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Full Length Research Paper

The physical disabilities' travel behaviors

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This study focuses on the self-perceived health conditions, activity constraints and travel attitudes of the physically disabled and their intentions and behaviors on traveling. Results show that increase in actual expenditures and frequencies in traveling become evident as their intentions to participate become higher. Furthermore, milder levels of physical pain lead to an increase in the number of days and frequency of travel. Therefore, this study recommends that travel providers should consider the travel intentions and health conditions of the physically disabled when planning travel activities. Such an approach can create re-participation in traveling of the physically disabled and provide further recommendations and promotions of the traveling benefits to other physically disabled people.

Key words: Self-perceived health conditions, travel constraints, travel behaviors.

INTRODUCTION

With the surge in economic development in recent years, global trends in tourism and travel have pervaded into Taiwan's travel industry, making it one of most essential activities in the 21st century. As the quality of life of Taiwanese continuously improves, the importance of exercise, health and travel activities is also increasing. Furthermore, with the implementation of the "two days-off a week" policy by the government in 2001, Taiwanese have more flexibility in their use of time. Changes in Taiwanese people's outlook towards the value of work and leisure have also become trends in outbound tourism and domestic travel (Lin, 2005; Taso, 2003). In the "2007 Survey of Visitors to the Principal Scenic Spots in Taiwan" conducted by the Tourism Bureau under the Ministry of Transportation and Communications, the total number of domestic travels made by Taiwanese was 149,786,910 trips. The average number of travels per person was 6.51 trips, which is a 0.5 growth from 2005 (Tourism Bureau, 2007). This result demonstrates the growing importance of travel by the Taiwanese. However, a comprehensive survey conducted on the travel products market shows that while travel products and itineraries are available everywhere for the public, they are inadequate for the needs of the physically and mentally disabled.

Minority rights are increasingly gaining recognition in this time of democratic upsurge. Based on the statistics compiled by the Ministry of Interior (Ministry of the Interior Office statistical bulletin, 2008), under the Central Government, as of June 2008, 1,027,000 persons have disabilities. This represents a 2.63% increase from the previous year. In addition, 4.47% of the total population is physically and mentally disabled, which is an increase of 0.10% from 2007. Each year shows a rise in population, with the physically and mentally disabled occupying the largest percentage (38.7%) of the total population with disabilities. Using these figures, the physically and mentally handicapped population represents a growing trend. Several developed countries have already enacted laws to assist in encountering lesser constraints while traveling. With the implementation of the Physically and Mentally Disabled Citizens Protection Act, there has been a growing importance and safeguard towards the rights of the physically and mentally disabled when traveling. Presently, domestic laws exist to protect their basic rights of life, such as the Welfare Regulations for the Mentally and Physically Disadvantaged, the Handicapped Pro-tection Law, and the Special Education Law. Thus, if they were provided with various alternatives, the physically and mentally disabled would

have strong intentions and preferences, and could partake in more outdoor and leisure activities (Darcy, 1998).

Harvel and Greenway (1984) revealed that the self-concept of the physically and mentally disabled is lower than that of normal people. They have higher levels of anxiety and lack an overall self-concept. Not only do their physical and mental illnesses bring about health problems, these are also more likely to affect their quality of life, and in turn, lead to the consumption of medical resources on a national level. Thus, if the disabled would be provided with resources in developing discipline and proper exercise habits, they would not only be provided with leisure, social and recreational activities, but the risks of chronic illnesses such as obesity, hypertension and cardiovascular diseases could also be reduced or avoided.

Even though the physically and mentally disabled have impairments, they also have profound travel needs and motivations. When provided with various alternatives, they have stronger intentions and perceptions, with more outdoor and leisure activities (Darcy, 1998). Leisure constraints can facilitate an understanding of the leisure behaviors of various subgroups (Samdahl and Jekubovich, 1997). Further examination can also aid in knowing the needs and potential needs of those participating and not participating in leisure activities (Crawford et al., 1991; Jackson, 1988). Researching the constraints in tourism and travel activities can enhance knowledge in attracting potential customers in this market. The leisure constraints model proposed by Crawford et al. (1991) classifies factors influencing individual leisure constraints into three categories: intrapersonal, interpersonal and structural.

Many physically and mentally disabled people possess a positive leisure attitude (Chen, 2005). Attitude refers to the subjective cognition and evaluation of individuals towards certain behaviors. Fishbein and Ajzen (1975) classify attitude into two kinds: attitude toward the behavior, which is the attitude held by an individual towards behaviors; and, attitude toward the object, which is the attitude held by an individual toward persons, events, or objects outside of behavior. Attitude toward the behavior can be used to predict behaviors. Measuring this can determine the intention to perform a certain behavior by individuals. When the attitude toward a behavior is more positive, the behavior intention becomes greater. It can be said that attitude is the steady value attached to objects and events. It is also one of the significant factors influencing individual behaviors and actions (Chen, 1996). However, Fishbein and Ajzen (1975) believe that the best predictor of behavior is behavior intention. Thus, the main purpose of this study is to determine whether the leisure attitude of the physically and mentally disabled influences their behavior intention and behavior. Secondly this study looks at whether their behavior intention influences their travel behavior.

Even with impairments, the physically and mentally disabled possess intense travel needs and motives like any other person. However, they also have to consider more factors than the normal person and encounter more challenges during travel (Yau et al., 2004). Previous studies on the travel experience of the physically and mentally disabled discussed the impact of leisure participation of the hearing disabled towards their mind and behavior (Han and Zhang, 2004), constraints experienced by the physically disabled when participating in group travel (Liu, 2003), and present conditions of disability-friendly hotel rooms (Lu and Huang, 2007). However, studies on the impact of self-perceived health and behavior intention towards behavior are relatively few. Thus, this study investigates the mutual influence existing between the self-perceived health and behavior intention of the disabled and their behavior.

What causes the physically disabled to be unable or unwilling to travel? Is it because of constraints resulting from subjective individual factors or from objective environmental factors? This study analyzes this question. An investigation of previous studies of the physically disabled shows that most research discusses the dilemmas and constraints in leisure travel participation (Henderson et al., 1995; Tsai, 2008), the impact of hotel room environments towards the lodging behavior of the lower-limb disabled (Lu and Huang, 2008), leisure attitudes and leisure education of the physically disabled (Chen, 2005), perception of the physically disabled towards recreational sports (Jiang, 2004), and participation of disabled athletes in recreational sports (Guan and Wu, 2003). Research into the attitude, behavior intention and behavior of the physically disabled towards travel participation are relatively few. Thus, this study examines how to increase the travel participation of the physically disabled and provides recommendations which help managers and policy makers.

LITERATURE REVIEW

Behavioral intention

Psychologists Fishbein and Ajzen (1975) consider intention as a necessary process for any behavior to manifest and a determinant to act prior to the manifestation of behavior. Intention refers to the degree to which a person has determined to perform a certain behavior. Ajzen (1991) defines intention as the person's subjective probability of performing a behavior. It reflects the willingness of an individual to engage in a certain

behavior. In the study of leisure and recreation, behavior intention refers to the intention of an individual to revisit within a year of traveling and the willingness to travel more (Baker and Crompton, 2000). The main method of measuring behavior intention is through the willingness to recommend to others. Indicators such as a positive word of mouth and willingness to recommend are employed to measure behavior intention (Bigne et al., 2001).

Huang (2009) mentions a negative correlation existing between the e-learning participation and willingness of employees and the constraints they encounter. Moreover, Chang (2008) travel constraints do have a definite impact for windsurfers when they engage in windsurfing activities. Thus, this study examines whether an inverse relationship also exists between the travel constraints encountered by the physically disabled and their behavior intention. From this, this study provides its first hypothesis: there exists a significant relationship between travel constraints and behavior intention.

Kuo and Yu (2007) considers attitude as the main factor influencing behavior intention (Ghen and Liu, 2004; Yau et al., 2004). There exists a positive relationship between the attitude of technology professionals and their intention for knowledge sharing (Wu and Lin, 2007). Apart from this, Chang and Shen (2005) realized that an individual's behavior intention to walk is influenced by potential factors such as attitude towards walking. From this, this study gives its second hypothesis: there exists a significant influence between the travel attitude of the physically disabled and their behavior intention.

Xiao (2006) Literature on the influence of self-perceived health towards behavior intention focuses on the factors related to self-assessed health conditions such as age, education attainment and specialization, and the positive relationship these share with the willingness to volunteer. From this, this study offers its third hypothesis: there exists a significant relationship between self-perceived health conditions and behavior intention.

Travel behavior

Travel refers to those activities performed through the act of leaving the house to go from one place to another and for purposes other than those included in daily tasks. In turn, travel behavior refers to those actions and activities manifested outwardly during travel and attributed to a person's choice (Harvel and Greenway, 1984).

Liu (2004) literature on the influence of constraints towards behavior focuses on the research on constraints and behavior of adventure travel. If constraints to participation can be lessened in the areas of facilities, personal fitness and interpersonal factors, then (Tsai, 2008) the actual participative behavior of those who have yet to participate in adventure travels can be reinforced. Thus, the fourth hypothesis of this study is: there exists a significant relationship between travel constraints and behavior.

Wei and Ko (2008) consumer attitude has a significant positive influence on green consumer behavior. A significant positive relationship exists between the attitude towards and participation in recreational sports (Chen, 2008).) There is also a positive correlation between the knowledge, attitude, and behavior of nursing personnel regarding needle stick prevention (Hsieh et al., 2006). From these instances, it is evident that attitude is the main factor influencing behavior. From this, this study presents its fifth hypothesis: there exists a significant correlation between the attitude and behavior of the physically disabled in travel participation.

Taso (2003) from the literature gathered, shows the participation motive, health behavior, and self-perceived health of individuals with different backgrounds and different participation behavior have a positive correlation with their exercise behavior. From this, this study gives its sixth hypothesis: there exists a significant relationship between self-perceived health and travel behavior.

Relationship among behavior intention with behavior

Ajzen and Driver (1992) believe that behavior intention can effectively predict behavior, with behavior intention as a critical factor in influencing behavior (Blue, 1996; Gopi and Ramayah, 2007). Bock and Kim (2002) apply the theory of reasoned action to examine behaviors in knowledge sharing with the results showing that behavior intention directly influences actual behavior.). Behavior intention in self travel has a significant influence on travel behavior (Tsai et al., 2008) . From this, this study presents its seventh hypothesis: there exists a significant relationship between behavior intention and behavior.

RESEARCH METHODS

This study aims to discuss the interactive impact of the travel constraints, attitudes and self-perceived health of the physically disabled on their travel intentions and travel behaviors.

RESEARCH FRAMEWORK

Data collection

The focus of this study is the physically and mentally disabled. Data was based on the associations for the physically disabled in Taiwan. Associations randomly selected to serve as subjects were the Jian Li Rehabilitation Association, the Heart Disease Association, the Welfare Association, and the Association of Spinal Cord Injury. To allow for a dispersed random sampling, a random sampling method

selecting the respondents was used. These respondents were also contacted by phone in advance. To increase the response rate of the questionnaire, a field survey method was also utilized for this study to facilitate explanations with regards to the motives and objectives of this study and to seek the consent of the respondents. To determine the amount of time required for the questionnaire, direct interviews and completion of questionnaires on site were also conducted. (Figure 1)

Questionnaire design

The questionnaire consists of six major parts which are described in detail below:

1. Individual Variables: The questionnaire asked for the respondents' gender, age, marital status, education, profession, monthly disposable income, level of disability and ambulatory aids used.
2. Travel Constraints: The leisure constraint scale developed by Raymore et al. (1993) was employed for this study. This is composed of intrapersonal, interpersonal, and structural constraints.
3. Travel Attitudes: The travel attitudes of the physically disabled in this study were examined using the leisure attitude scale designed by Beard and Ragheb (1983). It is composed of three dimensions: cognitive, affective and behavioral and consists of 35 items measured on a five-point scale.
4. Self-Perceived Health: This study adopts the World Health Organization (W.H.O.) (1948) definition of health as 'a state of complete physical, mental and social well-being'.
5. Behavior Intentions: The travel behavior intentions of the physically disabled in this study were assessed using the behavior intention scale proposed by Zeithaml et al. (1996) on their research on the behavior and willingness manifested by customers after the performance of service. The scale includes five dimensions: loyalty, propensity to switch, willingness to pay more, external response and internal response. A total of 13 items were developed and measured on a five-point scale.
6. Frequency of Behavior: The frequency, number of days and travel expenditures are evaluated.

RESULTS

This study presents statistical analysis performed on each of the hypotheses, tests each of them and discusses the results.

Describing statistical

From the 188 questionnaires distributed, a total of 188 were returned, resulting in a response rate of 100%. A table was first constructed based on the individual variables collected. As shown on the following table, from those randomly sampled, 21.3% have a disability at a mild level, 48.9% at a moderate level and 29.8% at a severe level; the number of male respondents is greater than that of females; subjects who are 41 - 50 years old occupy the largest percentage (46.8%) and those 51 years old and above are occupy 19.1%; the majority are

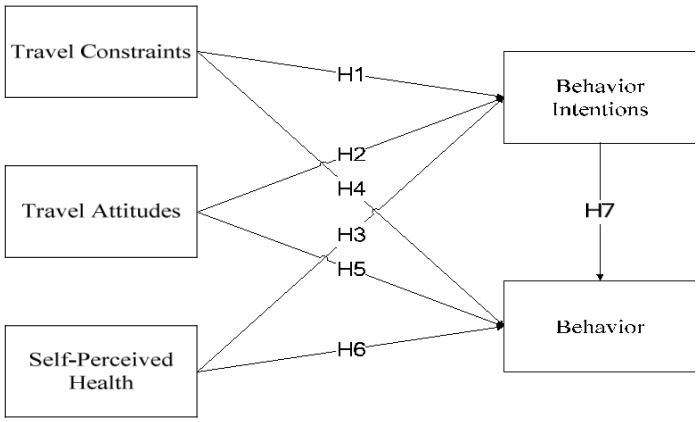

Figure 1. Research framework.

married (59%); at level of education, the number of respondents' in high schools and vocation schools are greater with 36.7%, while 23.9% are in junior colleges and universities; most are in the services sector (28.7%), followed by those in other industries (25.3%), and those in the public service sector (20.2%); 43.1% earn a monthly disposable income of 15000 NTD and below, while 30.9% earn 15000-30000 NTD; with regards to ambulatory aids, 25% uses canes, 23.9% use wheelchairs, and 51.1% use other items.

Factor and reliability analysis

This study employs the principal component analysis in its factor analysis. The factors were extracted until the eigenvalue was greater than 1. Then these were rotated using the varimax method. Factor loadings with absolute values greater than 0.5 make up the elements of the factors. The questionnaire for this study was designed referencing past research and the needs of this study. To know whether scores are consistent within the same group of subjects in the same test and when performed several times, a reliability test was conducted on the questionnaire. The reliability test uses Cronbach's coefficient as a measure. When Cronbach's coefficient is greater than 0.5, then it indicates that this questionnaire is acceptable. These also serve as the basis for imputing a label to the different factors. (Table 1)

Travel constraints

After the factor analysis, constraints can be divided into three dimensions:

1. Factor dimension 1: Labeled as 'individuals constraints', this dimension is comprised of seven items. The

Table 1. Demographic analysis.

Variable		Number	%	Variable		Number	%
sex	Male	123	65.4	Jobs	Student	10	5.3
	Female	65	34.6		Business	35	18.6
age	20 years of age	6	3.2		services sector	54	28.7
	21 - 30 years old	24	12.8		Military, civil service staff	38	20.2
	31 - 40 years old	34	18.1		Agriculture and fishery	3	1.6
	41 - 50 years old	88	46.8		Other industries	48	25.3
	51years old	36	19.1	a monthly disposable income	15000 and below NTD	81	43.1
Marriage	Single	77	41		15000-30000 NTD	58	30.9
	Marriage	111	59		300000-45000 NTD	30	16.0
education level	Junior school	20	10.6		45000-60000 NTD	11	5.9
	High school	69	36.7		60000-75000 NTD	3	1.6
	Junior colleges	45	23.9		75000-90000 NTD	1	0.5
		45	23.9		90000 and above	4	2.1
	Institute	9	4.8	disability	Mild level	40	21.3
	Canes	47	25.0		Moderate level	92	48.9
	Wheelchairs	45	23.9		Severe level	56	29.8
		96	51.1				

Cronbach's of 0.856. Main attributes refer to the psychological state and preferences of individuals acting on constraints and preferences. These also refer to the interactive impact of preferences and leisure participation. This dimension includes depression, desires and pressures, among others.

2. Factor dimension 2: Labeled as ‘interpersonal constraints’, this dimension is comprised of seven items. The Cronbach's of 0.831. Main attributes refer to the results of interaction between individuals which lead to an interactive impact of constraints with leisure preferences and leisure participation. For example, leisure preferences among friends are mutually affected. Even if one party has a high interest towards an activity, he or she will not participate possibly because another party is not interested.

3. Factor dimension 3: Labeled as ‘structural constraints’, this dimension is comprised of seven items. The Cronbach's of 0.903. Main attributes refer to the general factors affecting travel preferences and participation. These include family life cycle, climate and working hours, among others. Structural constraints are easily overcome when a high degree of preference exists. For the questionnaire used for this study and its constraints (Table 2), its Cronbach’s coefficient is greater than 0.6, illustrating the relatively high level of consistency and homogeneity of the contents of this questionnaire.

Travel attitude

After the factor analysis, attitude can be divided into three dimensions:

1. Factor dimension 1: Labeled as ‘cognitive’, this dimension is comprised of twelve items. The Cronbach's of 0.938. Main attribute refers to the belief, perception and message towards an attitude object. Since cognition usually brings a statement of an event of valuable significance, this can show what an individual knows towards an attitude object and his or her approval and opposition towards this.

2. Factor dimension 2: Labeled as ‘affection’, this dimension is comprised of eight items. The Cronbach's of 0.928. Main attributes refer to the emotions held by an individual towards an attitude object. These include both positive and negative feelings such as subjective perception or aversion, sympathy and rejection.

3. Factor dimension 3: Labeled as ‘behavioral’, this dimension is comprised of eleven items. The Cronbach's of 0.930. Main attributes refer to the response bias of an individual towards an attitude object. When an individual must take action towards an attitude object, he or she possesses a certain kind of behavior. This is a state of preparative state of response and immediately manifests outwardly through a behavior.

For the questionnaire used for this study and its

Table 2. Factor analysis of constraints.

Factor question	Individuals constraints	Interpersonal constraints	Structural constraints
I am too shy, so I can not start a new tourism activity.	0.597		
It is more likely to do a new tourism activity that my family approves of.	0.735		
It is quite unlikely to do a new tourism activity where I can not manage to relax.	0.690		
It is more likely to do a new tourism activity that some of my friends like.	0.708		
It is more likely to do a new tourism activity that is compatible with my religious faith.	0.789		
It is more likely to do a new tourism activity that does not make me feel uneasy.	0.560		
It is more likely to do a new tourism activity that is technically simple.	0.646		
People I know live too far away, so they can not start a new tourism activity with me.		0.537	
People I know usually do not have time, so they can not start a new tourism activity with me.		0.739	
People I know usually do not have enough money, so they can not start a new tourism activity with me.		0.753	
People I know usually have too much family responsible, so they can not start a new tourism activity with me.		0.755	
People I know usually know what kind of new tourism activities they can do with me.		0.700	
People I know usually do not have good skills, so they can not start a new tourism activity with me.		0.663	
People I know usually do not have transportation, so they can not start a new tourism activity with me.		0.592	
If there are not too many people using new tourism activities facilities, I am more likely to do the activity.			0.612
If I have something else to do, I am more unlikely to do a new tourism activity.			0.769
If I have transportation, I am more likely to do a new tourism activity.			0.774
If I know what its usefulness is, I am more likely to do a new tourism activity.			0.771
If it is not convenient to use the facilities of a new tourism activity, I am unlikely to do this activity.			0.733
If I do not have time, it is unlikely to do a new tourism activity.			0.823
If I have money, I am more likely to do a new tourism activity.			0.744
Reliability ( )	0.856	0.831	0.903
Constraints the overall reliability		0.910	
Eigenvalue	4.514	3.900	3.588
Explained variance (%)	21.497	18.571	17.083
Total explained variance (%)		57.151	
KMO (Kaiser-Meyer-Olkin)		0.882	
Bartlett spherical test		2054.126	

constraints (Table 3), its Cronbach'scoefficient is greater than 0.6, illustrating the relatively high level of consistency and homogeneity of the contents of this questionnaire.

Behavioral intention

After the factor analysis, behavioral intention can be divided into two dimensions:

Table 3. Factor analysis of attitude.

Factor question	Cognitive	Affection	Behavioral
Individuals involved in tourism activities contribute to the vitality of recycling.	0.598		
Involved in tourism activities can enhance personal productivity.	0.662		
Involved in tourism activities will improve the individual's happiness.	0.686		
Involved in tourism activities on the personal health benefits.	0.741		
It is often when the travel involved in the development of friendship.	0.755		
Tourist activities for the individual are beneficial.	0.700		
Engage in tourism activities is a wise use of time means.	0.686		
Do you think the time spent on tourism activities are not pieces of a waste of time thing.	0.657		
Do you think often engaged in tourism activities is correct.	0.666		
Novelty of your travel activities is interesting.	0.722		
You are willing to allocate more time to engage in tourism activities.	0.734		
Your tourism activities so that you have a pleasant experience.	0.632		
Engaging in tourist activities, you are able to live from me.		0.550	
You focus on their tours.		0.554	
You are engaged in tourism activities bring you pleasure.		0.566	
Compared with other activities, you will give priority to tourism.		0.526	
You will spend time in the tourist activities in education.		0.703	
Even if you are busy, you will engage in tourism activities.		0.569	
In favor of increasing your own free time to engage in tourism activities.		0.653	
You will go to collect information to enhance their own quality of tourism activities.		0.592	
There are some tourist activities, if not planned in advance, you will do it.			0.588
You use a lot of time and energy to enhance their ability to engage in tourism activities.			0.624
If you can have plenty of time, you will carry out more tourism activities.			0.648
You afford it, you will buy some appliances conducive to the pursuit of tourism activities.			0.603
If you can choose, you will increase the time to engage in tourism activities.			0.564
How often do you engage in tourism activities?			0.513
Individuals involved in tourism activities contribute to the vitality of recycling.			0.795
Involved in tourism activities can enhance personal productivity.			0.709
Involved in tourism activities will improve the individual's happiness.			0.737
Involved in tourism activities on the personal health benefits.			0.711
It is often when the travel involved in the development of friendship.			0.745
Reliability ( )	0.938	0.928	0.930
Attitude the overall reliability		0.965	
Eigenvalue	7.826	6.480	4.837
Explained variance (%)	25.246	20.904	15.602
Total explained variance (%)		61.752	
KMO (Kaiser-Meyer-Olkin)		0.935	
Bartlett spherical test		4494.482	

1. Factor dimension 1: Labeled as ‘Revisit intention’, this dimension is comprised of four items. The Cronbach's of 0.817. The re-participation of the physically disabled in group travels with higher consumption and better services.
2. Factor dimension 2: Labeled as ‘Recommended intent’,

this dimension is comprised of five items. The Cronbach's of 0.893. The likelihood of the physically disabled to recommend to others, continue to travel and promote the advantages of group travel.

For the questionnaire used for this study and its constraints (Table 4), its Cronbach's coefficient is greater than 0.6, illustrating the relatively high level of consistency and homogeneity of the contents of this questionnaire.

Canonical correlation analysis

Analysis on travel constraints towards behavior intention

This study employs the canonical correlation analysis to examine its results (Table 5). The canonical correlation coefficients of the two factors have both reached the standard level. The first canonical correlation coefficient is $_1^2$ = 0. 442. The second canonical correlation coefficient is $_2^2$ = 0.040. From the result showing the first canonical factor ($_1$) of travel constraint, it is indicated that the first canonical factor ($_1$) of travel behavior intention accounted for 44.2% of the total variance. With the second canonical factor ($_2$) of travel constraint, it is indicated that the second canonical factor ($_2$) of travel behavior intention accounted for 4% of the total variance. The summation of the two canonical factors ($_1$, $_2$) of travel constraints is explained as the total variance of 44.2% being accounted for by the two canonical factors ($_1$, $_2$) of travel behavior intention. The results of this study show that there exists an overall close correlation between travel constraints and travel behavior intention, supporting the H1 to be true.

Analysis on attitude towards behavior intention

This study employs the canonical correlation analysis to examine its results (Table 6). The canonical correlation coefficients of the factors have reached the standard level. The canonical correlation coefficient is ^{2} = 0.627%. From the result showing the canonical factor ($_1$) of attitude, it is indicated that the canonical factor ($_1$) of travel behavior intention accounted for 62.7% of the total variance. The results of this study show that there exists an overall close correlation between attitude and travel behavior intention, supporting the H2 to be true.

Analysis on self-perceived health towards behavior intention

This study employs the canonical correlation analysis to examine its results (Table 7). The canonical correlation coefficients of the factors have reached the standard level. The canonical correlation coefficient is ^{2} = 0.067. From the result showing the canonical factor ($_1$) of self-perceived, it is indicated that the canonical factor ($_1$) of travel behavior intention accounted for 6.7% of the total variance. The results of this study show that there exists an overall close correlation between Self- perceived and travel behavior intention, supporting the H3 to be true.

Analysis on travel constraints towards behavior

This study employs the canonical correlation analysis to examine its results (Table 8). The canonical correlation coefficients of the factors have reached the standard level. The canonical correlation coefficient is ^{2} = 0.074. From the result showing the canonical factor ($_1$) of travel constraints, it is indicated that the canonical factor ($_1$) of travel behavior accounted for 7.4% of the total variance. The results of this study show that there exists an overall close correlation between travel constraints and travel behavior, supporting the H4 to be true.

Analysis on attitude towards behavior

This study employs the canonical correlation analysis to examine its results (Table 9). The canonical correlation coefficients of the factors have reached the standard level. The canonical correlation coefficient is ^{2} = 0.097. From the result showing the canonical factor ($_1$) of attitude, it is indicated that the canonical factor ($_1$) of travel behavior accounted for 9.7% of the total variance. The results of this study show that there exists an overall close correlation between attitude and travel behavior, supporting the H5 to be true.

Analysis on self-perceived health towards behavior

This study employs the canonical correlation analysis to examine its results (Table 10). The canonical correlation coefficients of the factors have reached the standard level. The canonical correlation coefficient is ^{2} = 0.091. From the result showing the canonical factor ($_1$) of self-perceived, it is indicated that the canonical factor ($_1$) of travel behavior accounted for 9.1% of the total variance. The results of this study show that there exists an overall close correlation between self -perceived and travel behavior, supporting the H6 to be true.

Analysis on behavior intention towards behavior

This study employs the canonical correlation analysis to

Table 4. Factor analysis of behavioral intention.

Factor question	Revisit intention	Recommended intent
Even though the fee hike, you will continue to participate in tourism activities.	0.814	
Even though tourism spending more activities for a long time, you will continue to participate.	0.830	
You would not make a reduction in the number of tourism activities.	0.685	
Activities services even if there are better than the tourist activities, you will not choose other activities.	0.680	
You will take the initiative to tell the others about the advantages of tourism activities.		0.765
If someone you recommend events that you would recommend tourism.		0.882
Your friends and relatives are encouraged to participate in tourism activities.		0.868
You will participate in the activities of tourism activities as a first choice.		0.681
You later will continue to participate in tourism activities.		0.644
Reliability	0.817	0.893
Behavioral Intention, the overall reliability	0.902	
Eigenvalue	3.304	2.885
Explained variance %	36.710	32.053
Total explained variance %	68.764	
KMO Kaiser-Meyer-Olkin	0.887	
Bartlett spherical test	965.348	

Table 5. Analysis on travel constraints towards behavior intention.

	Travel constraints			Behavior intention	
	1	2		1	2
Individuals constraints	0.767*	0.282	Revisit intention	0.783*	-0.622*
Interpersonal constraints	0.660*	-0.723*	Recommended intent	0.987*	0.163
Structural constraints	0.933*	0.233			
Variance extracted	0.793	0.207	Variance extracted	0.631	0.219
Redundancy	0.351	0.008	Redundancy	0.279	0.009
			2	0.442	0.040

Table 6. Analysis on attitude towards behavior intention.

	Attitude		Behavior intention
	1		1
Cognitive	0.824*	Revisit intention	0.868*
Affection	0.866*	Recommended intent	0.951*
Behavioral	0.969*		
Variance extracted	0.829	Variance extracted	0.789
Redundancy	0.520	Redundancy	0.495
		2	0.627

examine its results (Table 11). The canonical correlation coefficients of the two factors have both reached the standard level. The first canonical correlation coefficient is $_1^2$ = 0. 104. The second canonical correlation coefficient is $_2^2$ = 0. 032. From the result showing the first canonical factor ($_1$) of Behavior Intention, it is indicated

Table 7. Analysis on self-perceived health towards behavior intention.

	Self-perceived health		Behavior intention
	$_1$		$_1$
Self-perceived health	1.000*	Revisit intention	0.922*
		Recommended intent	0.331*
Variance extracted	0.480	Variance extracted	1.000
Redundancy	0.032	Redundancy	0.068
		$_2$	0.067

Table 8. Analysis on travel constraints towards behavior.

	Travel constraints		Behavior
	$_1$		$_1$
Individuals constraints	0.771*	Days	0.091*
Interpersonal constraints	0.548*	Expenditures	0.451*
Structural constraints	0.967*	Frequency	0.923*
Variance extracted	0.355	Variance extracted	0.610
Redundancy	0.026	Redundancy	0.045
		$_2$	0.074

Table 9. Analysis on attitude towards behavior.

	Attitude		Behavior
	$_1$		$_1$
Cognitive	0.783*	Days	0.364*
Affection	0.969*	Expenditures	0.461*
Behavioral	0.905*	Frequency	0.962*
Variance extracted	0.426	Variance extracted	0.791
Redundancy	0.041	Redundancy	0.077
		$_2$	0.097

Table 10. Analysis on self-perceived health towards behavior.

	Self-perceived		Behavior
	$_1$		$_1$
Self-Perceived Health	1.000*	Days	0.904*
		Expenditures	0.206
		Frequency	0.611*
Variance Extracted	0.411	Variance Extracted	1.000
Redundancy	0.038	Redundancy	0.091
		$_2$	0.091

that the first canonical factor ($_1$) of travel behavior accounted for 10.4% of the total variance. With the second canonical factor ($_2$) of behavior intention, it indicated that the second canonica factor ($_2$) of travel

Table 11. Analysis on behavior intention towards behavior.

	Behavior intention			Behavior	
	1	2		1	2
Revisit intention	0.999*	-0.032	Days	0.487*	-0.116
Recommended intent	0.695*	0.719*	Expenditures	0.782*	-0.618
			Frequency	0.764*	0.645*
Variance extracted	0.477	0.270	Variance extracted	0.741	0.259
Redundancy	0.050	0.009	Redundancy	0.078	0.008
			2	0.104	0.032

behavior accounted for 3.2% of the total variance. The summation of the two canonical factors ($_1$, $_2$) of behavior intention is explained as the total variance of 10.4% being accounted for by the two canonical factors ($_1$, $_2$) of travel behavior. The results of this study show that there exists an overall close correlation between behavior intention and travel behavior, supporting the H7 to be true.

Path analysis

This study utilizes the regression analysis method to examine constraint, attitude, self-perceived health and behavior intention (Figure 2). The path analysis is performed to further examine the impact effects among the various variables.

1. Behavior Intention: Attitude towards behavior intention indirect effect is 0.641. Travel constraint towards behavior intention direct effect is 0.183, without an indirect effect, the direct effect serves as the total effect.
2. Behavior: Attitude does not have a direct effect on behavior. Its indirect effect is 0.155 which serves as the total effect. Constraint does not have a direct effect on behavior. Its indirect effect is 0.044, which also serves as the total effect. The direct effect of self-perceived health towards behavior measures 0.190, without an indirect effect. This direct effect serves as the total effect. The direct effect of behavior intention towards behavior is 0.242. Without any indirect effects, the direct effect serves as the total effect.

DISCUSSION

With the physically disabled as its example, this study investigates their travel constraints and self-perceived health as it affects their travel attitude, behavior intention and travel behavior. It also observes the relationship of latent variables within the model and the degree of impact of these variables towards the behavior intention of travel participation. This is to further understand the behavior factors influencing the travel participation of the physically disabled. Results of this study can also serve as a way for airlines, the hotel industry, and travel agencies to assess and plan travel activities appropriate for the physically disabled.

The results of this study show that among the factors influencing behavior intention of the physically disabled, travel attitude and travel constraints have a significant influence. Between the two, travel attitude is greater than travel constraints. Their likes and dislikes on traveling is determined by their travel attitude. In other words, as their travel attitude grows, their behavior intention towards travel also grows. With the relationship between travel attitude and behavior intention, emotional attitude and behavior attitude have a stronger relationship towards recommending to others. Further analysis shows that when the physically disabled enjoy traveling and are willing to invest time in traveling, they will research and plan to increase their travel knowledge. They will encourage and recommend to their friends the advantages of traveling. Lastly, we can observe that from the relationship between travel constraints and behavior intention, structural constraints have a stronger, significant relationship with offering recommendations to others. In other words, when the physically disabled have enough time and money, they are more willing to recommend relatives and friends to travel.

Results from this study prove that travel attitude, travel constraints, behavior intention, and self-perceived health have a significant influence on each other. Within these four factors, behavior intention has the greatest impact followed by self-perceived health. The participation of the physically disabled in travel activities is mainly determined by the degree of their intention to participate. In other words, when the willingness to participate is high, their behavior towards travel participation is also high. Secondly, both re-participation and the offering of travel recommendations to others have a stronger, significant relationship with travel expenditures and frequency. In other

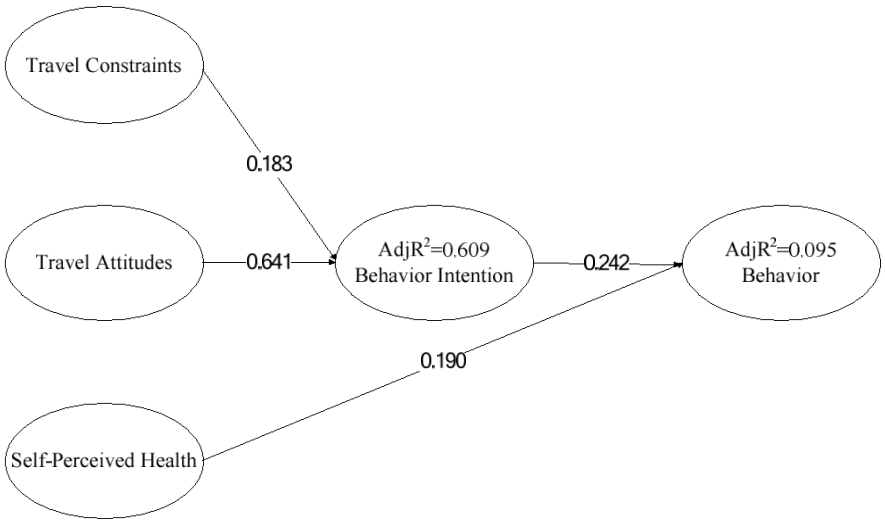

Figure 2. Path analysis.

other words, as the intention to re-participate in travel activities becomes higher, the physically disabled will increase their travel expenditures. Thirdly, self-perceived health has a stronger, significant relationship with the number of days and frequency of travel. In other words, if one's health is better when compared to the previous year, travel behavior will significantly rise. If the physical pains are milder, the number of days and frequency of travel will also rise. In other words, good health conditions of the physically disabled lead to an increase in the number of days and frequency of travel.

The intentions of the physically disabled to participate in travel activities significantly influences a higher consumption and better services in travel. They themselves will recommend to others, continue traveling, and promote the advantages of group travel. In other words, when the intention to participate is high, actual expenditures and frequencies of their travel evidently rise. Apart from this, milder levels of physical pain lead to an increase in the number of days and frequency of travel.

CONCLUSION

Based on the findings of this study, the main reason for improving the behavior intention of the physically disabled is through their travel attitude. Thus, this study gives the following recommendations to travel providers: First, enhancing the construction of disability- free facilities. For example, specialized buttons can be installed in hotel elevators to accommodate the physically disabled. Governments can also create more disability-free spaces. Lessening the environmental constraints met by the physically disabled during their travel can raise their intention and behavior towards participating in travel activities.

Second, reaching out to the physically disabled. Since they tend to be introverted, shy and lacking in self-confidence, travel providers are advised to go to the various organizations catering for the needs of the physically disabled and arrange for travel orientation sessions and health assessments. This is to allow the physically disabled to know whether with their current health condition, they are able to participate in travel activities. Furthermore, they can understand that in participating in these activities, their physical and mental health can actually improve.

Third, encouraging friends and relatives of the physically disabled to join them. The self-concept of the physically disabled is lower than that of normal people. If their friends and relatives are able to be with them, whether in body or in spirit, this will urge them to be more willing to participate in travel activities.

Fourth, establishing a membership system and channels of communication. Through this system, travel providers can be aware of each individual's disability and needs. Through various channels such as a service center or website, both the physically disabled and the travel providers can engage in two-way communication. This approach can lessen the unfamiliarity between them and can further allow travel providers to know more of the travel needs and constraints of the physically disabled.

Lastly, developing customized travel itineraries and services. Since the physiological and psychological health and constraints of the physically disabled are different, there is a need for customized travel itineraries and

services. For example, various travel itineraries can be arranged based on the areas and levels of disability. A disabled person will take longer than a normal person to cover the same travel distance. With this in mind, more single trips should be planned to allow for a relaxed travel experience. This requires the assistance and services of volunteers, friends and family.

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