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Social Ecology Moderates the Association between Self-Esteem and Happiness

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Social Ecology Moderates the Association between Self-Esteem and Happiness

Abstract

Previous research has found cross-cultural differences in the strength of the association between self-esteem and happiness. We propose that this difference can be explained by relational mobility, or the degree to which options exist in the given socio-ecological context for relationship formation and dissolution. In Study 1, we found that the association between self-esteem and happiness was stronger among American participants than among Japanese participants. As predicted, this cultural difference was explained by the difference in relational mobility. In Study 2, we found that the association between self-esteem and happiness was stronger among Japanese living in relationally mobile regions than among Japanese living in less mobile regions. In Study 3, we manipulated relational mobility and demonstrated that the thought of living in a relationally mobile society caused individuals to base their life satisfaction judgments on self-esteem. Overall, our research demonstrates the utility of examining cultural differences from a socio-ecological perspective.

Social Ecology Moderates the Association between Self-Esteem and Happiness

Is high self-esteem necessary for happiness? Many assume so (e.g. Taylor & Brown, 1988), and a number of empirical studies demonstrate that this is almost universally the case (Brown, 2010). However, growing evidence suggests that the magnitude of this effect may vary between people with different cultural backgrounds, with a stronger association between self-esteem and happiness for people in North American cultures than for those in East Asian cultures (Diener & Diener, 1995; Kwan, Bond, & Singelis, 1997; Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008). The goal of this article is to determine why this "cultural difference" exists, focusing on differences in the structure of social ecology as an explanation.

Cross-cultural differences in the association between self-esteem and happiness. Recent research has revealed that the determinants of happiness differ between the East and the West: self-esteem is a stronger determinant for North Americans, whereas the quality of interpersonal relationships is more strongly associated with happiness for East Asians (Diener & Diener, 1995; Kwan et al., 1997; Uchida et al., 2008). These differences have typically been explained by differences in self-construal (Markus & Kitayama, 1991). Because North Americans are independent and seek to confirm their positive internal attributes, their sense of well-being primarily depends upon how well they achieve this cultural task. In contrast, Asians are interdependent and seek to affirm their relationship with significant others; thus, their sense of well-being depends upon how well they achieve this relational cultural task (Uchida et al., 2008). Although there is no logical flaw in this explanation, it has one weakness: *tautology*. That is, self-esteem, or the perception of positive internal self-attributes, is a strong predictor of happiness in the culture of independence because the culture says that it is important to affirm

such attributes. Similarly, relational quality is important for happiness in the culture of

interdependence because the culture says that relationships with others are important. The

theoretical puzzle, however, is the source of the relative weight of self-value versus interpersonal

relationships, particularly as determinants of happiness. We attempt to answer this theoretical

question from a perspective that focuses on the difference in the structure of social ecology.

Socio-ecological approach. There has been a recent resurgence in psychological science

of interest in the effect of the ecological environment, particularly *social* ecology, on the

psychological processes and behaviors of the people who live in these environments (Nisbett &

Cohen, 1996; Oishi & Graham, 2010; Yamagishi, Hashimoto, & Schug, 2008). Humans

collectively create components of social ecology, such as economic, political, and educational

systems, as well as more intermediate structures such as small groups and interpersonal

relationships. This social ecology in turn creates selection pressures that shape behavioral

patterns and psychological tendencies of individual residents (Oishi & Graham, 2010).

One socio-ecological factor that has recently received extensive focus is the level of

interpersonal or intergroup *mobility* (Adams, 2005; Oishi, 2010; Yamagishi & Yamagishi, 1994).

In this article, we specifically focus on *relational mobility*, which is defined as the degree to

which there is an availability of options in a given society or social context regarding

interpersonal relationships, such as opportunities to acquire new, maintain current, and sever old

relationships (Schug, Yuki, Horikawa, & Takemura, 2009; Schug, Yuki, & Maddux, 2010; Yuki

et al., 2007). Although it is a relatively new theoretical construct in the psychological literature, a

variety of studies have indicated that relational mobility is lower in East Asian than in North

American societies (see Schug et al., 2009 for a review). Furthermore, relational mobility has

been found to mediate cross-cultural differences in self-enhancement (Falk, Heine, Yuki, &

Takemura, 2009), similarity between friends (Schug et al., 2009), self-disclosure (Schug et al., 2010), general trust (Yuki et al., 2007), the proneness to shame (Sznycer et al., 2012), and rewards for cooperators and punishment for defectors in social dilemmas (Wang & Leung, 2010).

Relational mobility and determinants of happiness

How does relational mobility affect the determinants of happiness? To understand this connection, it is useful to use the metaphor of the "interpersonal market," where individuals strive for success in acquiring more beneficial social relationships. As stated, there are a greater number of options for individuals to choose their own interaction partners in societies with high relational mobility. Such a society, however, is inherently *competitive* because everyone wants to associate with socially valued people, but these prized relationships and memberships are limited. It is impossible for valued people and groups to accept infinite number of relationships due to the limited resources (such as time, effort, money, and cognitive resources) required to maintain these relationships (Roberts, Dunbar, Pollet, & Kuppens, 2009). Therefore, to associate with desirable people, one must *be selected* by them as being more desirable than their competitors.

In such an open and competitive interpersonal marketplace, high self-esteem, or the perception that one has high "market value," should be strongly associated with happiness. According to the sociometer theory (Leary & Baumeister, 2000; Leary, Tambor, Terdal, & Downs, 1995), self-esteem is a subjective indicator of one's relational value; it decreases to alert a person when he or she is rejected by others, and it stimulates remedial behaviors. It should be noted, however, that this indicator is all-encompassing; it reflects successes and failures in the *totality* of one's social relations, not in a specific relationship (Leary & Baumeister, 2000). In other words, self-esteem is a subjective indicator of one's own "overall social market value" and thus is highly correlated with happiness in societies with high relational mobility, where

individuals compete with others in an open and free interpersonal marketplace.

In contrast, overall social market value is less significant for interpersonal success in societies with low relational mobility. People tend to create more committed and exclusive relationships and groups to reduce social uncertainty. Thus, it is difficult for anyone to acquire new, desirable relationships from broader society (Yamagishi, Jin, & Miller, 1998). Social success is not guaranteed even if one has high market value, which leads to a weaker association between its perception, or self-esteem, and happiness. What matters, then, is the quality of one's existing relationships, which are largely determined by luck. Thus, rather than self-esteem, the quality of current relationships should be more strongly associated with happiness in a relationally less mobile society than in a more mobile society. We tested these hypotheses in three studies that utilized diverse methods in addition to traditional cross-national comparisons.

Study 1: Cross-National Comparison

Previous studies have found that the magnitude of the association between self-esteem and happiness was stronger for North Americans than for East Asians (Kwan et al., 1997; Uchida et al., 2008). We first tested whether this difference could be explained by socio-ecological differences in relational mobility. Although it is often challenging to identify the underlying factors that produce cultural differences in psychological processes, mediation analysis is one way to demonstrate a link between observed cultural differences and the context variables that are theorized to contribute to these differences. If a significant mediation effect is identified, then it is empirically justified to claim that the specific cultural variable is linked to the differences observed (Matsumoto & Yoo, 2006). Previous studies have shown that the relational mobility scale successfully mediates cultural differences in self-enhancement (Falk et al., 2009), self-disclosure (Schug et al., 2010), similarity between friends (Schug et al., 2009), and general

trust (Yuki et al., 2007). In this study, we specifically tested whether the level of perceived

relational mobility in each participant's micro socio-ecological context, as assessed by the

relational mobility scale (Yuki et al., 2007), mediated cross-cultural differences in the magnitude

of the association between self-esteem and happiness.

Method

  Participants. Participants were 87 undergraduate students (44 females and 43 males)

from the University of Virginia and 93 undergraduate students (67 females, 25 males, 1

unknown) from Hirosaki University in Japan.

  Materials. The participants were asked to complete questionnaire packets that included

the self-esteem scale (Rosenberg, 1965), the emotional support scale (Hisada, Senda, &

Minoguchi, 1989), the satisfaction with life scale (Diener, Emmons, Larsen, & Griffin, 1985),

and a revised version of Yuki et al.'s (2007) relational mobility scale. The emotional support

scale was used as an index for the perceived quality of current relationships. The satisfaction

with life scale assessed participants' happiness.

  The relational mobility scale asks about participants' perceptions of relational mobility

for people in their immediate environment (school, workplace, neighborhood, etc.). It should be

noted that because relational mobility is an ecological factor, the scale does not assess

participants' perceptions of their own movement between relationships and groups or related

personality traits, such as extraversion. Instead, it measures the opportunities of *others in the*

participants' vicinity to meet strangers and to choose interactional partners and group

memberships as they like and, in reverse items, their level of confinement to their current

relationships and groups. Participants were asked to indicate their agreement with items such as

"They (i.e., people in my immediate society) have many chances to get to know other people"

and "They can choose who they interact with," using 6-point scales (from 1 - *strongly disagree* to

6 - *strongly agree*). To further ensure scale validity, we added three new items, primarily with

regard to the ease of moving between groups, to the 12-item original scale (Yuki et al., 2007).[i]

All scales were highly reliable (Cronbach's alpha: self-esteem: US: .95; Japan: .87; relational

quality: US: .93: Japan: .94: Japan; happiness: US: .84; Japan: .81; relational mobility: US: .93:

Japan: .76).

Results and Discussion

We first determined whether perceived relational mobility differed between Americans

and Japanese. As expected and replicating previous findings (Schug et al., 2009, 2010; Yuki et al.,

2007), the results showed higher relational mobility for Americans than for Japanese ($M = 4.41$,

$SD = 0.85$; $M = 3.78$, $SD = 0.50$, $t(138) = 6.02$, $p < .001$, $d = 0.92$).

We then conducted a multiple regression analysis to test whether, replicating previous

studies (Kwan et al., 1997; Uchida et al., 2008), predictors of happiness differed between

Americans and Japanese. As predicted, the results showed that the association between

self-esteem and happiness was stronger for Americans than for Japanese, whereas the association

between relational quality and happiness was stronger for Japanese than for Americans.

Moreover, these differences were significant (Table 1).

Finally, and most importantly, we tested whether relational mobility explained these

cross-national differences in predictors of happiness using a hierarchical multiple regression

analysis (Table 2). In Step 1, we performed a multiple regression analysis in which the

independent variables were self-esteem, relational quality, country (US = 0; Japan = 1), and the

interaction terms between self-esteem and country and between relational quality and country,

and happiness was the dependent variable. Mirroring the above results, the interaction effects

between self-esteem and country as well as between relational quality and country were significant. Next, we tested whether these cross-national differences could be explained by the differing levels of relational mobility. We added the main effect of relational mobility as well as interaction terms between self-esteem and relational mobility and between relational quality and relational mobility into the regression equation (Step 2). The results showed that the interaction effects between self-esteem and country and between relational quality and country ceased to be significant, and only the new interaction terms, including relational mobility, were significant. The indirect effect of the relational mobility x self-esteem interaction term for the original country x self-esteem interaction was $\beta = -.05$, and the mediation effect was significant: Sobel $z = -1.95$, $p = .05$. Additionally, the indirect effect of the relational mobility x relational quality interaction term for the original country x relational quality interaction was $\beta = .16$, and the mediation effect was significant: Sobel $z = 3.17$, $p = .002$. These results are consistent with the hypothesis that cross-national differences in the correlates of happiness (i.e., self-esteem vs. relational quality) are due to the difference in the levels of relational mobility between the two societies.

Study 2: Within-Nation Variation

After successfully explaining the cross-national difference in the predictors of happiness as a result of relational mobility, we tested within-nation regional variation in the predictors of happiness. Our theoretical model proposes that differences in the magnitude of association between self-esteem and happiness can be explained by the difference in the characteristics of individuals' socio-ecological environments. However, this finding should not be limited to comparisons between particular cultures, such as East Asia and North America. Indeed, studies have shown that differences in social ecology create variability in the psychological orientations

of people, even within a single country (Nisbett & Cohen, 1996; Oishi, 2010; Oishi, Miao, Koo, Kisling, & Ratliff, 2012; Oishi et al., 2007; Uskul, Kitayama, & Nisbett, 2008; Yamagishi, Hashimoto, Li, & Schug, 2012). In this study, we tested whether self-esteem was more strongly associated with happiness in more relationally mobile than in less relationally mobile regions in Japan using a nationally representative sample of Japanese adults (Naoi, 2004). Rather than using the self-report measure of relational mobility from the previous study, we adopted regional-average service years (i.e., the average number of years the participants in each of 11 regions had worked for their current employer, or average "job tenure," the term often used in labor economics) as an objective index of the relational mobility of the region. In other words, the length of the average service years within a region was used as an indicator of the stability of relationships (i.e., low relational mobility) in the area.

Method

Data source and variables. Secondary data analysis was conducted on a nationally representative sample of adults in Japan (Naoi, 2004). Two thousand adults between the ages of 20 and 79 were selected from all over Japan using a stratified two-stage random sampling method. Among those who responded ($N = 1,294$, response rate = 64.7%), only respondents who did not have missing values were subjected to the analyses (final $N = 1,286$: 685 females and 601 males). Self-esteem was assessed by asking about the participants' agreement with three items in Japanese: "I feel that I am a desirable person," "I feel that I am a person of worth, at least on an equal plane with others," and "I am able to do most things as well as others can." The items were assessed on 5-point scales ranging from 1: "Agree" to 5: "Disagree." The average of the reversed scores of these three items was used as an index of self-esteem (Cronbach's alpha ranged from .70 to .85 across 11 regions). Happiness was assessed by one item: "Please think about the

condition of your current life. On the whole, how much are you satisfied with your life?" This

items was assessed on a 11-point scale ranging from 0: "Dissatisfied" to 10: "Satisfied." The

average service years for which participants in a given region had worked in their current

workplaces was used as the index of (low) relational mobility of the region.

Results and Discussion

We first computed the unstandardized regression coefficient of self-esteem on happiness

within each of the 11 regions. Then, we tested whether the regression coefficients were larger in

more relationally mobile regions than in less mobile regions using weighted linear regression.[ii]

As predicted, the strength of the association between self-esteem and happiness was negatively

correlated with the average service years within a region, $\beta = -.60$, $p = .03$ (Figure 1). That is,

self-esteem predicted happiness more strongly in Japanese regions where people move to new

workplaces and change their social networks more often than in regions where people tend to

work in the same place with the same group of people.

Study 3: Experimental Study

The first two studies have shown that cross-national and cross-regional differences in

predictors of happiness can be explained by relational mobility. Because of the correlational

nature of these studies, however, the causal effect of relational mobility was not confirmed. Thus,

to establish a causal relationship between relational mobility and the degree of the association

between self-esteem and happiness, we conducted an experimental study using a situational

priming method (Bargh & Chartrand, 2000). We assumed that even Japanese people (who

generally live in social contexts with low relational mobility) had substantial experiences in

relationally mobile situations in the past, such as upon entering a new school. Thus, we would be

able to prime their previous psychological mindset by asking them to recall those situations.

Method

     Participants. Sixty-eight undergraduate students (19 females and 49 males) were randomly recruited from the participant pool at Hokkaido University.

     Procedure. We assessed participants' self-esteem a few months prior to the experiment, when they had registered for the participant pool, using an abbreviated four-item version of the Rosenberg self-esteem scale: "I feel that I have a number of good qualities," "I am able to do things as well as most other people," "I take a positive attitude toward myself," and "On the whole, I am satisfied with myself" ($\alpha = .82$).

     Upon arrival at the laboratory, participants in the high relational mobility condition were asked to recall and write down their experiences in the situation in which they last talked for more than 30 minutes to someone they had not previously met. In the low relational mobility condition, participants were asked to recall and write down the situation in which they last talked for more than 30 minutes to their family. Following the standard priming procedure (Bargh & Chartrand, 2000), we then asked the participants to work on simple mathematic calculations as a distraction task. Finally, we asked participants to complete the happiness scale used in Study 1 (Diener et al., 1985) ($\alpha = .75$). For the manipulation check, the participants also completed the relational mobility scale used in Study 1 ($\alpha = .77$).

Results and Discussion

     The experimental manipulation was successful: perceived relational mobility was marginally higher in the high relational mobility condition than in the low relational mobility condition ($M = 3.91$, $sd = .52$; $M = 3.69$, $sd = .54$, $t(66) = 1.76$, $p = .08$, $d = 0.42$).

     Next, we conducted multiple regression analyses to test whether high relational mobility priming led to a stronger association between self-esteem and happiness than low relational

mobility priming. The main effects of self-esteem and relational mobility manipulation and the interaction term between self-esteem and manipulation were entered as predictors in the regression equation. As predicted, the results showed that the interaction effect between self-esteem and relational mobility manipulation was marginally significant (see Table 3). Consistent with our hypothesis, simple slope analyses (Aiken & West, 1991) showed that self-esteem was positively associated with happiness in the high relational mobility condition ($b = .45$, $t (32) = 3.41$, $p = .002$), but there was no association between them in the low relational mobility condition ($b = .12$, $t (32) = 0.89$, $p = .38$) (Figure 2).

General Discussion

The three studies presented here offer a novel and parsimonious explanation for between- and within-culture variation in the predictors of happiness. In Study 1, we found that the cross-national differences in the predictors of happiness between Japan and the United States, in which self-esteem was a stronger predictor for Americans and relational quality was a stronger predictor for Japanese, were mediated by the relational mobility of participants' immediate social environments. The association between self-esteem and happiness was stronger for those who perceived society as more mobile, and the association between relational quality and happiness was stronger for those who perceived society as less relationally mobile. This finding was replicated in Study 2 using an objective indicator of relational mobility. Even within a single country (Japan), higher relational mobility, as assessed by the average service years within a region, was associated with a stronger correlation between self-esteem and happiness. Furthermore, Study 3 confirmed a causal relationship between relational mobility and predictors of happiness. By priming situations in which the level of relational mobility differed, we successfully changed the strength of the association between self-esteem and happiness. These

findings are consistent with our theory that self-esteem is associated with happiness in societies with high relational mobility because it is a subjective indicator of one's overall relational value (Leary & Baumeister, 2000). Relational value leads one to succeed in the social domain, particularly in free but competitive interpersonal marketplaces or societies and social contexts with high relational mobility.

One potential alternative account for the current finding, however, is that people living in a highly mobile society have no choice but rely on themselves because relationships are too fragile. This leads them to dissociate themselves from social relationships, and then base their happiness on self-esteem or assessment of oneself, independent of their interpersonal relationships. In this explanation, self-esteem does not necessarily reflect one's relational value, but solely indicate how good or satisfactory one is in an absolute manner. There is, however, one weakness to this explanation. Much cross-cultural evidence actually indicates that people in high relational mobility societies value interpersonal relationships to no less, or often even to a greater degree than those in low relational mobility societies (see Yuki & Schug, 2012, for a review). The real difference between the societies does not lie in the significance of, but in the nature of, interpersonal relationships, and behavioral strategies to maintain them in a good shape: in high relational mobility societies, relationships can be freely chosen but also easily broken, so that individuals must invest much effort and ability to keep attracting desirable others. In low relational mobility societies, on the contrary, relationships cannot be freely chosen but long-standing and stable; thus maintenance of relationships in harmony is rather of particular importance (Schug et al., 2010). Our theory is consistent with this view; possession of high overall self-value is critical for individual adaptation in the social context where relationship creation and maintenance with desirable others is of particular importance (i.e., high relational

mobility); and thus the level of self-esteem, a subjective indicator of such a value, is associated with the level of happiness.

There are two important implications of the current findings. The first implication is for the theory of self-esteem. Recent decades have produced several theories of self-esteem that incorporate its social nature (e.g., Greenberg, Solomon, & Pyszczynski, 1997). Among these theories, the sociometer theory (Leary et al., 1995) proposes that self-esteem is a subjective indicator of one's relational value; it goes down and alerts oneself when one is rejected by others, and initiates behaviors to recover social connections. The current results are consistent with the relatively neglected contention in the theory that this subjective indicator reflects successes and failures in the *totality* of one's social relations, not in a specific relationship (Leary & Baumeister, 2000). In other words, self-esteem is the perceived overall social value of the self, which, according to our theory, is a particularly useful predictor of success within an open and competitive interpersonal market.

The second implication is practical. Our findings suggest that whether enhanced self-esteem leads to positive consequences may depend on the level of relational mobility of a society. Policymakers who aim to increase people's happiness must carefully choose and adjust the most appropriate means for the existing social ecology. This can be accomplished by, for example, enhancing people's self-esteem in high relationally mobile environments, such as large cities, and ensuring harmonious interpersonal relationships in low relationally mobile environments, such as rural communities.

There are a couple of future directions. First, relational mobility is intertwined with other socio-ecological variables, such as residential mobility, population size, and density (Oishi & Graham, 2010). In this research, we investigated relational mobility because it is a more

proximal ecological factor than other related constructs. It is, however, critical to test whether

residential mobility, population size, density, and other related constructs will moderate the

association between self-esteem and happiness in the future. Second, Study 3 was the first

attempt to experimentally manipulate relational mobility. This manipulation focused on the

interaction with a stranger versus a family member. It is crucial to test whether priming other

aspects of relational mobility (e.g., opportunity to meet new people) will give rise to the same

results. More generally, it is desirable to discern distinct psychological mechanisms evoked by

various aspects of relational mobility and related constructs in the future.

Conclusion

The current findings provide support for the importance of examining cultural

differences from a socio-ecological perspective. Although this perspective had been largely

neglected in the literature of mainstream social psychology, recent research has seen an increased

focus on the impact of socio-ecological factors on behavioral and psychological tendencies

(Matsumoto, 2007; Nisbett & Cohen, 1996; Oishi, 2010; Uskul et al., 2008; Yamagishi et al.,

2008; Yamagishi & Yamagishi, 1994). Past research demonstrated the power of culturally shared

meaning systems in shaping cultural differences (e.g., Hofstede, 1980; Markus & Kitayama,

1991; Triandis, 1995). In contrast, we believe that novel insights can be obtained by examining

how the structure of social ecology that is exogenous to individuals can influence both individual

behavior and psychological functioning. By examining social behavior in terms of adaptive

strategies and ecologically valid decision making, socio-ecological approaches can help to

facilitate synergies with other disciplines in the natural and social sciences, such as biology and

economics, many of which view the behavior of humans and other species in terms of adaptation

to natural and social environments.

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Table 1. Cross-national differences in the predictors of happiness – Unstandardized multiple regression coefficients (Study 1)

Predictor	US		Japan		Difference	
	b	p	b	p	z	p
Self-esteem	.70	<.001	.45	<.001	-1.79	.07
Relational quality	.05	.70	.52	<.001	2.83	.004

Table 2. Mediating effects of relational mobility on cross-national differences in the associations between self-esteem and happiness and between relational quality and happiness – Hierarchical multiple regression analysis (Study 1)

	Step 1		Step 2	
	β	p	β	p
Self-esteem	.73	<.001	.69	<.001
Relational quality	.03	.73	.10	.33
Country (US = 0, Japan = 1)	.14	.04	.22	.002
Country X Self-esteem	-.15	.08	-.12	.20
Country X Relational Quality	.26	.007	.16	.15
Relational Mobility			.11	.07
Relational Mobility X Self-esteem			.17	.009
Relational Mobility X Relational Quality			-.22	<.001
R^2	.44	<.001	.49	<.001

*Note.* All numbers, except for R^2, are standardized regression coefficients.

Table 3. Effects of self-esteem, relational mobility priming manipulation, and the interaction between self-esteem and relational mobility priming on happiness – Multiple regressions (Study 3)

	β	p
Self-esteem	.54	.001
Relational mobility (High = 1, Low = 0)	.16	.16
Self-esteem x Relational mobility	-.28	.09
R^2	.19	<.001

Figure Captions

Figure 1. Association between self-esteem and happiness as a function of average service years (i.e., low relational mobility) within each region after weighting each observation with covariance between self-esteem and happiness (Study 2)

Figure 2. Associations between self-esteem and happiness after priming (a) high vs. (b) low relational mobility (RMob) (Study 3)

High RMob condition

Low RMob condtition
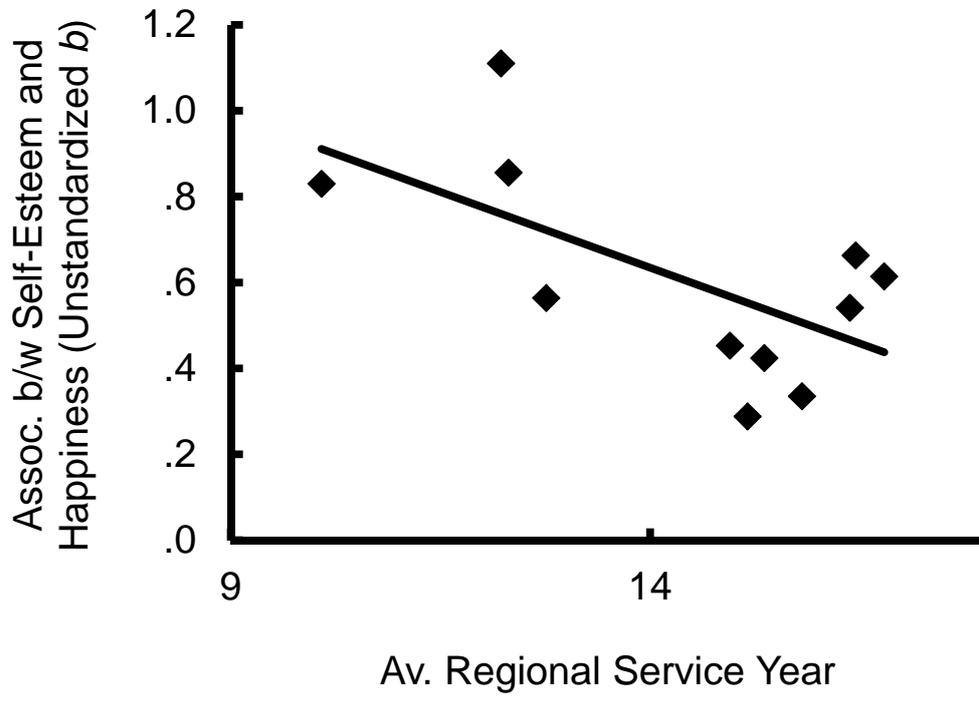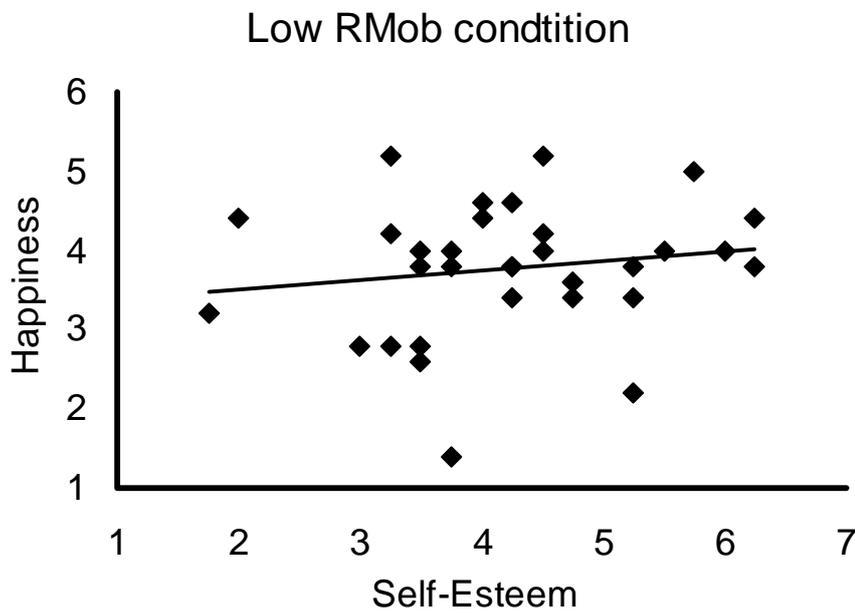
Footnotes

[i] The new items were "Even if they belonged to an inferior group, they would have no choice but to stay in that group," "Even if these people were not satisfied with their current relationships, they would often have no choice but to stay with them," and "They are generally willing to accept new members into their group of friends."

[ii] We conducted a regression analysis by weighting each observation by covariance, following Cote and Moskowitz (1998). We conducted these two-step analyses as opposed to a multilevel analysis because the data provider limited the types of analyses that a visitor could conduct on their website, and the original individual-level responses were not available.