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Introduction

In the past two decades, mountain biking has experienced substantial growth in participation rates, becoming a global phenomenon in the process (Buning, Cole & Lamont, 2019; Buning & Lamont, 2021). The growth of the activity has been accompanied by an increase in mountain bike related travel (Abernethy, Dixon, Holladay & Koo, 2022; Buning et al., 2019). Abernethy et al., (2022) reported that 79% of mountain bikers travelled within the prior year for mountain bike-specific reasons. Mountain bike tourism provides communities with the opportunity to rejuvenate their local economies (Freeman & Thomlinson, 2014; Gazzola, Pavione, Grechi & Ossola, 2018). However, little formal research into the travel motives and attraction to destination pull attributes of mountain bike tourists exists, hindering the planning and development of a mountain bike tourism product (Abernethy et al., 2022; Buning et al., 2019). Furthermore, while the involvement construct is useful for better understanding tourist motivations and selection of destination pull attributes (Josiam, Smeaton & Clements, 1999), no known research exists that examines the role of enduring involvement on recreational mountain bike tourists' travel motivations and attraction to destination pull attributes. The aim of this research is to examine the influence of enduring involvement on travel push motives and attraction to destination pull attributes among recreational mountain bike-specific tourists.

Literature Review

Cycling tourism has emerged as an opportunity to enhance the social and economic well-being of host communities (Ciascia, Dezzi & Rus, 2022; Faulks, Ritchie & Fluker, 2007; Gazzola et al., 2018). To create a competitive and desirable mountain biking destination, greater understanding of travel behaviors, travel motives, and the attraction to destination pull attributes of mountain bike tourists is essential (Abernethy et al., 2022; Buning et al., 2019). There also exists a need to investigate the presence of and influence of heterogeneity among mountain bike tourists to better understand travel behavior (Buning et al., 2019; Gibson & Chang, 2012; Ritchie, Tkaczynski & Faulks, 2010). The definition of mountain biking by Siderelis, Leung, and Nader (2010) as off-road cycling on remote, rough, and narrow trails that traverse forests, deserts, mountains, and/or meadows, was used in the current study. Moularde and Weaver's (2016) definition of mountain bike travel as overnight travel of at least 24 hours from home for the purpose of actively participating in mountain biking was adopted for this research. Abernethy et al. (2022) found that mountain biking participants to be predominately affluent, well-educated, middle-aged men. Buning et al. (2019) reported that mountain bikers averaged 4.5 trips annually, stayed an average of 2.7 nights, spent an average of US\$399, and most frequently stayed at hotels and campgrounds.

During the travel decision making process, sport tourists are initially pushed to travel by internally derived motives and pulled to a destination by the generic tourism and activity specific destination attributes necessary to fulfil the internal travel motives (Hu & Ritchie, 1993; Suni & Pesonen, 2017). A destination's ability to provide and support mountain biking opportunities forms the core of a mountain bike tourists' perception of a travel destination (Abernethy et al., 2022; Moularde & Weaver, 2016). Categorized as a hard adventure activity requiring great skill (Taylor, 2010), mountain biking participation is motivated by the need to fulfill internal rewards of escape, challenge, skill mastery, physical activity, social connections, thrills, and connecting with nature

(Moularde & Weaver, 2016; Taylor, 2010). In a recreational tourism context, mountain bike tourists have been found to travel to fulfill a need for novelty, mastery, stimulation-avoidance, adventure experiences, social bonding, escape from the everyday, and personal challenge (Abernethy et al., 2022; Moularde & Weaver, 2016). The combination of a destination's trail conditions, trail features, bike and tourism infrastructure, physiography, setting, travel information, and entertainment options pull mountain bike tourists to a destination (Abernethy et al., 2022; Moularde & Weaver, 2016; Probstl-Haider, Lund-Durlacher, Antonschmidt, & Hold, 2017; Taylor & Sand, 2021).

The involvement construct has been used to explore the behaviors of individuals in a leisure and sport context (Havitz, Kaczynski & Mannell, 2013; Kennedy, Baker, Jordan & Funk, 2019) and in sport tourism (Dawson, Havtiz & Scott, 2011; Gibson & Chang, 2012; McGehee, Yoon & Cardenas, 2003; Ritchie et al., 2010). The consumer involvement profile (CIP) scale of Laurent and Kapferer (1985), used to understand consumer purchase behavior and later adapted by McIntyre (1989) to examine leisure and sport behaviors, has been instrumental in operationalizing the involvement construct in a leisure context. In a leisure context, involvement is described as a state of motivation or interest for an activity, that one pursues based on intrinsic needs, values, and interests that remain relatively stable overtime (Kyle, Absher, Norman, Hamitt & Jodice, 2007). It is well accepted that a multidimensional involvement scale is appropriate for measuring the involvement construct (Havitz & Dimanche, 1997; Kennedy et al., 2019; Kyle et al., 2007). McIntyre (1989) proposed the three dimensions of attraction, centrality, and self-expression to measure involvement in a sport context. Later, Kyle et al. (2007) developed the 15-item multidimensional Modified Involvement Scale (MIS), consisting of the five dimensions of attraction, centrality, social bonding, identity affirmation, and identity expression to measure enduring involvement.

The MIS has successfully been applied in leisure (Walters, Hartman & Evans, 2021) and leisure tourism contexts (Dawson et al., 2011) to segment participants based on involvement level. Through application of the MIS, Walters et al. (2021) observed that higher levels of physical activity involvement among pregnant women was associated with increased physical activity participation (Walters et al., 2021). Also, significant increases in the importance of each involvement dimension was associated with increasing levels of physical activity involvement (Walters et al., 2021). While examining alpine skier behavioral response to climatic conditions, Dawson et al. (2011) used the MIS to reveal three distinct involvement clusters. It was found that each involvement cluster differed in their behavioral response to climatic conditions and a higher involvement level corresponded with a significant increase in the importance of each involvement dimension. Additionally, the three clusters differed in their ranked importance of each involvement dimension (Dawson et al., 2011).

It is well established in travel research that involvement plays a critical role in the travel decision making process (Gibson & Chang, 2012; Josiam et al., 1999; Wong, Hsiung, Lee & ChouHuang, 2021). Enduring involvement has been found to be antecedent to travel behaviour, as involvement strongly influences one's judgement of tourism activities, destination settings, and attributes (Chang & Gibson, 2011; Wong et al., 2021). In a seminal study, McIntyre and Pilgram (1992) segmented vehicle-based campers by involvement with camping, revealing four involvement clusters who differed in their valuations of self-expression, attraction, and centrality. When examining each involvement cluster's response to management services, facilities, and management actions, it was found the cluster most centrally involved and experienced with

camping was most critical of management actions that interfere with the camping experience (McIntyre & Pilgram, 1992). The findings indicate that using involvement profiles can be yield insights into the perceptions of facility provision and natural settings at campsites (McIntyre & Pilgram, 1992). Similarly, Wong et al. (2021) found that the involvement level of campers can be used to explain the motivations and behaviors of campers, including cost considerations, accommodation selection, destination setting, interactions with others, and outdoor activity preference (Wong et al., 2021). Wong et al. (2021) proposed that the relevance of campsite attributes corresponds with greater levels of involvement with the activity.

Relevant to cycling tourism, understanding one's level of involvement may offer greater insight into one's travel push motives and the attraction to destination pull attributes (Getz & McConnell, 2014; Ritchie et al., 2010). Gibson and Chang (2012) examined the effect of involvement with cycling on the benefits sought from a cycling tour. Participants ranked attraction as the highest involvement dimension, followed by self-expression and centrality, respectively (Gibson & Chang, 2012). Once participants were divided into high, medium, and low involvement profiles, it was found that only attraction had significant effect on the benefits sought factors of physical activity, relaxation, and excitement (Gibson & Chang, 2012). When examining the travel behaviors of highly involved mountain bike event participants, Getz and McConnell (2014) observed that travel was motivated by the need for self-development, fulfilment, hedonism, excitement, and novelty seeking. Additionally, Getz and McConnell (2014) found that highly involved participants made event participation choices based on the appeal of destination attributes inclusive of favourable climate, reputation of destination, wilderness appeal, access to remote areas, supporting infrastructure, scenic and interesting route, and user-friendly website. With prior research on involvement limited to cycling tourism in general (Gibson & Chang, 2012; Ritchie et al., 2010) and event-specific mountain bike travel (Getz & McConnell, 2014), research examining the influence of involvement on the travel push motives and appeal of destination pull attributes among recreational mountain bike tourists is warranted.

Thus, the purpose of this research was to answer the following questions:

- 1) Do mountain bike tourists differ significantly based on involvement profile?
 - a) Do mountain bike tourists have significantly different travel push motives based on involvement profile?
 - b) Do mountain bike tourists have significantly different attraction to destination pull attributes based on involvement profiles?

Methodology

An online questionnaire was distributed through 29 mountain bike clubs within Canada and the US to collect data from a large sample of geographically dispersed mountain bikers. A total of 1346 responses were collected over a three-week period. However, cases with missing data or cases that indicated one had not travelled for mountain bike purposes in the previous 12 months were eliminated, resulting in a sample of $n = 527$. Standardized z-scores were used to identify outliers within the data set, with outliers being replaced with the next highest or lowest score (Tabachnick & Fidell, 2019). Closed questioning was used to establish four demographic indicators and three mountain bike behavior indicators. Involvement with mountain biking was measured using a seven-point Likert scale (1 = very unimportant, 7 = very important) that was adapted from Kyle et al.'s (2007) 15-item MIS. Cronbach's alpha were used to assess the internal

consistency of the entire scale and each of the MIS dimensions. The Cronbach's alpha of the entire MIS scale ($\alpha = 0.89$), attraction ($\alpha = 0.89$), centrality ($\alpha = 0.86$), social bonding ($\alpha = 0.74$), identity expression ($\alpha = 0.79$), and identity affirmation ($\alpha = 0.69$) dimensions had acceptable reliability (Raykov & Marcoulides, 2011). To measure the travel push motives, a 21 item seven-point Likert scale (1 = very unimportant, 7 = very important) was used. To measure the attraction of destination pull attributes, a 41 item seven-point Likert scale (1 = very unimportant, 7 = very important) was used. Principal Component Analysis (PCA) was conducted separately on the 21 push items and the on the 41 pull items with a factor loading of 0.55 to establish push and pull factors (Tabachnick & Fidell, 2019). Items that failed to load onto a factor or had a communality below 0.5 were removed from the analysis and another PCA was performed (Tabachnick & Fidell, 2019).

Descriptive statistics were used to establish a demographic, mountain bike behavior, and travel behavior profile of respondents. To establish one's level of involvement with mountain biking, K-Means Cluster Analysis was performed using the mean involvement score for each dimension, a method commonly used in recreation research (Havitz et al., 2013; McGehee et al., 2003). To establish if significant differences between the two involvement clusters exist for each of the five involvement dimensions, a series of independent t-tests (at a 0.05 level) were performed. To determine if the level of involvement influenced travel motives, independent t-test were run with involvement level acting as the independent variable and each push factor acting as the dependent variable. To examine if level of involvement influenced one's attraction to each pull factor, a series of independent t-tests were run with involvement level acting as the independent variable and each pull factor acting as the dependent variable.

Results

The sample was predominately male (79%) and between the ages of 35-54 (60%). The sample was well-educated and affluent, with 80% of respondents having a college or post-graduate education and 64% reporting a household income above US\$100,000. The sample was a highly experienced and skilled group of mountain bikers, with 62% reported 10+ years of experience and 60% indicated advance or expert skill level. Cross-county (48%) and enduro (47%) were the most frequently reported riding disciplines.

To create unique involvement clusters of mountain bikers, a K-Means Cluster Analysis was performed using the means of the five involvement dimensions, resulting in a two cluster solution being accepted. Subsequently, a highly involved ($n = 343$) and a moderately involved ($n = 184$) group was assigned. The two cluster solution was accepted based on the sample likely to have moderate to high involvement with mountain biking, a finding consistent with previous sport tourism (Chang & Gibson, 2011; McGehee et al., 2003). Additionally, the highly involved group had significantly higher involvement scores on all dimensions when compared to their moderately involved peers. Collectively, the sample indicated the following importance for each involvement dimension: attraction, centrality, social bonding, identity expression, and identity affirmation. The highly involved group ranked the involvement dimensions in the following order of importance: attraction, centrality, social bonding, identity expression, and identity affirmation. However, the moderately involved group's order of importance differed from the highly involved group with the dimensions ranked as follows: attraction, identity expression, social bonding, identity affirmation, and centrality. Two notable findings emerged between the highly and moderately involved group. Centrality was ranked as second most important by the highly involved groups, while centrality was ranked least important by the moderately involved group. Additionally, the highly involved

group ranked identity expression as the second least important, while the moderately involved group ranked this dimension as the second most important.

Table 1. Independent t-test results of involvement level influence on involvement dimensions

Involvement Dimension	Highly Involved		Moderately Involved		t(df)	p
	M	SD	M	SD		
Attraction	6.92	0.25	6.34	0.71	13.58(525)*	0.001*
Centrality	6.23	0.71	4.34	1.33	21.19(525)*	0.001*
Social Bonding	6.09	0.78	4.59	1.12	17.91(525)*	0.001*
Identity Expression	5.96	0.77	4.68	0.99	16.41(525)*	0.001*
Identity Affirmation	5.66	0.92	4.43	0.98	14.35(525)*	0.001*
Mean	6.17	0.41	4.88	0.62	28.37(525)*	0.001*

PCA of the 21 travel motive items resulted in five push factors listed in order of most important to least important: novelty (M = 5.97, SD = 0.87), stimulus-avoidance (M = 5.96, SD = 0.96), adventure experiences (M = 5.78, SD = 0.61), mastery (M = 5.41, SD = 1.09), and social bonding (M = 4.33, SD = 1.30). Table 2 displays the influence that involvement level has on the importance of travel push factors. The push factors of novelty, stimulus-avoidance, and adventure experiences were ranked as most important by both involvement groups. When compared to their moderately involved peers, the highly involved group had significantly higher scores for each push factor.

Table 2. Independent t-test results of influence of involvement level on push factors

Push factor	Highly Involved		Moderately Involved		t(df)	p
	M	SD	M	SD		
Novelty	6.10	0.82	5.72	0.89	4.94(525)*	0.001*
Stimulus-avoidance	6.12	0.93	5.65	0.95	5.62(525)*	0.001*
Adventure experiences	5.88	0.54	5.60	0.69	5.09(525)*	0.001*
Mastery	5.69	0.97	4.90	1.10	8.51(525)*	0.001*
Social bonding	4.60	1.25	3.83	1.24	6.73(525)*	0.001*

Push factors measured on 7-point scale with higher values indicating greater importance.
*Significant at the 0.05 level.

PCA of the 41 pull items revealed seven pull factors listed in order of most important to least important: climate (M = 5.83, SD = 0.85); trail infrastructure (M = 5.65, SD = 0.87); natural setting (M = 5.27, SD = 0.90); information sources (M = 5.03, SD = 0.99); trail features (M = 4.84, SD = 1.23); tourism infrastructure (M = 4.17, SD = 1.30); and entertainment options (M = 3.80, SD = 1.17). The influence of involvement level on the attraction of destination pull factors are shown in Table 3. It was found that highly involved mountain bikers placed significantly greater importance on a destination's climate, trail infrastructure, information sources, and trail features than moderately involved mountain bikers.

Table 3. Independent t-test results of influence of involvement level on pull factor attractiveness

Pull factor	Highly Involved		Moderately Involved		t(df)	p
	M	SD	M	SD		
Climate	5.90	0.84	5.70	0.87	2.65(525)*	0.004*
Trail infrastructure	5.73	0.83	5.52	0.93	2.63(525)*	0.004*
Natural setting	5.30	0.90	5.20	0.90	1.31(525)	0.095
Information sources	5.14	1.01	4.83	0.88	3.41(525)*	0.001*
Trail features	5.06	1.17	4.43	1.27	5.67(525)*	0.001*
Tourism infrastructure	4.21	1.30	4.09	1.32	0.95(525)	0.171
Entertainment options	3.85	1.15	3.68	1.20	1.64(525)	0.05

Dimensions measured on 7-point scale with higher values indicating greater importance for the destination pull factor. *Significant at the 0.05 level.

Conclusion and Discussion

Mountain bike participation rates and associated travel has experienced continual growth offering host communities social and economic benefits. However, little is known about how a recreational mountain bike tourists' level of enduring involvement with the activity may influence travel motivations and perceptions of destination pull attributes. Through segmenting of mountain bikers based on involvement profiles, this study provides insight for academics and practitioners to better understand how enduring involvement influences travel push motives and perceptions of destination attributes among mountain bike tourists.

From a theoretical perspective, the findings of this study support the use of Kyle et al's., (2007) MIS to examine enduring involvement among mountain bike tourists. The entire MIS demonstrated strong reliability, with each dimension demonstrating strong to good reliability. While examining one's level of involvement with mountain biking, it was observed that the attraction, centrality, and social bonding dimensions had the greatest importance among mountain bikers. With the attraction dimension being highest ranked, it may be inferred that mountain bikers view activity participation as a highly important and enjoyable activity, a finding consistent with prior leisure research (Gibson & Chang, 2012; McIntyre, 1989). Collectively, centrality was ranked second overall indicating mountain biking is an activity one organizes their life around. However, there was a difference in how the highly involved and moderately involved groups ranked the dimension indicating heterogeneity of the groups. The importance of social bonding is consistent with the findings of Moularde and Weaver (2016) who reported mountain bikers value the social interactions achieved through activity participation. This study advances knowledge of enduring involvement and cycling tourism found in prior research (Getz & McConnell, 2014; Gibson & Chang, 2012; Ritchie et al., 2010).

A second theoretical contribution of this study is support for the use of involvement profiles to segment recreational mountain bike tourists. Through the revealing of two distinct mountain bike tourist involvement profiles, the study contributed to Buning et al's. (2019) call to further explore heterogeneity among mountain bike tourists. Consistent with prior research (Dawson et al., 2011;

Walters et al., 2021), notable distinctions were observed between the highly and moderately involved groups with respect to the importance of the involvement dimensions. Highly involved mountain bikers stated attraction and centrality to be their most important involvement dimensions, suggesting mountain bike participation is a highly important activity that one organizes their life around. However, moderately involved mountain bikers reported attraction and identity expression to be their most important involvement dimensions, indicating that, while mountain biking is part of their identity, mountain biking may be one of many leisure activities they participate in.

From a practical perspective, destination managers should take into consideration that highly involved mountain bikers comprised 65% of the study sample. As will be discussed later, a high level of involvement has a direct influence on travel motives and perceptions of destination attributes. Additionally, the two involvement profiles demonstrated differing importance on the involvement dimensions which will influence the travel decision making process. Destination managers should take into consideration the differing values associated with activity participation between highly and moderately involved mountain bikers. For example, centrality was ranked second among the highly involved profile, while centrality was ranked last among the moderately involved profile. To appeal to moderately involved mountain bike tourists, a destination may need to market other outdoor activities or events and attractions unrelated to mountain biking.

A third theoretical contribution of this study is advancing knowledge of the influence involvement has on travel push factors in recreational mountain bike tourism (Getz & McConnell, 2014; Gibson & Chang, 2011; Ritchie et al., 2010). While each involvement profile demonstrated the same order of importance for each push factor, it was found the highly involved group rated each push factor as significantly more important than their moderately involved peers. Consistent with Getz and McConnell (2014), the highly involved profile demonstrates a stronger motivation to travel in order to fulfill a need for new experiences, personal development, adventure, and escape from their normal riding routine. This suggests that highly involved mountain bikers are more inclined to use travel as a means of fulfilling higher-order internal needs related to activity participation.

From a practical perspective, destination managers should consider the high importance of the travel push factors novelty, stimulus-avoidance, and adventure experiences among the highly involved profile. To appeal to the internal push motives of highly involved mountain bikers in marketing materials, a destination's ability to offer new and exciting trail riding opportunities that are an escape from one's normal riding routine should be emphasized. Given that moderately involved mountain bikers are also motivated to travel by the same push factors, albeit to a lesser importance, marketing materials that establish a linkage between desired push and pull factors may be beneficial in specifically targeting moderately and highly involved mountain bikers. For instance, highly involved mountain bike tourists place significantly more importance on trail infrastructure and trail features than their moderately involved peers. As such, marketing materials targeting highly involved mountain bike tourist should emphasize how the unique and challenging riding experiences offered by the destination will fulfill the need for new, challenging, and exciting riding opportunities. Conversely, when targeting moderately involved mountain bike tourists, materials that highlight the range of activities and attractions beyond mountain biking opportunities may demonstrate the destination is capable of fulfilling this profile's need for relaxation, escape, and social interactions.

A final theoretical perspective of the study is contributing to existing knowledge on the influence of involvement level on the perception destination pull attributes (Getz et al., 2014; Wong et al.,

2021). It is notable that the study found that factors core to mountain bike travel, climate, trail infrastructure, information sources, and trail features were significantly more important to highly involved mountain bikers. The higher importance of climate and trail infrastructure among highly involved mountain bikers indicates this group prioritizes ideal riding conditions at a destination to fulfill travel motives. Additionally, highly involved mountain bikers placed greater importance on challenging trail features suggesting a desire among highly mountain bikers to use travel as a means of fulfilling their heightened need for novelty, mastery, and adventure when compared to their moderately involved peers. Information sources were given significantly higher scores by the highly involved group, a finding that supports Moularde and Weaver's (2016) proposition that accessing and processing travel information emerges as an enjoyable aspect of activity participation as one becomes more serious with the activity.

From a practical perspective, highly involved mountain bike tourists appear to be more perceptive of destination attributes considered core to the mountain bike travel experience (Abernethy et al., 2022; Moularde and Weaver, 2016). Given the high importance of trail conditions and trail features, when designing and developing a mountain bike destination, managers should consider offering advanced and high skill features that will satisfy the need for novelty, mastery, and excitement among highly involved mountain bikers. Additionally, trails that are developed in a manner that provide conflict free and easy to navigate trails in beautiful, scenic, and wilderness settings will appeal to the highly involved mountain bike tourists' need for escape, new experiences, relaxation, and adventure. Additionally, provision of activities, attractions, and entertainment options unrelated to mountain biking will create a destination that is appealing to both moderately and highly involved mountain biker's need for escape and relaxation.

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