of destination satisfaction and loyalty. Thus, it is suggested that travel satisfaction should not be ignored when discussing ways to improve destination loyalty and revisit intention. Third, a higher effect size of travel satisfaction on destination satisfaction than on revisit intention indicates that travel satisfaction has a stronger immediate impact on destination experience than on intention to revisit in the future. Thus, based on the joint model results, it could be concluded that travel satisfaction has a significant role in shaping travelers' perception of destination satisfaction and revisit intention.

When looking closely at the results, the effect of travel satisfaction on revisit intention was higher compared to that of destination satisfaction. This finding is surprising since tourism studies have always considered destination satisfaction as the strongest influence of revisit intention or destination loyalty, neglecting the emotions experienced on the way to destinations. However, the difference in the magnitudes of these effects could have been amplified by the survey strategy adopted. Most of the respondents have probably responded to the survey shortly after their

visits, as this retrospective survey was conducted in the Summer when most people visit national parks in the US. Since the size of the effect of longer-term remembered destination experiences on revisit intention is usually higher than that of shorter-term remembered experiences (Barnes et al., 2016), it could have been too short for the respondents to reveal their stable destination satisfaction and revisit intention in the survey. In terms of travel satisfaction, the affection and evaluation of the travel for an individual can be assumed to decrease over time with the strongest effect during or just after the travel. Based on these reasons, we speculate that the size of the effects of travel satisfaction and destination satisfaction on revisit intention calculated in this analysis might represent the short-term impacts.

5.2.2. Socio-demographic and trip-specific determinants of destination satisfaction and revisit intention

The model results show that several socio-demographic and trip characteristics were associated with destination satisfaction and revisit intention. Older-aged individuals (65 + years of age) had lower revisit intention than their younger counterparts. Undergraduate degree holders were less interested in revisiting the destination compared to individuals with other educational backgrounds. Part-time students had overall lower ratings on destination satisfaction than non- and full-time students whereas full-time employees had higher revisit intention. Belonging to a household with income > \$100 k was linked to having lower revisit intention. An increase in the number of household vehicles was related to the increase in destination satisfaction. These results show that some socio-demographic characteristics partly explain the heterogeneity in destination satisfaction and revisit intention.

An increase in travel companions was linked with an increased destination revisit intention in our data. This finding aligns with past studies (e.g., Vada et al., 2022) and empirically supports the idea that the presence of travel companion/s improves tourism experiences and satisfaction. Also, looking specifically at the type of companion, trips made with spouse and friends were found to have higher revisit intention and destination satisfaction, respectively. Though past studies had contradictory findings on the impact of length of stay on tourism experiences (e.g., Kim & Lee, 2016 (positive impact) vs Feitosa & Silva, 2022 (negative impact)), the length of stay was associated positively

Table 3
Structural equation modeling results.

Variables	Destination satisfaction		Revisit intention	
	Coeff.	z-stat	Coeff.	z-stat
Travel satisfaction				
Direct effect	0.448	7.272	0.205	3.908
Indirect effect			0.117	4.446
Total effect			0.322	5.974
Destination satisfaction				
Direct/total effect			0.260	4.567
<i>Socio-demographics (direct effects only)</i>				
Age				
65 + years			-0.187	-4.124
Education: Undergraduate degree			-0.063	-1.830
Student				
Yes, part-time	-0.121	-2.651		
Employment				
Yes, full-time			0.099	2.726
Household income (annual)				
More than \$100 k			-0.094	-2.606
# of household vehicles	0.073	2.221		
<i>Trip characteristics (direct effects only)</i>				
Travel companion				
Total #			0.065	2.192
Spouse: present			0.083	2.365
Friends: present	0.063	1.997		
Length of stay at the destination				
2 nights	0.174	5.568		
>2 nights	0.099	2.603	0.069	2.928
# of past visits to the destination				
3			0.069	2.928
>3			0.179	5.335
<i>Goodness-of-fit statistics</i>				
χ^2/df	241.348/169 = 1.428			
CFI/SRMR/RMSEA	0.968/0.033/0.027			
R-squared value	0.253		0.278	

Note: All coefficients are standardized.

with destination satisfaction and revisit intention in our model: visitors who stayed for more than one and two nights had significantly higher revisit intention and destination satisfaction, respectively. Finally, the visitors who had visited the destination at least three times in the past unsurprisingly had significantly higher revisit intentions for the future too compared to those who have visited the destination less than three times in the past.

6. Conclusion

With the primary aim to link two closely related domains of literature – travel behavior and tourism, we applied a structural equation modeling approach to investigate the impact of travel satisfaction on destination satisfaction and revisit intention. First, results show that affective and cognitive experiences while traveling between home and destination have a significant impact on one's evaluation of destination satisfaction and revisit intention. This has implications for both travel behavior and tourism literature. Tourism literature seeks to the factors

that affect the sustainability of tourism destinations (Meleddu et al., 2015; Van Dyk et al., 2019), and this result informs tourism destination managers to consider travel emotions and evaluations of visitors when searching for ways to improve the attraction of tourism destinations. Thus, we recommend tourism destination managers develop ways to improve travel satisfaction to tourism attractions. For this, the results of travel behavior studies could be utilized: trip characteristics, road network features, vehicular attributes, individual attitudes and perceptions, and socio-demographics have significant associations with travel satisfaction (Chen et al., 2022; Ettema et al., 2012, 2017; Singleton, 2019b; Smith, 2017; Sukhov et al., 2021; Ye and Titheridge, 2017; Acharya et al., in progress). Travel behavior studies aim to investigate the connections between travel domain-specific life satisfaction and satisfaction with other domains of life (Mokhtarian & Pendyala, 2018), and this result confirms a clear relationship between travel satisfaction and tourism satisfaction. This finding embraces the attention paid to examining travel satisfaction by travel behavior studies that aim to improve life satisfaction and well-being.

Second, results reveal that the impact of travel satisfaction on revisit intention is stronger than the impact of destination satisfaction on revisit intention. This remarkable finding again highlights the importance of travel satisfaction in maintaining sustained and repeated tourism for a destination but also suggests that investing in destination attributes alone might not be sufficient to attain the desired level of tourism for the destination. Other study results such as the relationships between travel satisfaction, trip characteristics, and socio-demographics with destination revisit intention are in line with the existing tourism studies. Overall, this study aims to uncover an important aspect of tourism destination satisfaction, i.e., travel satisfaction, while keeping other factors the same. Thus, this study first aligns with the recommendations put forward by tourism studies that sustained and repeated tourism of a destination can be maintained by regularly investing in infrastructures in the destination and area around it, developing affordable tour packages, offering good food and accommodations, managing good transportation facilities around the destination, etc. and second presents a novel recommendation to the destination managers that travel experiences of the visitors while traveling between home and destination should also be taken care of. Being significant indicators of travel satisfaction, investment in transportation networks, facilities, and services connecting major tourism destinations and city centers could boost the travel satisfaction of the visitors of tourism destinations. Specifically, creating high-capacity road infrastructure (resulting in limited congestion) and reliable travel time information on the way to tourism destinations, in combination with sufficient and cheap parking facilities, may stimulate travel satisfaction (Ettema et al., 2013; Susilo & Cats, 2014). Developing more rest areas and combining them with service plazas, restaurants, and other entertainment options as well as scenic viewpoints/landscapes on the way to destinations could help offer positive experiences to travelers. An environmentally sustainable strategy could be offering public transit services to the visitors which could be dedicated to the tourism destination and have different entertainment options (e.g., bars, restaurants, casinos, etc.) in-vehicle. This option is essentially the addition of the 'transport for tourism' concept to conventional destination attraction strategies.

Being the first study to conceptualize and empirically prove the relationships between travel satisfaction and destination satisfaction and revisit intention, this study has several limitations that could offer several future research opportunities. First, people may confound their liking/satisfaction for the destination, destination attributes, or activities conducted at the destination with their liking of travel to reach that destination (people being happy with their travel because they are going to a recreational or fun destination) (see De Vos, 2019 for reasonings). This would mean that not only travel satisfaction can affect destination satisfaction, as hypothesized in this study, but also the other way around to a certain extent. This opposing relationship was not investigated in this study and could be a future research opportunity. Second, as

tourism studies (e.g., Loi et al., 2017) agree that overall destination satisfaction and loyalty are mediated by designation image, future studies should aim at investigating the mediation by destination image and other possible variables to broaden the understanding of the role of travel satisfaction in tourism. Third, as discussed earlier, the relationships between travel satisfaction, destination satisfaction, and revisit intention estimated in this study mostly represent the short-term impacts. Thus, estimating the same relationships based on long-term remembered experiences could help understand the phenomena more precisely. Fourth, this study measured destination satisfaction and revisit intention from single items to maintain the brevity of the questionnaire. Future studies could consider destination satisfaction measured through several attributes (such as nature, people and culture, hospitality, food, accommodation, transportation, infrastructure, etc.) and investigate the relationships of travel satisfaction with each destination attribute satisfaction. Also, a question on only revisiting intention might not represent destination loyalty completely. Thus, including the recommendation intention could strengthen the measurement of destination loyalty. Fifth, the survey used in this study included the responses of the US national park visitors who visited by driving only. These inclusion criteria were selected purposefully to attain multiple objectives of the survey which are beyond this study's objectives but limit the generalizability of this study's findings. The examination of the same relationships (i.e., impacts of travel satisfaction on destination satisfaction and loyalty) for different research settings, including destinations other than national parks, the visitors using different travel modes (e.g., public transit, air travel, etc.), the visitors and destinations from different geographical scope, etc., could be a future research avenue.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Acknowledgments

This study was reviewed and approved by the Utah State University Institutional Review Board (IRB Protocol # 12878).

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