

# ACADEMY OF SPINAL CORD INJURY PROFESSIONALS

## Needs for Support as a Motivational Factor for Travelers with Spinal Cord Injury

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### BACKGROUND AND PURPOSE

Travel activities has been widely regarded as a well-being and health pursuit for People with spinal cord injury (PwSCI), through extended support networks and personal development (Chen & Petrick, 2013), an essential activity for participation and full inclusion in society, and also a key indicator of successful rehabilitation (Cole et al., 2022). Travel activity is therefore a means of stimulating the pleasure of discovery and conviviality, fulfilling desires, needs and expectations (Moura et al., 2022).

Despite all the benefits, many PwSCI forego travel opportunities due to travel constraints such as facility/service inaccessibility (McKercher & Chen, 2015), as well as interpersonal, structural, attitudinal and organizational/institutional barriers. Moreover, traveling for PwD requires not only overcoming barriers during the trips, but also arranging travel companionship, family or professional support (Cole, Svetina, et al., 2019). Therefore, travel pursuit among PwSCI, which is a goal pursuit behavior with difficulties attached that also provides self-development benefits, should be effectively facilitated by fostering self-determined motivations.

#### Research Questions:

- What are the key motivational factors when PwSCI considers traveling?
- How should the needs satisfaction of autonomy, competence and relatedness be measured from the perspectives of PwSCI?
- How do support needs of PwSCI associated with self-determination factors of autonomy, competence, and relatedness? And what is the influence mechanism of these factors on travel motivation?

### LITERATURE REVIEW

#### Travel Motivations of People with Spinal Cord Injury

Travel motivations have been studied through various research studies. However, it appears that specific research on the topic of disability is still limited and tourists with disabilities represent a scarcely studied group in the literature (Moura et al., 2022). In general, studies are always focused on the results of tourists with disabilities' involvement in travel activities, not what drives them to travel.

Studies further suggest that people do not experience objective environmental inhibitors (i.e., a lack of time/ budget/service accessibility) unless their psychological inhibitors (i.e., hesitation or fear of failures) are resolved (Crawford & Godbey, 1987). Lee et al. (2012) further added that sometimes, PwSCI may perceive travel failures as inevitable, which leads to the absence of motivation to engage in future travel activities. In such cases, even improving the objective travel settings may fail to recover their travel interests (Zhang et al., 2017). Self-determination facilitation is thereby proposed to motivate PwSCI's travel pursuits and persistence despite objective constraints (Zhang et al., 2017). To encourage travel pursuit among PwSCI despite the challenges travel poses, it is necessary to explore how innate psychological needs facilitate travel motivations.

#### Support Needs of People with Spinal Cord Injury

The role of support needs is often ignored by scholars when talking about Self-Determination Theory (SDT) since most research focused on the perception or the satisfaction of competence, relatedness, and autonomy, which is especially true when it comes to studies of PwD. Inspired by Thompson et al. (2009), support needs, as we use it and position it within our understanding of mobility disability, is a construct referring to the pattern and intensity of support a person requires/lack to participate in activities associated with normative human functioning.

### HYPOTHESES

#### Hypotheses :

- H1: Perceived competence is significantly related to travel motivation of PwSCI.
- H2: Perceived relatedness is significantly related to travel motivation of PwSCI.
- H3: Perceived autonomy is significantly related to travel motivation of PwSCI.
- H4: For PwSCI, the support needs are significantly related to perceived competence.
- H5: For PwSCI, the support needs are significantly related to perceived relatedness.
- H6: For PwSCI, the support needs are significantly related to perceived autonomy.

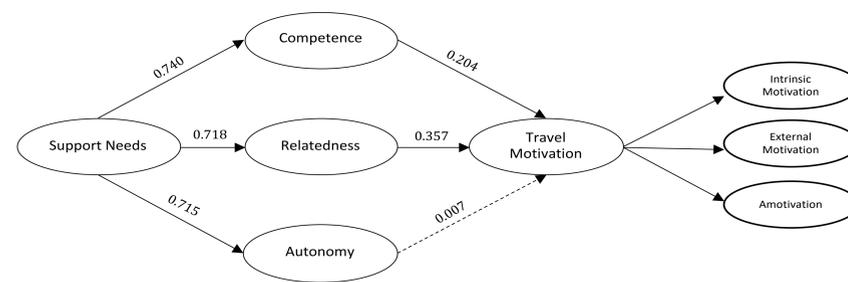


Figure 2. The Hypotheses Model

### CONCLUSION AND DISCUSSION

Firstly, for travelers with SCI, perceived support is significantly associated with competence.

1. PwSCI views participation in travel activities as a means of affirming competence, at the same time, they rely a focus on ability rather than disability.
2. If traveling with other PwSCI, the supportive behaviors can generate travel strategies, health, and medical knowledge, and living skills.
3. Travel activities are also an important source of self-esteem, and provide opportunities to gain feelings of self-efficacy. Therefore,
4. Interaction with supportive others during travel activities, PwD perceived a borrowed identity, guidance and direction, compensation for those areas in which he is incompetent, and most important of all, acceptance, approval, and affirmation of worth, through which may further improve the perception of competence.

Secondly, the results also confirmed the significant relationship between perceived support and relatedness of PwSCI.

1. Comparatively, the carry out of activities and travel patterns of PwSCI needs more support from others due to physical conditions, medical psychology studies show that adult needs for support are characterized by the need to stay close to others (Birtchnell, 1988), hence travel with a supportive companion will naturally enhance the relationship.
2. This study also reveals that supportive others often refer to family companions, caregivers, assistants, as well as supportive strangers.
3. Moreover, perceived support during travel activities can also help PwSCI to be physically and psychologically prepared to engage in social activities after injury (Dawu et al., 2019), and further benefits them socially by allowing them to feel less isolated, enjoying access to resources, and improving social skills and relationships.

Thirdly, for PwSCI, the perceived support is found to be significantly associated with autonomy.

1. Professionals tend to define independence as 'doing things for yourself' (French & Swain, 2013), whereas PwD define it as having control of your life.
2. Autonomy is not necessarily about what you can do for yourself, but rather about what others can do for you, in ways that you want it done (Ryan & Holman, 1998). Therefore, the support needs of PwSCI can be associated with autonomy by asking for and accepting help to make challenges out of barriers, planning, and organizing, and dealing with reactions from others.
3. Away from the companion for a short time period during travel may make independent functioning a personal challenge in the scope of safety. For example, reaching one's limitation, and if successful, can enhance the perceived autonomy of PwSCI.
4. Strategies for autonomy include keeping oneself informed, setting personal goals, and being assertive, traveling with supportive companions is very helpful to reach these goals.

Finally, contrary to SDT, no significant relationship between PwSCI's autonomy perception and travel motivation was found.

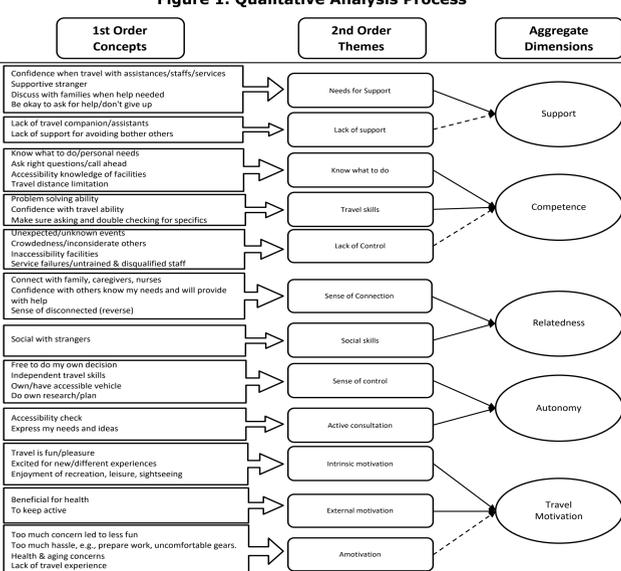
1. Travel as a complex activity with unexpected events, and the uncertainty of accessibility services at the destination may further improve the perception of dependence while decreasing the perception of autonomy, which makes it difficult to promote their travel motivation.
2. Furthermore, considering that physical disability represents a source of stress that involves lasting difficulties in managing social activities (Turner & Noh, 1988), it is strongly linked with feelings of loneliness and lack of self-determination (Rokach et al., 2006), which further lower their travel motivation.
3. This study also found that the stress associated with PwSCI not wanting to bother others with their special needs, or feeling embarrassed/awkward when meeting new people, poses a significant amotivation for travel.
4. The meeting of social needs combined with pessimism about tourist activities for PwSCI thus forms a "paradox psychology" – a counter-intuitive attitude related to treatment resistance. Also, the interaction with professional organizations such as travel activities organized by supportive groups can be beneficial in promoting social integration as well as rehabilitation for PwSCI, as noted by study participants:

### METHODOLOGY

#### Interviews & Second Order Qualitative Analysis

1. **QUALITATIVE DATA COLLECTION.** Under the topic of travel participation of people with SCI, 39 interviews were conducted between May and August 2020.
2. **Second Order Qualitative Analysis.** This study adopted a second order qualitative analysis process proposed by Gioia et al. (2013). Each quote was manually coded to social integration related codes/themes to better-understand the context it emerged from. In total, 12 themes, 36 codes were generated from 1635 quotations, these steps used as a bridge between coding and the aggregation dimensions.

Figure 1. Qualitative Analysis Process



#### Scale Development

1. **SCALE DEVELOPMENT.** The scale development process follows the rigorous process suggested by (DeVellis & Thorpe, 2021), and the final scale used to collect quantitative data is provided in Table 1.
2. **RELIABILITY AND VALIDITY TEST.** CFA results show the measurement model has adequate reliability and validity. All CR values for the multi-item scales are more than the minimum criteria of 0.700. Considering evidences suggest AVE below 0.50 could be accepted if CR is above 0.70 (Fornell & Larcker, 1981), statistically indicating sufficient level of convergent validity (Hair et al., 2006).

Table 1. Descriptive statistics and covariance matrix of variables

Measured Variables and Measurements	Covariance	CR (0.534)	AVE (0.274)	Cronbach's α (0.509)	N	SD	Mean	Median		
<b>Support Needs</b>										
There is someone around to help me travel to places.	1.227				258	1.110	3.818	4		
I have someone to discuss my travel plans with if needed.	0.496	0.841			258	0.918	4.108	4		
It is difficult for me to find the help I need to travel long distances.	0.230	0.307	1.226		258	1.109	3.480	4		
I feel comfortable asking for help from strangers during travel.	0.176	0.169	0.109	1.193	258	1.094	3.550	4		
<b>Competence</b>										
When it comes to travel, I know what works and what doesn't work for me.	0.635				258	0.799	4.279	4		
I am aware of things/situations I don't have control over during travel.	0.116	0.752			258	0.869	4.085	4		
I know the right questions to ask for travel service personnel to meet my needs.	0.163	0.160	0.681		258	0.827	4.031	4		
(Reverse) I sometimes don't know what to do when travel services fail to meet my needs.	0.233	0.229	0.322	1.351	258	1.164	3.159	4		
I am quite experienced at traveling long distances.	0.174	0.170	0.239	0.342	1.294	258	1.139	3.721	4	
I am good at problem solving during travel.	0.201	0.197	0.277	0.396	0.294	258	0.760	4.147	4	
I make sure I voice my concerns when travel services fail to meet my needs.	0.099	0.097	0.136	0.194	0.167	258	0.906	4.062	4	
I know where to find helpful information for my trips.	0.174	0.171	0.240	0.343	0.255	0.145	0.909	258	0.955	3.748
<b>Autonomy</b>										
I feel free to decide for myself when and to where I want to travel.	1.240				258	1.116	3.876	4		
I feel I am in complete control while traveling regardless of whether the service/place is accessible to me.	0.524	1.213			258	1.103	2.903	3		
I feel free to choose what to do when I travel.	0.631	0.516	1.116		258	1.060	3.651	4		
I feel free to express my own ideas when making decisions about my travel.	0.269	0.229	0.265	0.401	258	0.635	4.158	4		
I generally feel I am in control of my own travel.	0.493	0.403	0.485	0.207	0.833	258	0.930	3.864	4	
I feel I can pretty much be myself when traveling.	0.470	0.384	0.463	0.197	0.361	0.998	258	0.999	3.853	4
<b>Relatedness</b>										
(Reverse) People I meet during travel often don't engage with me.	1.004				258	1.001	3.647	4		
I am happy to meet new people during travel.	0.282	0.590			258	0.769	4.205	4		
I feel connected to people with whom I travel.	0.284	0.231	0.701		258	0.839	4.012	4		
I feel respected by people I meet on a trip.	0.396	0.325	0.234	0.750	258	0.868	3.725	4		
I feel I can easily connect with the people I meet during travel.	0.365	0.296	0.299	0.416	0.653	258	0.889	3.853	4	
<b>Motivation</b>										
I feel excited about traveling.	0.988				258	0.996	4.109	4		
I enjoy traveling.	0.695	0.857			258	0.928	4.163	4		
I travel because it's fun.	0.619	0.629	0.760		258	0.874	4.205	4		
I find travel a pleasurable activity.	0.665	0.675	0.602	0.904	258	0.953	4.054	4		
I see the benefits of traveling.	0.664				258	0.816	4.213	4		
Traveling is a good way to keep active.	0.429	0.665			258	0.817	4.202	4		
It is worth making the effort to travel.	0.398	0.431	0.804		258	0.898	4.047	4		
Traveling is a useful way to stay healthy.	0.472	0.512	0.475	0.989	258	0.997	3.880	4		
(Reverse) I used to have good reasons for traveling, but now I question if I should continue.	1.363				258	1.168	3.624	4		
(Reverse) I am happy not to travel much anymore.	0.433	0.664			258	0.815	4.380	5		
(Reverse) I don't see the point in traveling.	0.546	0.479	1.008		258	1.004	3.911	4		
(Reverse) I am okay with not traveling because it's too much hassle.	0.628	0.559	0.694	1.184	258	1.090	3.654	4		
<b>Intrinsic Motivation</b>										
I enjoy traveling.	0.695	0.857			258	0.928	4.163	4		
I travel because it's fun.	0.619	0.629	0.760		258	0.874	4.205	4		
I find travel a pleasurable activity.	0.665	0.675	0.602	0.904	258	0.953	4.054	4		
<b>External Motivation</b>										
I see the benefits of traveling.	0.664				258	0.816	4.213	4		
Traveling is a good way to keep active.	0.429	0.665			258	0.817	4.202	4		
It is worth making the effort to travel.	0.398	0.431	0.804		258	0.898	4.047	4		
Traveling is a useful way to stay healthy.	0.472	0.512	0.475	0.989	258	0.997	3.880	4		
<b>Amotivation</b>										
(Reverse) I used to have good reasons for traveling, but now I question if I should continue.	1.363				258	1.168	3.624	4		
(Reverse) I am happy not to travel much anymore.	0.433	0.664			258	0.815	4.380	5		
(Reverse) I don't see the point in traveling.	0.546	0.479	1.008		258	1.004	3.911	4		
(Reverse) I am okay with not traveling because it's too much hassle.	0.628	0.559	0.694	1.184	258	1.090	3.654	4		

#### Questionnaires & SEM Analysis

1. **QUANTITATIVE DATA COLLECTION.** The data is collected from 3 facilities, Craig Hospital in Denver, Colorado, Shepherd Center, Atlanta, Georgia, and SCI community groups at Indiana State. A final data contains 258 samples and collected from Nov. 2021 to Jan. 2022.
2. **STRUCTURAL EQUATION MODELING.** This research conduct structural equation modeling (SEM) using R and Lavaan to examine the research purpose.

Table 2. Demographic

Variables	Frequency (Percent, %)	Variables	Frequency (Percent, %)
Age (y)	18-30y 16(6.2%) 31-40y 90(22.5%) 41-50y 42(16.3%) 51-60y 41(15.8%) > 60y 52(20.2%) Would rather not say 49 (19.0%)	Race	White, Caucasian 215(83.3%) Black, African American 17(6.6%) American Indian, Alaska Native 1(0.4%) Asian, Pacific Islander 10(3.9%) Other Race, Multiracial 14(5.4%) Total 258(100%)
Gender	Men 174(67.4%) Women 84(32.6%) Other, Unknown 0 (0.00%)	Marital Status	Living with Significant Other/Partner 23(8.9%) Not married 108(42.1%) Other or unknown 10(4%)
Family Household Income	<25000\$ 25000\$-49999\$ 50000\$-74999\$ ≥75000\$ Other or unknown 44(17.50%)	Level of Education	High school or GED or less 35(13.6%) Associate degree or bachelor's degree 113(43.8%) Graduate degree 55(21.3%) Other or unknown 55(21.3%)

Table 3. Model Test Results

Param.	LHS	OP	RHS	Est.	S.E.	z-value	P(> z )	Std.lv	Std.all
H1	Motivation	~	Competence	0.483	0.230	2.104	0.035	0.204	0.204
H2	Motivation	~	Relatedness	0.479	0.124	3.767	0.000	0.357	0.357
H3	Motivation	~	Autonomy	0.007	0.089	0.079	0.999	0.007	0.007
H4	Competence	~	Support Needs	1.163	0.477	2.438	0.015	0.740	0.740
H5	Relatedness	~	Support Needs	2.039	0.801	2.546	0.011	0.718	0.718
H6	Autonomy	~	Support Needs	2.666	1.035	2.576	0.010	0.715	0.715

Table 4. Summary of Model Fit

	$\chi^2$	df	p	RMSEA	CFI	TLI
Ideal	<=5	>	> .05	< .08	>	> .95
Measurement Models	Support Needs	1.003	1	1.003	0.316	0.004
	Competence	29.356	17	1.727	0.031	0.964
	Autonomy	8.899	7	1.271	0.260	0.932
	Relatedness	8.932	5	1.786	0.112	0.959
	Motivation	108.334	49	2.211	0.010	0.969
Structural Models		864.237	551	1.568	0.080	0.920

### IMPLICATIONS

The findings can help us with conquering structural and attitudinal barriers and provide some insights for improving the priority of accessible service design in practice. Further indicating the role of dependence in the conceptual model, research focusing on dependence perception will add new knowledge to the content of the SDT, and further help researchers and industry understand people sitting in wheelchairs more.