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Inner- versus Social-driven Travel Motivations among People with Mobility Challenges: Extending the Travel Motivation Interpretation with a New Horizon

Item Type	event;event
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Download date	2026-06-09 15:33:18
Link to Item	https://hdl.handle.net/20.500.14394/48974

Inner- versus Social-driven Travel Motivations among People with Mobility Challenges: Extending the Travel Motivation Interpretation with a New Horizon

Introduction

The decades of research on travel motivation have exploited what are the motivations to be satisfied through travel pursuits (i.e., travel for pleasure, learning, or social networking, etc.) (Hsu and Huang 2008; Pearce and Packer 2013). Yet there are limited explorations of the underlying forces driving those motivations (Gnoth 1997; Cohen, Prayag, and Moital 2014). Such explorations are in crucial demand as motivations driven by different sources (e.g., values, beliefs, and cultural differences) may exhibit varied strength (Jönsson and Devonish 2008; Li and Cai 2012). The stronger travel motivation is associated with individual persistence with travel pursuits despite challenges (e.g., scheduling difficulties, health issues), which allows an individual to receive the benefits from leisure travel (Kleiber 2013). This study hence introduces a promising new angle to differentiate travel motivations, by internal versus external forces underlying specific motivations, as grounded in Self-determination Theory (SDT). The proposed distinction is verified by examining the potential differences in travel facilitation process by the differentially driven motivations. The possibly varied mechanisms to cultivate the differentially driven motivations are also explored. These effect comparisons are conducted among people with mobility challenges (PwMC), a population allowing the test of SDT's reliable applicability in its less-typical but potentially beneficial application settings. It is beneficial as SDT motivational interventions are broadly recognized as effective in facilitating activity pursuits as challenging as leisure travel for PwMC (Abuhamdeh and Csikszentmihalyi 2012). It is also less-typical as leisure travel pursuit is generally perceived as less vital than other life priorities where SDT has been most applied, such as education (Raufelder et al. 2016) or exercise (Teixeira et al. 2012), which is particularly so for PwMC. To further validate the contextual consistency of findings, this study also explores the motivational effect and mechanism differences at moderate versus high travel challenge levels, manipulated with a quasi-experimental design.

Literature Review

Maslow's model and its extensions (e.g., Push-Pull model (Crompton 1979) and Seeking and Escaping model by Mannell and Iso-Ahola (1987)) are well-acknowledged as the foundation for travel motivation literature. However, their tourism applications primarily identify individual travel needs, with less emphases on how the needs are formed. Alternative theories such as Plog's Allocentrism/Psychocentrism Model (1974) and the positive psychology perspective of travel motivations (Filep 2012) have revealed the inner drivers of travel motivations (i.e., personality/life goals), yet external factors such as social/environmental influences should be equally important to shape travel motivation but less studied (Cohen, Prayag, and Moital 2014). Only a handful of studies explored the role of situational/environmental/social contextual factors in forming travel motivations (Gnoth and Matteucci 2014; Jeng and Fesenmaier 2002), while how inner needs interact with societal influences to jointly shape travel motivations is still in its infancy.

Moreover, social benefits from travel (e.g., social networking) cannot fully represent social influences on broader travel motivations. Many travel motivations, even appearing as irrelevant to social benefits, can still be driven by social forces and result in a different motivational effect than being driven by inner desire (Arai and Pedlar 2003; White and Thompson 2009). White and Thompson (2009) for instance found that people with autonomy orientation (inner-driven) enjoy wine learning for its own sake, while people with controlled orientation (external-driven) may also anticipate wine learning, but for more utilitarian value-money evaluations. A deeper understanding of travel motivational mechanisms should thus be obtained investigating an alternative travel motivation differentiation, individuals' inner values versus social environment as the underlying drive for travel motivations, which potentially lead to varied travel propensities and outcomes, regardless of the specific activities/values/destination attributes that motivate people.

As premised on the Self-determination Theory (SDT) (Deci and Ryan 2000), some travel motives are internally embedded or consonant with inner values (*self-determined motivations*), while other motives are externally imposed by social groups or society in large in the form of pressure/incentives (*controlled motivations*). Self-determined motivations are comprised of two sub-types: *intrinsic motivation*, which is the desire to act out of inner interest/values; and *identified motivation*, which motivates people to act for achieving certain socially defined/encouraged goals (e.g., health and social recognition) that are accordant with individual inner values and hence integrated into own identity. Controlled motivations also contain two sub-types: *extrinsic motivation*, a desire

to act in response to expectation/coercion/reward imposed by social environments, and *introjected motivation*, action driven by self-imposed pressure, as transferred from social pressure, for avoiding guilt or maintaining contingent self-esteem boosted by meeting social standards.

Non-tourism researchers have mostly found the superiority of self-determined to controlled motivations in facilitating activity pursuit intention (Calvo et al. 2010), effort persistence despite challenges (Gillet et al. 2017), and resilience given failures (Fletcher and Sarkar 2012). Several tourism studies also supported the superiority of self-determined motivations in facilitating travel engagement (Allan, Dowling, and Sanders 2011; Tang et al. 2014) and benefits (Choi, Lu, and Cai 2015; Cini, Kruger, and Ellis 2013). Yet limited theoretical implications have emerged regarding how these applications extend the current tourism motivation conceptualization. White and Thompson (2009) attempted to integrate SDT into the tourism motivation framework, yet treating SDT as an extension of Iso-Ahola's (1983) seeking-escaping model may not fully reveal its theoretical advancement potential, interpreting tourist motivations by their underlying inner versus social drives. Moreover, some inconsistency in the superioroity of self-determined motivations has also been observed in some non-tourism fields, that controlled motivations can also greatly foster activity pursuits (Edmunds, Ntoumanis, and Duda 2006) and generate positive emotions (Teixeira and Palmeira 2016), as well as the missing activity facilitation effectiveness by self-determined motivations (Fenner et al. 2013). The travel facilitation differences between differentially-driven motivations is thereby checked among PwMC and across challenge levels also:

H1: Despite travel challenge levels, self-determined travel motivations are superior to controlled motivations in facilitating PwMC's leisure travel pursuits in terms of travel preference (H1a), travel purchase intention (H1b) and intention for persistent effort investment (H1c).

Also, the mechanisms generating both self-determined and controlled travel-motivation types should be compared under different challenge levels, to help prioritize the cultivation of certain motivations types for more effective travel facilitation. According to SDT, the level of self-determination in individual motivation is determined by the satisfaction of three basic psychological needs: *autonomy* as need for freely making the travel choice out of interest, *competence* as the need for possessing or gaining capabilities in travel pursuits, and *relatedness* as the need for social support before and during a trip (Deci and Ryan 2000). It is broadly supported that autonomy is most central to facilitate self-determined motivations and inhibit motivations (Dahling and Lauricella 2016), followed by competence satisfaction as second most crucial factor which facilitates both self-determined and controlled motivations (Gourlan, Trouilloud, and Boiché 2016). Relatedness is related to extrinsic motivation, but also internalize extrinsic incentives/punishments, thus contributing to identified/introjected motivation (Niven and Markland 2016). Yet contextual variances in the relative importance and effects of psychological needs were also observed in some studies (Niven and Markland 2016; Raufelder et al. 2016). At a high challenge level the importance of competence may increase and that of autonomy occasionally decrease (Kosma 2014; Gourlan, Trouilloud, and Boiché 2016). The motivation cultivating mechanism differences between the two classes of travel motivations is hence examined cross challenge levels:

H2: Despite travel challenge levels, perceived autonomy satisfaction from taking a trip facilitates PwMC's self-determined travel motivations only.

H3: Despite travel challenge levels, perceived competence satisfaction from taking a trip facilitates PwMC's self-determined and controlled travel motivations.

H4: Despite travel challenge levels, perceived relatedness satisfaction from taking a trip facilitates PwMC's controlled travel motivations and identified travel.

Methodology

To evaluate the consistency of these relationships across contexts, an Extreme Groups Design was adopted, which creates a significant contrast between two sample groups in travel challenge levels. The strong between-group challenge-level contrast can maximize the challenge-level intervention effectiveness and statistical power (Preacher 2015). A challenging travel scenario (with low service accessibility) is assigned to a selected sample population with relatively lower physical functionalities and travel frequency, with the unchallenging travel scenario assigned to a sample group with higher physical functionalities and travel frequency. The possible alternative factors beyond challenge levels that can cause between-group differences are also controlled as covariates in the regressions.

The data was collected through Qualtrics surveys. A travel scenario is first presented as a resort package with satisfactory *value* attributes fitting the interest/goals of the general PwMC population, which allows the possibility for participants to become intrinsically motivated to join this trip. The package is also depicted with *feasibility* attributes (i.e., the facility/service accessibility), which are manipulated at high versus low challenge levels, corresponding to the extreme group assignments. Participants were then asked to rate their perceived psychological needs satisfaction from joining the trip, self-determined/controlled motivations in taking the trip, and travel preference and behavioral intentions, as well as the control variables for participants' individual differences. Fifteen experts evaluated and confirmed the survey design for clarity, appropriateness, and comprehensiveness prior to implementation.

The participants assigned to the *unchallenging* travel scenario include 80 mobility-aided adults recruited in summer 2014 among subscribers of a weekly newsletter reaching about 1,200 individuals with disabilities, and the group assigned to the *challenging* scenario involves 495 PwMC recruited from 9,000 randomly selected subscribers to New Mobility magazine all over the U.S.. The only between-group differences in demographics and travel behavioral measures are the weaker travel capabilities and lower travel frequencies for the challenging group than the unchallenging group, which coupled with the corresponding challenge-level scenario assignments, jointly lead to the between-group discrepancy in package challenge-level evaluation. The challenge-level manipulation success was confirmed with the independent-samples *t*-test results, indicating a significant difference in perceived package feasibility between the unchallenging (M = 4.41, SD = .54) and challenging (M = 2.27, SD = .99) groups ($t(195) = -27.2$, $p < .001$).

The scale measurements and the results from confirmatory factor analyses conducted using LISREL 8.7 are listed in Table 1. The measure of *perceived psychological needs satisfaction* is adapted with minor wording changes from the need-satisfaction scale (9 items) (Sheldon et al. 2001). Similarly, the measure of *self-determined and controlled travel motivations* are adapted from the 15-item Exercise Self-Regulation Questionnaire (SRQ-E) to the leisure travel context (Gagne, Ryan, and Bargmann 2003). Results found good fits of Needs and Motivations scales to the data, with factor loadings all significant ($p < .001$). The reliabilities for all items are satisfactory given the .7 cut-off criteria suggested by Nunnally and Bernstein (1978). The composite reliability levels range from .84 to .9, greater than the commonly accepted threshold of .7 (Hair et al. 1998). The AVE estimates for all constructs range from .6 to .73, higher than the threshold of .5 (Netemeyer, Bearden, and Sharma 2003). Moreover, the AVE for each construct is higher than its squared correlation coefficients with other constructs (ranging .53 to .67), which further establishes the discriminant validity.

Participants' package preferences, package purchase intentions, and expected persistent information-searching effort investment are then measured using five-point Likert scales. The *control variables* accounting for between-individual demographic and travel habitual/historical differences are primarily measured with single questions.

Results

With assumptions checked, the multivariate regressions of travel pursuit measures on four motivation types were conducted using the STATA 14.2 software program under challenging and unchallenging conditions, respectively, controlling for covariates having statistically significant correlations with the DV under both conditions. Given the SDT assumption that activity pursuits may be driven by a mix of both self-determined and controlled motivations (Deci and Ryan 2008), the regressions are conducted on all motivation types together. The resulted multicollinearity, although is not a direct statistical assumption of multiple regression (Osborne and Waters 2002), can cause difficulties to assess the actual independent effects of predictors (Nimon, Henson, and Gates 2010) and underestimate predictor statistical significance considering the potential inflation of standard errors (Kumari 2012). An additional mix of analytical information is accordingly introduced to accurately identify the unique contribution of each predictor (Henson 2002), including the assessment of squared structure coefficient r_s^2 and relative importance weights (*RIW*), which are proof to multicollinearity and supplement the regression weight β and Pearson r correlation in identifying and comparing the unique contribution of all motivation types (Kraha et al. 2012). The regression coefficients b and statistics (i.e. R^2) are not interpreted, as they are attenuated by the multicollinearity and cannot accurately depict the contribution of each motivation type.

The key findings are listed in Table 2-4. To summarize, at a moderate challenge level, intrinsic motivation is only dominating the effect on the abstractive travel preference, explaining the highest total (r_s^2) and unique variances (*RIW*) in the preference measure ($r_s^2 = 75\%$, RIW = .094), but not on the concrete behavioral intentions.

Extrinsic motivation however is crucial to predict both preference and behavioral intentions under unchallenging scenarios (Preference: $r_s^2 = 68\%$, *RIW* = .079; Purchase: $r_s^2 = 49\%$, *RIW* = .067; Effort: $r_s^2 = 82\%$, *RIW* = .124). With high-level travel challenges, however, self-determined motivations demonstrate dominant impacts on both preference and behavioral intention (e.g., Identified->Preference: $r_s^2 = 76\%$, *RIW* = .137). Hence H1a is fully supported, and H1b and H1c are conditionally accepted based on high-level challenges.

To investigate the mechanism differences in facilitating self-determined versus controlled motivations, a system of Seemingly Unrelated Regressions (SUR) was conducted with the feasible generalized least-squares estimator (Cameron and Trivedi 2010). The SUR provides more accurate estimates by accounting for related errors when estimating motivation cultivation mechanisms separately for the highly-correlated motivation types. With variables standardized, the differences between regression coefficients in models based on different motivation types are compared using bootstrapping analyses (Preacher and Hayes 2008), which generates a sample size of 5,000 and shows a 95 percent bias-corrected confidence interval. The detailed SUR results (Tables 5 and 6) show that the satisfaction of each psychological need can facilitate both self-determined and controlled travel motivations. Hence H2 and 4 are rejected, while H3 is accepted. The SUR results also found under the *unchallenging* context no significant autonomy/competence/relatedness facilitating differences between self-determined and controlled motivations, but significant differences by the satisfaction of all three needs given high-level challenges.

Conclusion and Discussion

This study proposes and empirically supports the extension of existing travel motivation conceptualizations, that of a motivation differentiation by their underlying driving forces (inner desire versus social environment). This approach reflects the reality that social influence affects a broader range of travel motivations that are seemingly irrelevant to social values, besides the motivations explicitly related to social influences such as tightening family bonds or social networking. While intrinsic value and social environment jointly form the specific travel motivations, the dominance of intrinsic value versus social influences is supported in this study as leading to varied travel attitudes and behavioral outcomes.

By validating the SDT mechanisms across challenge-varying contexts, the study supports the existing non-tourism SDT applications that, self-determined motivations are essential to facilitating challenging tasks (Standage, Duda, and Ntoumanis 2005). However, the predominantly accepted superiority of self-determined motivations is only supported at high travel-challenge levels, while self-determined motivations may not be necessary with unchallenging travel pursuits. Another interesting addition to classic SDT assumption is the unique merits of controlled motivations to travel facilitation. Also, the satisfaction of three psychological needs can only distinctively foster self-determined travel pursuits given high-level challenges.

In practices, customized travel facilitation strategies can be developed for PwMC based on the self-determined versus controlled motivational differentiation. For instance, as controlled motivations dominantly influence PwMC's concrete behavioral intentions given moderate challenges, the marketing campaigns targeting PwMC with average or above-average physical functionality should be most effective with embedded information about social benefits of the trip (i.e., family/caretakers and societal integration). The simultaneous support of autonomy (i.e., relates to individual chronical interest), competence (i.e., incorporating practical tutorial about challenge coping), and relatedness (i.e., highlighted bonding and mutual-support with PwMC peers) is expected to facilitate the challenge-proof self-determined travel pursuits.

Methodologically, newly emerging or less-adopted approaches in the tourism field (i.e., using a system of statistical indices to compare effects despite multicollinearity issues, or the SUR comparison of correlated effects) are employed for competitive accuracy and efficiency, and are recommended for future tourism studies when traditional approaches comparing correlated effects are non-applicable due to violated assumptions. The experimental manipulation of challenge levels also allows a relatively restrictive and definite observation of context-based SDT mechanism variation.

Some limitations of this study include the cautious finding generalizability to PwMC in other cultures and the relatively low response rate in challenging group (due to a proportion of the sampling pool as institutions). Future studies should also explore the rationale for the results deviation from the classic SDT assumption, that autonomy satisfaction also cultivates the controlled motivations while relatedness satisfaction also foster the self-determined motivations, perhaps related to the heavy reliance of PwMC on social support and hence varied conceptualization of autonomy and self-determination.

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Table 1. CFA Results for Psychological Needs and Motivations Scales

Factors/Items	Factor standard loadings	Error variances	CR	AVE
Perceived Psychological Needs Satisfaction				
Perceived Autonomy Satisfaction			.84	.63
(1) Through making this trip decision, I feel that my choice expresses my "true self."	.68	.47		
(2) I feel that I am free to plan this trip my own way.	.77	.36		
(3) This trip fulfills my true interests and values.	.84	.2		
Perceived Competence Satisfaction			.85	.65
(1) Taking this trip would make me feel that I can successfully complete difficult tasks.	.79	.37		
(2) The trip leads me to feel that I can take on and master hard challenges.	.85	.27		
(3) I feel very capable and effective in handling this trip.	.79	.43		
Self-determined Travel Motivations				
Intrinsic Travel Motivation			.87	.7
(1) This trip would be valuable for the pleasure I would feel when I	.86	.32		
(2) It is for the excitement I would feel in taking such a trip.	.81	.35		
(3) This trip would give me the pleasure of discovering my full	.86	.26		
Identified Travel Motivation			.89	.73
(1) Taking the trip could be a good practice to become more independent.	.86	.26		
(2) I can learn valuable things from taking this trip.	.83	.3		
(3) I think taking this trip can be a useful way to achieve an active lifestyle.	.87	.24		

Table 2

Regression Results and Parameter Comparison for Motivational Prediction of Travel Preference

Predictor	Travel Preference							
	Unchallenging Group				Challenging Group			
	r	β	r_s^2	RIW	r	β	r_s^2	RIW
Intrinsic Motivation	.57**	.32	.75	.094	.64**	.17	.72	.109
Identified Motivation	.48**	-.11	.53	.054	.66**	.24**	.76	.137
Introjected Motivation	.43**	-.09	.43	.033	.57**	.03	.57	.13
Extrinsic Motivation	.54**	.29	.68	.079	.53**	.02	.5	.11
Feasibility	.36**	.2	.29	.065	.66**	.41***	.77	.214
Resort Preference	.33**	.07	.25	.028	.14**	.03	.03	.051
Age	-.38**	-.23*	.34	.076	-.16**	.001	.04	.018
R^2	.43				.57			
F	7.59***				75.14***			
N	78				408			

* p < .05. ** p <= .01. *** p < .001

Table 3

Regression Results and Parameter Comparison for Motivational Prediction of Travel Purchase Intention

Predictor	Travel Purchase Intention							
	Unchallenging Group				Challenging Group			
	r	β	r_s^2	RIW	r	β	r_s^2	RIW
Intrinsic Motivation	.3**	-.43*	.25	.026	.6**	.01	.61	.083
Identified Motivation	.48**	.06	.33	.038	.6**	.05	.61	.081
Introjected Motivation	.4**	.01	.43	.035	.59**	.15**	.58	.084
Extrinsic Motivation	.43**	.56*	.49	.067	.55**	.11*	.52	.075
Feasibility	.33**	.21*	.3	.055	.7**	.37***	.83	.243
Resort Preference	.39**	.12	.41	.045	.2**	.06	.07	.017
Resort Experience	-.26*	-.14	.18	.04	.12*	.01	.02	.004
Travel Frequency	.45**	.19	.56	.065	.1*	.04	.02	.005
R^2	.37				.59			
F	5.13***				72.75***			
N	78				408			

* p < .05, ** p <= .01, *** p < .001

Table 4

Regression Results and Parameter Comparison for Motivational Prediction of Travel Effort Persistence

Predictor	Travel Effort Persistence							
	Unchallenging Group				Challenging Group			
	r	β	r_s^2	RIW	r	β	r_s^2	RIW
Intrinsic Motivation	.41**	-.44*	.45	.048	.31**	.12	.85	.029
Identified Motivation	.5**	.19	.67	.089	.31**	.15	.87	.029
Introjected Motivation	.46**	.11	.57	.069	.24**	-.08	.17	.012
Extrinsic Motivation	.55**	.64**	.82	.124	.28**	.1	.69	.023
Feasibility	.27*	.19	.19	.039	.24**	.09	.51	.02
R^2	.37				.11			
F	8.55***				10.32***			
N	78				408			

* p < .05, ** p <= .01, *** p < .001

Table 5

Seemingly Unrelated Regression of Motivation Facilitation by Psychological Need Satisfaction

Predictor	Intrinsic Mot		Identified Mot		Introjected Mot		Extrinsic Mot	
	Unchallenging Scenario ($N = 79$)							
	β (SE)	*95%CI*	*β (SE)*	*95%CI*	*β (SE)*	*95%CI*	*β (SE)*	*95%CI*
Autonomy	.71*** (.08)	.55, .86	.72*** (.08)	.57, .88	.58*** (.09)	.4, .76	.79*** (.07)	.65, .92
$\chi^2(79)$	78.68***		87.41***		40.31***		129.68***	
R^2	.5		.53		.34		.62	
Competence	.67*** (.08)	.51, .83	.63*** (.09)	.46, .8	.57*** (.09)	.39, .75	.7*** (.08)	.54, .86
$\chi^2(79)$	64.02***		52.77***		38.47***		76.72***	
R^2	.45		.4		.33		.49	
Relatedness	.77*** (.07)	.63, .91	.75*** (.07)	.6, .89	.63*** (.09)	.46, .8	.76*** (.07)	.61, .9
$\chi^2(79)$	117.04***		99.61***		52.66***		104.89***	
R^2	.6		.56		.4		.57	
	Challenging Scenario ($N = 408$)							
Autonomy	.71*** (.04)	.64, .78	.64*** (.04)	.57, .72	.54*** (.04)	.46, .62	.53*** (.04)	.44, .61
$\chi^2(408)$	406.88***		287.19***		169.42***		155.53***	
R^2	.5		.41		.29		.28	
Competence	.78*** (.03)	.72, .84	.76*** (.03)	.7, .83	.62*** (.04)	.55, .7	.6*** (.04)	.52, .68
$\chi^2(408)$	621.42***		574.83***		263.57***		232.02***	
R^2	.6		.58		.39		.36	
Relatedness	.7*** (.04)	.63, .76	.68*** (.04)	61, .75	.59*** (.04)	.51, .67	.59*** (.04)	.51, .67
$\chi^2(408)$	381.32***		348.7***		219.39***		214.13***	
R^2	.48		.46		.35		.34	

* p < .05, ** p <= .01, *** p < .001

Table 6

Bootstrapping of Facilitation Differences across Motivations by Psychological Need Satisfaction *(5,000 replications)*

Predictor	ITI Vs. IDN		ITI Vs. ITO		ITI Vs. EXT		IDN Vs. ITO		IDN Vs. EXT		ITO Vs. EXT	
	β_{diff} *(SE)*	*95% CI*	β_{diff} *(SE)*	*95% CI*	β_{diff} *(SE)*	*95% CI*	β_{diff} *(SE)*	*95% CI*	β_{diff} *(SE)*	*95% CI*	β_{diff} *(SE)*	*95% CI*
Unchallenging Scenario (*N = 79*)												
Autonomy	-.02 (.05)	-.11, .07	.13 (.08)	-.03, .28	-.08 (.05)	-.18, .01	.14 (.08)	-.02, .3	-.06 (.04)	-.15, .02	-.21** (.07)	-.35, -.07
Competence	.04 (.07)	-.09, .17	.1 (.1)	-.1, .29	-.03 (.06)	-.15, .09	.06 (.09)	-.12, .24	-.07 (.05)	-.17, .03	-.13 (.08)	-.28, .03
Relatedness	.03 (.07)	-.11, .16	.14 (.08)	-.02, .3	.02 (.06)	.1, .13	.11 (.08)	-.05, .28	-.01 (.05)	-.1, .09	-.12 (.07)	-.26, .02
Challenging Scenario (*N = 408*)												
Autonomy	.06** (.02)	.02, .11	.16*** (.03)	.1, .23	.18*** (.03)	11, .25	.1** (.03)	.03, .17	.12*** (.03)	.06, .18	.02 (.04)	-.05, .09
Competence	.01 (.02)	-.03, .05	.15*** (.03)	.09, .21	.17*** (.03)	.11, .24	.14*** (.03)	.07, .2	.16*** (.03)	.1, .23	.02 (.04)	-.05, .1
Relatedness	.02 (.02)	-.02, .06	.1** (.03)	.04, .17	.11** (.04)	.03, .18	.09** (.03)	.02, .15	.09** (.04)	.02, .16	.005 (.04)	-.07, .08

* p < .05, ** p <= .01, *** p < .001