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The Education University
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A Project entitled

Theory of Planned Behavior:

Impacts of COVID-19 Pandemic on Camping Intention in Hong Kong

Submitted by

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Declaration

I, *CHIU Hoi Ching* declare that this research report represents my own work under the supervision of *Associate Head of Department and Associate Professor, Dr. CHEUNG Ting On, Lewis*, and that it has not been submitted previously for examination to any tertiary institution.

Signed

CHIU Hoi Ching

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Abstract

This study aims to assess the change of camping intention and camping behaviour under the COVID-19 pandemic, and investigate the influence of the COVID-19 pandemic on the camping intention among Hong Kong people with an application of the theory of planned behaviour as the theoretical framework of this study for understanding camping intention. An online survey was conducted in Hong Kong in 2022 under COVID-19 pandemic, and 178 valid responses are received. The structural model analysis by AMOS 27 was used to test testing the model fit of the theory of planned behaviour in understanding camping intention under COVID-19 pandemic. This study found that attitude, subjective norms and perceived behavioural control are significantly and positively related to camping intention under the COVID-19 pandemic, with attitude has the highest relative importance among three constructs, and the theory of planned behaviour helps understanding camping intention under COVID-19 pandemic to a large extent.

1. Introduction

The COVID-19 pandemic is an ongoing global public health problem. To lower the transmission risk of coronavirus, a wide range of social-distancing measures are adopted by the governments in different countries, including lockdowns, social gathering bans, and limited operation of public facilities; and behavioral adaptation of the public including wearing face masks, work from home, and online learning are practiced. The changes in mass behaviours aiming at maintaining a physical distance induced the ‘new norms of COVID-19 pandemic’ (Neville, Templeton, Smith & Louis, 2021).

In Hong Kong, social and recreational activities are limited under the pandemic. According to the Prevention and Control of Disease (Requirements and Directions) (Business and Premises) Regulation (Cap. 599F) implemented by the Food and Health Bureau (2021), operations of entertainment venues are restricted at different levels according to the seriousness of the pandemic, including restaurants, cinemas, swimming pools, gym rooms, party rooms, karaoke and theme parks. On the other hand, international tourism is unfavourable during COVID-19 pandemic, as different level of travel restrictions have been imposed in 69 worldwide destinations in light of controlling the spreading of coronavirus, in which 32% are completely closed and 34% are partially closed for international tourism as of the early February 2021 (United World Tourism Organization, 2021). The restriction of freedom and social activities, together with the negative news regarding pandemic, causing boredom, hopelessness, depressed mood and anxiety among the general public, which leads to the pandemic fatigue at affective level (Hong Kong Red Cross, 2021). Therefore, people around the world started to engage in ‘nondigitized untact behaviours’, referring to behaviours that minimized face-to-face contact (Kim, 2017) such as camping or hiking in remote nature, and personalized premium service such as hotel buffet room service or family exclusive dining rooms under the COVID-19 pandemic (Bae & Chang, 2020). Same as other



countries, people in Hong Kong tried to explore entertainment in the countryside to fulfill their social and recreational needs, for example hiking and camping in country parks of Hong Kong.

After the outbreak of COVID-19 in Hong Kong, the number of people utilizing resources in Country Parks of Hong Kong increased greatly. Focusing on camping, although 41 campsites under the management of the Agriculture, Fisheries and Conservation Department (AFCD) were closed during the COVID-19 pandemic (AFCD, 2021), some people still engaged in camping activities in official and unofficial campsites in rural areas. Overcrowding problems in official and unofficial campsites are still common in Hong Kong, for example in Tap Mun, an official campsite under the AFCD management, and Tung Lung Chau, unofficial campsite (Topick, 2021; Apple Daily, 2021), where a large number of tents are set up within a small area. Also, according to observation, the exposure of photos about camping has increased in social media for example Facebook and Instagram.



Figure 1 *Overcrowding in Tap Mun (Topick, 2021)*



Figure 2 *Overcrowding in Tung Lung Chau (Apple Daily, 2021)*

Although the above evidence shows that there is an increasing popularity of camping in Hong Kong under COVID-19 pandemic, the relationship between COVID-19 pandemic and camping has not been proved by any study. Additionally, camping in Hong Kong has long been understudied in field of tourism, previous research about camping in Hong Kong

are mainly related to environmental and social impacts of camping (Jim, 1987; Cole, 2004; Fu, Guo & Zang, 2013). There are research gaps regarding to the reasons inducing camping intention or camping behaviour in Hong Kong. Especially under COVID-19 pandemic, the influence on camping intention brought by this new phenomenon is worth our study, and this study is going to analyze the camping intention with an application of theory of planned behaviour suggested by Icek Ajzen (1991) in the Hong Kong context for understanding the camping intention in the period of COVID-19 pandemic.

This research aims to provide the up-to-date information by studying the change in camping intention and camping behaviour before and during the COVID-19 pandemic, and by investigating the influence of COVID-19 pandemic on Hong Kong people's camping intention with an application the theory of planned behavior proposed by Icek Ajzen (1991), which is a theory explaining the formation of behavioural intention and actual performance of certain behaviour. It is expected to assess and discuss the potential and position of camping as a recreational industry or a local tourism in Hong Kong, and may give some insight for the Hong Kong government to reconsider the future development and financial budget in managing country parks as a destination for camping tourism.

2. Literature Review

2.1 Camping as Tourism

To define camping, it is an outdoor activity in which both recreational activities and temporary accommodation in a rural environment are involved (Brooker & Joppe, 2013). Camping is also a type of alternative or niche tourism, known as camping tourism, given that tourism refers to an activity in which people travel to and stay in a location different from their usual environment for not more than a consecutive year for mainly recreational purposes (United Nations World Tourism Organization, 1995), while campers also leave their usual environment and go to destinations in national parks or forests for recreational purposes.

The history of camping could be traced back to the early 20th century, pioneered and popularized by Thomas Hiram Holding in the United Kingdom. It is originally considered as an inexpensive and temporary sojourn in a basic tent in nature during holiday (Blichfeldt and Mikkelsen, 2017). Despite the long history and increasing global popularity, camping is an under-researched sector in the international tourism scholarship compared to other alternative tourism such as ecotourism (Brooker & Joppe, 2013; Rice et. al., 2019; Rogerson & Rogerson, 2020).

Motivation of camping refers to the driving force behind the participation of camping. Given that camping is a type of tourism, Iso-Ahola's Motivation Theory (Iso-Ahola, 1983) is one of the fundamental theories for understanding tourism motivation, suggesting that motivation of tourism is seeking intrinsic rewards and fulfilling the desire to escape from everyday routes and familiar environments. Push-Pull Model suggested that people engage in tourism because they are pushed by internal psychological forces and pulled by external destination's attributes. Applying on camping tourism, push factors are listed as needs of escapement, relaxation, personal wellness, adventure (Brooker & Joppe, 2013), family functioning and social interaction (Hassell, Moore & Macbeth, 2015). On the other hand,

pull factors are the perceived emotional benefits provided by camping destination including experiencing nature, beautiful scenery in the natural environment and creating self-image as a camper (Goossens, 2000; Klenosky, 2002; Hassell, Moore & Macbeth, 2015).

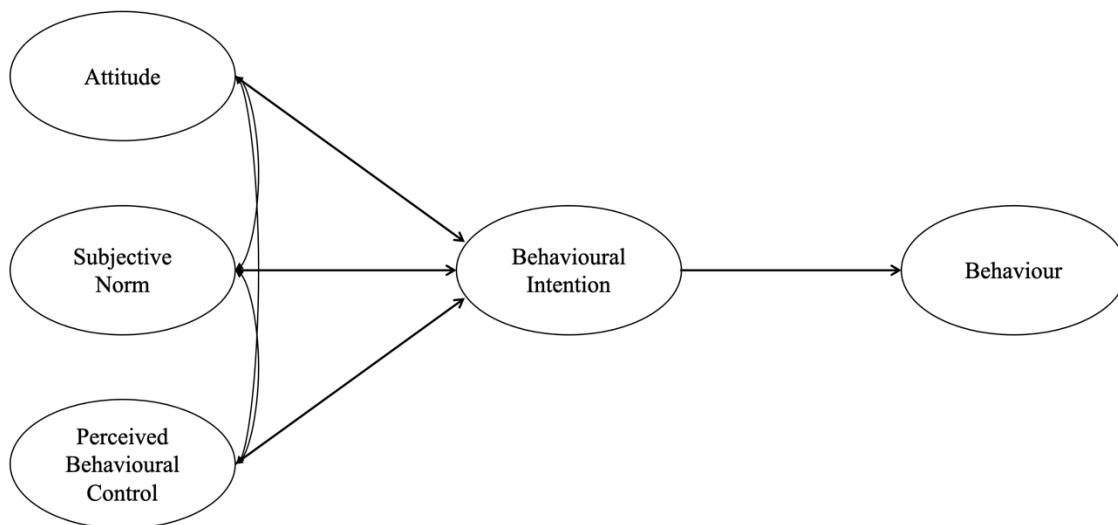
The effects of COVID-19 pandemic on outdoor recreation are researched in other foreign countries recently. For the positive relationship in which the occurrence of COVID-19 pandemic encourages outdoor recreation, a slight increase in the camping plans is discovered among the leisure travelers in United State after the outbreak of COVID-19 pandemic (Craig, 2020) and a significant increase in forest visit is induced during COVID-19 in Germany (Derks, Giessen & Winkel, 2020). While for the negative relationship in which the occurrence of COVID-19 pandemic discourages the outdoor recreation, it is quantified that the trips per person to public outdoor recreation sites decreased 26% during COVID-19 pandemic in the United State due to the perceived risk among the general population and the restriction of access to national parks (Landry, Bergstrom, Salazar & Turner, 2021), and another research reveals that the frequent campers in the United State decreases their participation in backpacking, camping and recreational vehicles camping during the COVID-19 pandemic.

There is an increasing trend associating camping with driving tourism, extending the concept of temporary accommodation in camping from a basic tent into recreational vehicles, caravans and other luxury offerings (WS Lee, JK Lee and Moon, 2019; Brochada & Pereira, 2017). Camping has started to evolve as glamping, a combination of words ‘glamorous’ and ‘camping’, is another term that refers to the luxury camping activity (Craig, 2020). The higher level of comfort and style leads to an increasing popularity in Europe, North America and Australia (Brooker & Joppe, 2013), but insignificant in Asia including Hong Kong. Therefore, driving tourism and glamping are not considered as camping in this research.

2.2 Theoretical framework

On the other hand, the Theory of Planned Behaviour shown on **Figure 3** is applied to understand the change in camping intention. It is a psychological theory that explaining that attitude, subjective norm and perceived behaviour control will affect the behavioural intention, thus facilitates the performance of certain behaviour, so it helps understand and predict people's intentions to engage in various activities (Ajzen, 1991).

Figure 3. *Theory of Planned Behaviour (Ajzen, 1991)*



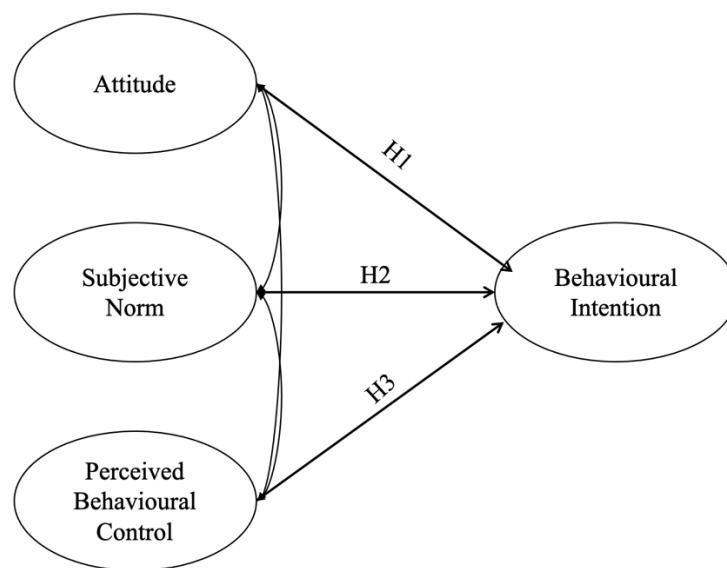
Attitude, subjective norm and perceived behavioural control are the three constructs of behavioural intention. Attitude towards behaviour refers to the individual's favourable or adverse evaluation of certain behaviour, meaning that he/she may evaluate the behaviour as good or bad, beneficial or harmful, pleasant or unpleasant (Ajzen, 1991). Subjective norm refers to the beliefs and opinions of significant others, for example family and friends (Ajzen, 1991). Perceived behavioural control refers to the individual's perception of the level of difficulty in performing certain behaviour (Ajzen, 1991). Lastly, behavioural intention refers to the desire of performing certain behaviour which may lastly leads to the actual performance of the behaviour (Ajzen, 1991).

2.3 Research Question and Hypothesis Development

To investigate the influence of COVID-19 pandemic on Hong Kong people's camping intention with an application of theory of planned behavior, this study is going to answer the following research questions:

1. How do the behavioral intention and behavior of camping change among Hong Kong people under the COVID-19 pandemic?
2. How do the the COVID-19 pandemic affect the attitude, subjective norms, perceived behavioral control and behavioural intention of camping among Hong Kong people?
Could theory of planned behaviour apply and explain the situation?
3. How does the impacts of COVID-19 on camping intention vary among different groups of people?

Figure 4. *Proposed Hypotheses of this study*



Also, **Figure 4** shows that three hypotheses are proposed based on the Theory of Planned Behaviour, predicting the three constructs of camping intention significantly and positively relates with camping intention.

H1: Attitude towards camping significantly and positively affects the behavioural intention of camping under the COVID-19 pandemic

H2: Subjective norm of camping significantly and positively affects the behavioural intention of camping under the COVID-19 pandemic.

H3: Perceived behavioural control of camping significantly and positively affects the behavioural intention of camping under the COVID-19 pandemic.

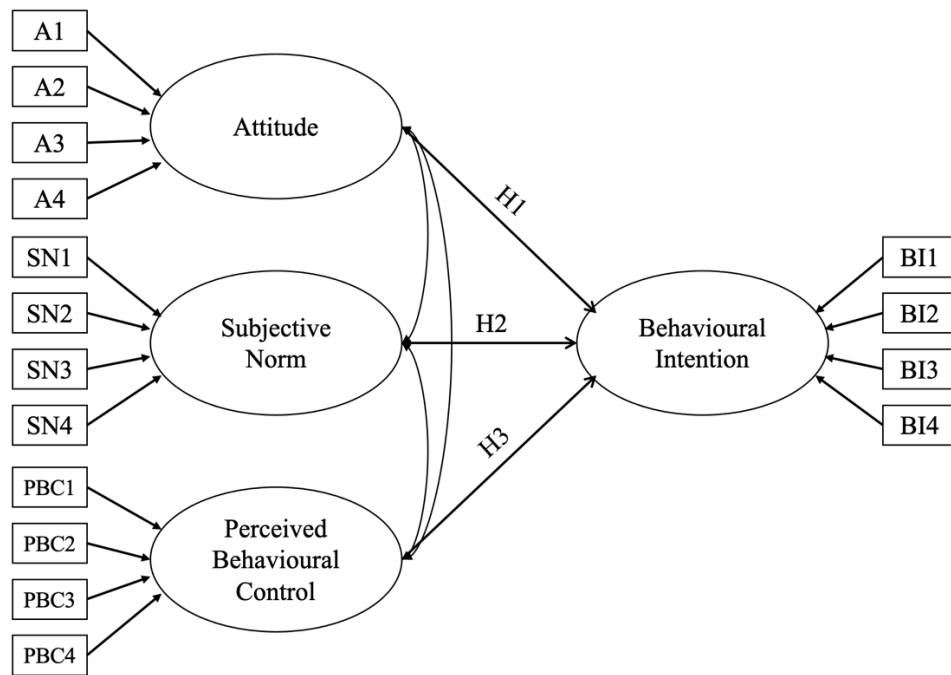
3. Methodology

3.1 Questionnaire design

This study aims to investigate the impacts of the COVID-19 pandemic on camping intention in Hong Kong in a quantitative method. The questionnaire of this study is mainly divided into four parts: (1) demographic characteristics, (2) behavioural intention and behaviour of camping before and after the outbreak of COVID-19, (3) impacts of COVID-19 pandemic on the 3 constructs of behavioural intention of camping according to the theory of planned behaviour, (4) impacts of COVID-19 pandemic on the behavioural intention of camping.

In the first section, demographic information of respondents, including age group, gender, occupation, field of studying or occupation and camping experience are collected. In the second section, respondents rate their intention of camping before and after the outbreak of COVID-19 from 0 to 10, and then count for their average annual frequency of camping before and after the outbreak of COVID-19. The third and forth section aim to assess the constructs of behavioural intention of camping in the structure shown on *Figure 5*. The third section consists of 12 items measuring the impacts of COVID-19 on the three constructs of behavioural intention of camping, including attitude, subjective norm, perceived behavioural control, with 4 statements for each construct. Lastly, the forth section consists of 4 items measuring the impacts of COVID-19 on behavioural intention of camping. Respondents rate the statements about the impacts of COVID-19 on the mentioned elements by a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

Figure 5. *Proposed theoretical model for this study*



In order to assess the impacts of COVID-19, statements are written in pattern of ‘*Due to the COVID-19 pandemic,*’ shown on **Table 1**. Items of attitude towards camping written on the questionnaires have adopted some researches related to the motivation of camping (Pearce, 2005; Young 1999; Hassell, Moore & Macbeth, 2015), including relaxation and escaping from daily pressure (A1), family functioning and social interaction (A2) and getting closer to nature (A4). While A3 is set based on the current global context in which international tourism is restricted in different levels currently, while considering camping as a local tourism which may be an alternative to Hong Kong people. Subjective norm is constructed by the beliefs and opinions of the significant others (Ajzen, 1991), so items measuring subjective norm ask about the interest (SN1), level of support (SN2), actual behaviour of camping among family and friends of the respondents (SN3), and the frequency of camping related information emerged on social media (SN4). Perceived behavioural control refers to the perceived ease or difficulty of performing certain behaviour (Ajzen,

1991), so time (PBC1), resources and equipment (PBC2), opportunities (PBC3) and venue (PBC4) are being measured. Lastly, to assess the behavioural intention of camping, different level of involvement is asked to measure their level of intention, for example being a participant (BI3) or being an organizer (BI4).

Table 1. *Constructs and items tested in questionnaire*

Latent variable	Observed variable	Item text
Attitude towards camping	A1	Due to the COVID-19 pandemic, I desire to release my daily pressure through camping.
	A2	Due to the COVID-19 pandemic, I desire to enhance my social interaction through camping.
	A3	Due to the COVID-19 pandemic, I desire to fulfil my desire for travelling through camping.
	A4	Due to the COVID-19 pandemic, I desire to experience the nature through camping.
Subjective Norm	SN1	Due to the COVID-19 pandemic, my family/friends show interest towards camping.
	SN2	Due to the COVID-19 pandemic, my family/friends support me to go camping.
	SN3	Due to the COVID-19 pandemic, my family/friends went camping.
	SN4	Due to the COVID-19 pandemic, my family/friends release positive information about camping on social media.
Perceived Behavioural Control	PBC1	Due to the COVID-19 pandemic, I have time to go camping.
	PBC2	Due to the COVID-19 pandemic, I have resources to go camping.
	PBC3	Due to the COVID-19 pandemic, I have opportunities to go camping.
	PBC4	Due to the COVID-19 pandemic, I can find a proper campsite.
Behavioural Intention	BI1	Due to the COVID-19 pandemic, I am interested in going camping.
	BI2	Due to the COVID-19 pandemic, I am likely to go camping.
	BI3	Due to the COVID-19 pandemic, I am likely to go for a camping suggested by my family/friends.
	BI4	Due to the COVID-19 pandemic, I am likely to suggest my family/friends going camping together.

Note: A=Attitude towards camping; SN=Subjective Norm; PBC=Perceived Behavioural Control; BI=Behavioural Intention

3.3 Data collection

People aged between 18 – 60 currently living in Hong Kong would be targeted to complete an online questionnaire on Google Form anonymously. Convenient sampling and snowball sampling were adopted in the data collection process by sending the hyperlink of

Google Form to family and friends, posting on social media, and ask for family and friends to spread it out. The questionnaire takes around 5 minutes. No potential benefits is provided for finishing the questionnaire. A total of 186 online questionnaire were received, in which 178 valid questionnaires were used in the data analysis. No missing data is received except the optional question about field of studying or occupation.

3.4 Analytical method

The SPSS 27 statistical software for Windows was used to encode the responds of questionnaire, carry out descriptive statistics analysis, compare means of camping intention and camping behaviour before and after the outbreak of COVID-19 through paired-sample t-test, and lastly to calculate Cronbach's alpha for testing the reliability and validity of the data analysis.

Testing the reliability and validity of the latent variables, Microsoft Excel is used to calculate the values of composite reliability (CR) and average variance extracted (AVE).

Structural equation modelling was applied for studying the impacts of COVID-19 on the attitude, subjective norm, perceived behavioural control and behavioural intention of camping, with the theoretical framework supported by the theory of planned behaviour. Therefore, AMOS 27 is used to work with the path analysis and testing the model fit.

4. Results

4.1 Demographic information of respondents

Regarding the information of 178 respondents from **Table 2**, 41.6% are male and 57.3% are female. Nearly half of the respondents (43.8%) are aged 18 – 23, another half (48.9%) of the respondents aged between 24 to 50, with 16.3% for 24 – 30 age group, 15.2% for 31 – 40 age group and 17.4% for 41 – 50, and only 7.3% of them aged 51 – 60.

Concerning their camping experience, 34.3% of the respondents have never engaged in camping. 22.5% of them are new campers who start engaging after the outbreak of COVID-19 in December 2019. And 43.3% of them have already engaged in camping for at least 3 years, in which 25.3% have 3 – 5-year experience, 7.3% have 6 – 10-year experience and 10.7% have experience with more than 10 years.

4.2 Change in camping intention and camping behaviour under COVID-19

Table 3 shows that the camping behavioural intention among Hong Kong people before the COVID-19 pandemic is rated as 4.64 over 10 (SD=2.825), while it increased to 5.60 over 10 (SD=3.284) during the COVID-19 pandemic. Comparing their means score by paired-sample t-test, camping behavioural intention among Hong Kong people was increased by 0.96 score out of 10 under the COVID-19 pandemic.

Table 4 shows that the annual camping behaviour among Hong Kong people before the COVID-19 pandemic is 1.07 times (SD=1.97), while it increased to 1.41 times (SD=2.56) during the COVID-19 pandemic. Comparing their means frequency by paired-sample t-test, annual camping behaviour of Hong Kong people was increased by 0.34 times per year under the COVID-19 pandemic.

There are increases in standard deviation in both set of data. It is because 34.3% of the respondents have never engaged in camping, while 22.5% of the respondents start

engaging after the outbreak of COVID-19, meaning that a certain amount of respondents experienced an increase in intention and actual camping behaviour during COVID-19, while the respondent who never engaged in camping probably respond in smaller intention and zero annual camping behaviour, therefore the data become more dispersed under the COVID-19 pandemic.

Table 2. Demographic characteristics of respondents.

Age	N	%
18 – 23	78	43.8%
24 – 30	29	16.3%
31 – 40	27	15.2%
41 – 50	31	17.4%
51 – 60	13	7.3%
Gender		
Male	74	41.6%
Female	102	57.3%
Prefer not to respond	2	1.1%
Employment Status		
Student	67	37.6%
Full-time	83	46.6%
Self-employed	17	9.6%
Unemployed	8	4.5%
Retired	1	0.6%
Prefer not to respond	2	1.1%
Major Subject / Industry of Job		
Administration	18	10.1%
Architecture/ Engineering	6	3.4%
Business/ Finance/ Marketing/ Retailing/ Management	20	11.2%
Culture/ Media/ Music/ Fine Arts	13	7.3%
Education	32	18.0%
Geography/ Environmental Studies/ Geography Education	37	20.8%
Language Studies/ Humanities	5	2.8%
Social Science/ Welfare/ Service	12	6.7%
Others (IT/ Science/ Medicine/ Housewife)	10	5.6%
Prefer not to respond	25	14.0%
Camping Experience		
Never	61	34.3%
Since the outbreak of COVID-19 (After December, 2019)	40	22.5%
3 – 5 years	45	25.3%
6 – 10 years	13	7.3%
More than 10 years	19	10.7%

Table 3. Means comparison of camping behavioural intention of respondents before and during COVID-19.

	Mean	Std. Deviation	Sig. (2-tailed)
Camping Behavioural Intention Before COVID-19	4.64	2.825	0.000
Camping Behavioural Intention During COVID-19	5.60	3.284	

Table 4. Means comparison of annual camping behavior of respondents before and during COVID-19.

	Mean	Std. Deviation	Sig. (2-tailed)
Annual Camping Behaviour Before COVID-19	1.0733	1.96981	0.053
Annual Camping Behaviour During COVID-19	1.409	2.5589	

4.3 Impacts of COVID-19 pandemic on attitude towards camping, subjective norm and perceived behavioural control and behavioural intention of camping

In terms of the influence of the COVID-19 pandemic on the constructs of camping intention and camping intention itself, firstly, the standardized factor loading of 16 observed variables shown on **Table 5 & 6** are between 0.629 to 0.937, all above the standard of 0.5 (Tracey et al., 1999), and p values are less than 0.5, confirming the convergent validity and high explanatory power of all observed variables towards all latent variables (Bagozzi & Yi, 1988).

Then, referring to **Table 5 & 6**, the average mean of the observed variables of attitude, subjective norm, perceived behavioural control and behavioural intention of camping are between 4-5 (attitude 4.78, subjective norm 4.61, perceived behavioural control 4.07, and behavioural intention of camping 4.52). According to the Likert scale, scoring 4-5 out of 7 means slightly agree to agree, implying that Hong Kong people agree that the COVID-19 pandemic increased their attitude, subjective norm and perceived behavioural control towards camping, as well as their camping intention.

Table 5. Impacts of COVID-19 pandemic on the attitude towards camping, subjective norm and perceived behavioural control of camping among respondents.

Attitude Item	Mean	SD	Standardized factor loading
A1: Due to the COVID-19 pandemic, I desire to release my daily pressure through camping.	4.68	1.885	0.848
A2: Due to the COVID-19 pandemic, I desire to enhance my social interaction through camping.	4.49	1.961	0.862
A3: Due to the COVID-19 pandemic, I desire to fulfil my desire for travelling through camping.	4.92	2.005	0.906
A4: Due to the COVID-19 pandemic, I desire to experience the nature through camping.	5.04	1.961	0.901
Average Mean of Attitude Items	4.78		

Subjective Norms Item

SN1: Due to the COVID-19 pandemic, my family/friends show interest towards camping.	4.75	1.799	0.866
SN2: Due to the COVID-19 pandemic, my family/friends support me to go camping.	4.22	1.879	0.869
SN3: Due to the COVID-19 pandemic, my family/friends went camping	4.71	2.081	0.761
SN4: Due to the COVID-19 pandemic, my family/friends release positive information about camping on social media.	4.76	1.884	0.750
Average Mean of Subjective Norms Items	4.61		

Perceived Behaviorual Control Item

PBC1: Due to the COVID-19 pandemic, I have time to go camping.	4.38	1.853	0.821
PBC2: Due to the COVID-19 pandemic, I have resources to go camping.	3.89	1.841	0.788
PBC3: Due to the COVID-19 pandemic, I have opportunities to go camping.	4.47	1.926	0.936
PBC4: Due to the COVID-19 pandemic, I can find a proper campsite.	3.53	1.817	0.629
Average Mean of Perceived Behavioural Control Items	4.07		

All items are rated on the Likert scale ranging from (1) strongly disagree to (7) strongly agree.

Table 6. Impacts of COVID-19 pandemic on the behavioural intention of camping among respondents.

Behavioural Intention	Mean	SD	Standardized factor loading
BI1: Due to the COVID-19 pandemic, I am interested in going camping.	4.40	1.990	0.840
BI2: Due to the COVID-19 pandemic, I am likely to go camping.	4.47	1.955	0.937
BI3: Due to the COVID-19 pandemic, I am likely to go for a camping suggested by my family/friends.	4.68	1.926	0.936
BI4: Due to the COVID-19 pandemic, I am likely to suggest my family/friends going camping together.	4.54	2.023	0.937
Average Mean of Behavioural Intention Items	4.52		

All items are rated on the Likert scale ranging from (1) strongly disagree to (7) strongly agree.

The item which gains the highest score among the observed variables is A4, meaning that a lot of people attracted by camping under the COVID-19 due to the beautiful natural sceneries and the activities which could be done in the natural environment, which means the pull factor of the camping destination. While the item with the lowest score is PBC4, meaning that people do not find finding a proper campsite an easy task because of the COVID-19 pandemic, this may be related to the closure of campsite by the Agriculture, Fisheries and Conservation Department.

4.4 Impacts of the COVID-19 pandemic on Camping Intention among Different Groups

Table 7. Impacts of COVID-19 pandemic on the behavioural intention of camping among respondents with different demographic variables

Variables	N	Avg. Attitude	Avg. Subjective Norm	Avg. Perceived Behavioural Control	Avg. Camping Intention
Age Group					
18 – 30	107	5.32	5.31	4.59	5.18
31 – 60	71	3.97	3.56	3.28	3.53
Camping Experience					
Never	61	3.30	3.84	3.67	3.80
Since Dec 2019	40	5.57	5.77	5.16	5.79
3 years or above	77	5.12	4.76	4.11	4.44

It is believed that demographic characteristics put certain level of influence on the result, so the influence of the external variables, which are age and camping experience, will be assessed by comparing the average score of attitudes, subjective norm, perceived behavioural control and camping intention.

Regarding to different age group, **Table 7** shows that the average score of all latent variables among people aged 18 – 30 are between 4.59 – 5.32 out of 7, while that among people aged 31 – 60 are between 3.28 – 3.97, indicating that younger people in Hong Kong tend to be more influenced by the COVID-19 pandemic than older people. This may be accounted by their vulnerability and risk perception towards the coronavirus, since the death rate of infected younger people is extremely low (Chen et al., 2021), the attitude towards camping among younger people tend to be influenced because camping helps them release stress and solve boredom caused by the COVID-19 pandemic. However, the infected old adults especially those who got chronic diseases have a higher death rate (Chen et al., 2021), so their attitude, subjective norm, perceived behavioural control and camping intention would not be raised by the COVID-19 pandemic, since camping under COVID-19 pandemic is not beneficial to their health and family may not support them to go camping as well. Also, teenagers tend to be adventurous, so even they understand the risk of being infected when go camping with friends, they tend to ignore the consequences; however, older adults tend to focus more personal health and are less adventurous, so their mean score reflects they even slightly disagree that the COVID-19 pandemic poses impacts on their camping intention.

Regarding to camping experience, **Table 7** shows that non-campers, which means people who have never engaged in camping, have the lowest average score in all latent variables (3.30 – 3.84), with the average score in attitude being the lowest item, meaning that people who never go camping are mainly because they do not think camping is good to them, so even COVID-19 pandemic will not encourage them to go camping; then is the experienced

campers whose camping experience is more than 3 years (4.11 – 5.12); while the new campers emerged under the COVID-19 pandemic who started since December 2019 have the highest average score in all latent variables (5.16 – 5.79), with the average score in subjective norm being the highest item, meaning that the camping intention and behaviour of the significant others are also highly influenced by the COVID-19 pandemic, which may be the reason encouraging them to start camping under the COVID-19 pandemic. In short, the COVID-19 pandemic has the highest influence on the camping intention among people aged 18 – 30 and people started camping since the outbreak of COVID-19.

4.5 Structural Model and Model Fit

Table 8. Impacts of COVID-19 pandemic on the behavioural intention of camping among respondents with different demographic variables

Latent Variable	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's alpha
Attitude: A1 – A4	0.894	0.774	0.931
Subjective Norm: SN1.- SN4	0.854	0.662	0.890
Perceived Behavioural Control: PBC1 – PBC4	0.833	0.642	0.876
Behaviorual Intention: BI1 – BI4	0.837	0.834	0.951
Recommended Value/ Standard (Hair et al., 2006; Fornell & Larcker, 1981; Nunnally, 1978)	> 0.7	> 0.5	> 0.7

Testing the reliability and validity of the observed variables with regards to the latent variables, apart from the data of standardized factor loadings shown on **Table 5 & 6**, Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) have been measured in **Table 8**. Firstly, the values of Cronbach's alpha of 4 latent variables are between 0.876 to 0.951, all above the standard of 0.7 (Nunnally, 1978), implying a good internal consistency and reliability of the data. Secondly, composite reliability (CR) values of 4 latent variables are between 0.833 to 0.894, all above the standard of 0.7 (Fornell and Larcker, 1981), implying the good internal consistent among latent variables (Hair et al.,

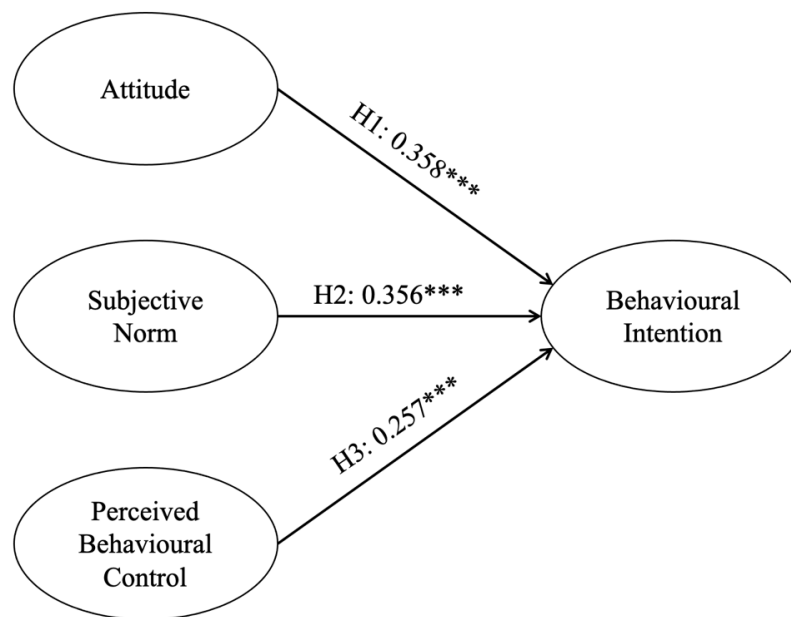
2006). Lastly, average variance extracted (AVE) values of 4 latent variables are between 0.642 to 0.834, good discriminant validity is indicated by having AVE values higher than 0.5 (Fornell and Larcker, 1981).

Table 9. *Model fitness index of this study*

Fitness Index	Index in this research	Recommended Value (Chin & Todd, 1995)
χ^2/df	2.53	Between 1 – 3
GFI	0.852	> 0.9
CFI	0.946	> 0.9
IFI	0.946	> 0.9
RMSEA	0.093	< 0.08

To see could the Theory of Planned Behaviour explain the camping intention under COVID-19 pandemic, 5 fitness indices are used for testing the model fit, including the value of χ^2/df (chi-squared /degree of freedom ratio), Goodness of fit index (GFI), comparative fit index (CFI), incremental fit index (IFI), and root mean square error of approximate (RMSEA). According to Chin & Todd (1995), the general fitting degree criteria of an overall model: value of χ^2/df is between 1 to 3, GFI, CFI and IFI > 0.9 and RMSEA < 0.08. From **Table 9**, the related model fit indices of this research are χ^2/df =2.53, GFI=0.852, CFI=0.946, IFI=0.946 and RMSEA=0.093. The values of χ^2/df , CFI and IFI met the standard, and the values of GFI and RMSEA are still not very far away from the standard. Therefore, the model is partially satisfied.

Figure 6. Result of the structural equation model.



Note: *** Significance at 0.001 level

Figure 6 is a path diagram presents the results of structural modelling, showing the linear relationship among attitude, subjective norm, perceived behavior and behavioural intention of camping due to COVID-19 pandemic. Since the standardized regression weight of attitude towards camping, subjective norm and perceived behavioural control towards behavioural intention of camping are 0.358, 0.356 and 0.257 respectively, with $p < 0.001$, these indicate that attitude towards camping, subjective norm and perceived behavioural control are significantly and positively related with the behavioural intention of camping, meaning that attitude, subjective norm and perceived behavioural control are significantly and positively related to camping intention, so H1, H2 and H3 are supported. Regarding their relative importance in affecting camping intention under the COVID-19 pandemic, attitude towards camping has the highest relative importance, then subjective norm, and lastly perceived behavioural control.

5. Discussion and Conclusion

5.1 Key findings

This study provides the up-to-date information about the change of camping intention and camping behaviour, and illustrates the relationship between attitude, subjective norm, perceived behavioural control and camping intention under the COVID-19 pandemic, showing that there are increases both in camping intention and camping behaviour among Hong Kong people, and also the theory of planned behaviour help understand the camping intention under the COVID-19 pandemic, which are similar to the studies which also understand the tourism intention under the COVID-19 pandemic with an application of the theory of planned behaviour in India and Taiwan (Hamis & Bano, 2021; Wang, Yeh, Chen & Huan, 2022). Other studies also shows that the intention and behaviour of camping tourism or forest visit in the US and Germany increases during the COVID-19 pandemic (Craig, 2020; Derks, Giessen & Winkel, 2020).

However, the relative importance of among three constructs of the behavioural intention varies among different studies which understands the tourism intention with the theory of planned behaviour. For example, Hamis & Bano (2021) found that subjective norms do not significantly predict the travelling intention. Also, Wang, Yeh, Chen & Huan (2022) pointed that perceived behavioural control is the main contributor to travelling intention. These differences may be accounted by the different characteristics of a local 3-day camping tourism and a foreign 1-week international tourism in which a 7-to-21-day quarantine is required. Comparing camping tourism and international tourism, more money is involved in an international tourism, so even significant others support or ask an individual to go together, their tourism intention and behaviour will not be affected a lot. Also, the quarantine and difficulties in confirming the dates of flight increase the perceived

behavioural control of an international tourism, therefore it has the highest relative importance rather than attitude does in this study.

5.2 Implication and suggestion

In terms of the implication, this study proves that the camping intention among Hong Kong people increased under the COVID-19 pandemic, and the reasons are because of the constructs of behavioural intention, namely attitude, subjective norms and perceived behavioural control are all increased due to the COVID-19 pandemic. The rising popularity of camping illustrates that camping is a type of local tourism or recreational industry which worth our governments' further development and management, for example providing sufficient campsites and auxiliary facilities in their planning in order to meet the social recreational needs, which is the increasing camping intention or even camping behaviour. Also, educators in schools and environmental organization in Hong Kong communities are suggested to cultivate the environmental awareness by introducing the concept of leave-no-trace in school curriculum and disseminate the correct camping habits through social media. So that even the camping intention and camping behaviour increased, Hong Kong people will be able to utilize the natural resources in our country parks in a sustainable way.

Some other minor but urgent suggestion is that, people reflected that it is difficult to find a proper campsite in the period of COVID-19 pandemic, it indicated that reopening of the official campsite in country parks is worth considering.

5.3 Limitation and Directions for future research

This study focuses on how the COVID-19 pandemic affects the behavioural intention of camping, but not the actual behaviour of camping. Therefore, it is suggested to include the actual behavioural data of camping. Also, since the COVID-19 has not been ended no

matter locally or globally, the post-COVID-19 behavioural intention and actual behaviour of camping is expected to be measured in the future.

On the other hand, the changing trend of COVID-19 pandemic is not included in this study. The trend of confirmed cases and community outbreak, variant of virus in the future and government policies may change over time, while these factors contribute to the attitude, subjective norms, and perceived behavioural control of camping among Hong Kong people. For example, when the situation of COVID-19 become more serious, people may think camping with friends increase chances of infection, family or friends may no longer support them to go camping, or they no longer think that they have enough energy to go camping after infection, meaning that the intention may shift according to the seriousness of the COVID-19 pandemic in Hong Kong. Suggested by Hamis & Bano (2021), perceived risk of the COVID-19 pandemic is one of the crucial constructs which affects the travelling intention under COVID-19 in India. Therefore, the relationship of seriousness or perceived risk of COVID-19 and camping intention in Hong Kong could be assessed in the future.

Also, although glamping is not a very popular type of camping in Hong Kong as mentioned at the beginning, the financial budget 2021 of Hong Kong government decided to use 5 million dollars for glamping facilitates construction in the country park with the objective of enhancing country parks. It sparks a hot discussion and controversy because some environmental organization concerns that developing luxury camping activity in country parks may restrict the access of some people (Liber Research Community, 2021), and it violates the publicity of country park suggested by the Country Parks Board Planning and Management Committee (1988), saying that “there are no restriction on entry into the Country Park in terms of time or cost”. At the same time, respondents of this study reflected that they desire to experience the nature through camping during the COVID-19 pandemic.

Therefore, the site preference among campers in Hong Kong may need to be reassessed as a

reference for the government to consider the future development of camping as a recreational industry.

5.4 Conclusion

To conclude, under the COVID-19 pandemic, firstly, the camping intention and behaviour among Hong Kong people has increased. Secondly, the relationship between the COVID-19 pandemic and camping intention is confirmed significantly and positively related, as the attitude, subjective norm and perceived behavioural control increases, camping intention will increase. Also, the camping intention among younger people and new campers emerged since the outbreak of COVID-19 have the highest influence by the COVID-19 pandemic. Lastly, the Theory of Planned Behaviour helps understanding the camping intention among Hong Kong people to a large extent.

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