The Relations Between Regulatory Modes, Personality Traits, Social Capital, and Mental Health & Well-Being

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Abstract: Why do the two self-regulatory modes of locomotion and assessment show opposite associations with mental health & well-being? To address this question, we examined whether social capital explains these links and whether regulatory modes and personality traits differentially predict mental health & well-being. Using data from the Young Adult Survey Switzerland (YASS; weighted N = 4,981), we tested mediation and moderation models including locomotion, assessment, extraversion, and neuroticism. Results showed that social capital partially explained why assessment was negatively and locomotion positively related to mental health & well-being, and that personality traits were overall stronger predictors than regulatory modes. Moreover, locomotion buffered the negative associations of assessment and neuroticism with social capital, though not with mental health & well-being itself. These findings advance our understanding of how dispositional and self-regulatory factors jointly shape social connectedness and mental health & well-being, and suggest that interventions fostering locomotion while sensitively addressing assessment tendencies may strengthen both social resources and mental health.

Keywords: *Adolescents, mental health, personality, self-regulation, social capital.*

Introduction

Research on self-regulation has primarily focused on childhood, while less is known about self-regulation in adolescents and young adults (Warschburger et al., 2023). Within this field, Regulatory Mode Theory (Higgins & Kruglanski, 1995), which investigates behavioral self-regulation, distinguishes between two orientations: *assessment* and *locomotion*. Assessment involves critically evaluating decisions, whereas locomotion refers to initiating action and moving toward goals. Although both modes are essential, prior studies suggest they are linked to opposite outcomes. Locomotion has been associated with positive affect and the personality trait of extraversion, while assessment has been related to anxiety, depression, and neuroticism (Amato et al., 2017; Higgins, 1987; Kruglanski et al., 2000; Sellin et al., 2003).

Given these opposite associations with mental health, an important question is *why* locomotion appears adaptive, whereas assessment tends to be detrimental for psychological well-being. One possible explanation lies in the role of social capital as a mediator. This is plausible for several reasons: (a) social capital itself is strongly correlated with positive mental health & well-being (Beyers et al., 2003; Caughy et al., 2003; Rose, 2000; Stevenson, 1998); (b) locomotion correlates positively with extraversion, which is linked to sociability and engagement, factors that are likely to foster higher levels of social capital and, in turn, better mental health; and (c) assessment correlates positively with neuroticism and is tied to anxiety and self-focus, which may undermine social capital and thereby reduce well-being (Amato et al., 2017; Higgins, 1987; Kruglanski et al., 2000; Sellin et al., 2003). Testing social capital as a mediator can therefore clarify the mechanisms by which regulatory modes influence mental health.

In addition, this study considers the personality traits of extraversion and neuroticism to determine the extent to which outcomes are attributable to regulatory modes versus stable personality dispositions. Since locomotion and extraversion

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share common features, as do assessment and neuroticism, including these traits allows us to evaluate whether regulatory modes uniquely predict social capital and mental health, or whether their effects are largely explained by personality.

We also examine whether locomotion, which tends to have effects opposite to assessment, can moderate the impact of assessment and neuroticism on social capital and mental health & well-being. This perspective highlights a potential compensatory role of locomotion in buffering the negative effects of assessment and neuroticism. To address this, moderation models are used to explore the relationships between assessment and neuroticism (as independent variables), social capital and mental health & well-being (as dependent variables), with locomotion acting as a moderator.

Taken together, this study aims to clarify the opposite associations of locomotion and assessment with mental health & well-being, test social capital as a potential mediator of these associations, and assess the relative contributions of personality traits and regulatory modes, with locomotion examined specifically as a moderator that may buffer negative outcomes. By doing so, it contributes to research by confirming the divergent roles of self-regulatory orientations, to theory by integrating personality and social capital into the conceptual framework, and to practice by identifying specific self-regulation competences that may be fostered, as well as personality-related vulnerabilities that may require targeted support to promote well-being.

Literature Review

Regulatory Mode Theory

Self-regulation can be understood from both typological and process-oriented perspectives (Sandmeier et al., 2020). In the process-oriented approach, self-regulation is categorized into two types: action-oriented and emotion-oriented. The action-oriented approach refers to behaviors that involve the conscious management of demands through cognitive, motivational, and volitional activities (Vancouver & Day, 2005). Higgins and Kruglanski's (1995) Regulatory Mode Theory divides behavioral self-regulation into two functions: assessment and locomotion. The evaluative function "assessment" refers to the process of reflecting on possible actions, comparing and evaluating them. The executive function "locomotion", on the other hand, represents the drive to take action and move toward goals.

Although both functions are crucial for successful self-regulation, research suggests that they are associated with opposite outcomes. Locomotion correlates with positive traits such as positive affect, self-confidence, optimism, extraversion, action orientation, focus control, performance, and mastery goal orientation, as well as intrinsic motivation. In contrast, assessment is linked to anxiety, neuroticism, fear of failure, and heightened self-attention, both public and private. It also correlates with extrinsic motivation, performance goal orientation, worry, and depression (Kruglanski et al., 2000; Sellin et al., 2003).

This presents a dilemma: while the assessment function is important for self-regulation, it can also lead to negative outcomes such as depression. Understanding the factors behind these effects and how they might be mitigated is crucial. Since locomotion correlates with many positive traits, there is reason to believe it may serve as a moderator, potentially reducing the likelihood that assessment will lead to negative outcomes, such as poor social capital or depression. The same will be tested for the personality traits of extraversion and neuroticism, since researchers investigating the regulatory modes often mentioned in their limitations that they should have tested for personality traits as well due to their close link to regulatory modes (e.g., Amato et al., 2017). In this study, we include all these variables in the regression models to determine whether the effects result more from personality traits or from regulatory modes themselves.

Mental Health & Well-Being

Sartorius (2003) defines mental health as "the state of balance that individuals establish within themselves and between themselves and their social and physical environment" (p. 101). According to Headey et al. (1993), mental health & well-being consist of dimensions such as life satisfaction, positive affect, anxiety, and depression. These dimensions are closely related, as high life satisfaction strongly correlates with low depression levels – meaning that someone experiencing depression is unlikely to feel satisfied with life simultaneously.

Adolescence is a critical period for mental health & well-being, as it is a time marked by new experiences and developmental challenges that require significant energy. These experiences can often be negative, leading to potential failures (Havighurst, 1948; Hurrelmann, 2012; Quenzel & Hurrelmann, 2022). Adolescence is also the time of identity formation, a key stage in psychosocial development according to Erikson (1973). Identity development is influenced by social networks, which serve as role models, and adolescents often experience identity diffusion as they navigate the process of defining who they are and achieving their anticipated target state.

In recent years, studies have shown an increase in psychosocial disorders among adolescents (e.g., Collishaw et al., 2004; Federal Statistical Office, 2022a). Certain groups, particularly women and individuals with a migration background, are at a higher risk of poor mental health (Federal Statistical Office, 2022a, 2022b).

Social Capital

Social capital can be understood in various ways, including "bonding" (social networks, shared norms and values) and "bridging" (access to public goods, participation, and a sense of belonging) (Almedom, 2005). According to Bourdieu's Capital Theory (1986, 2012), social capital involves both the quality and quantity of social relationships. Social capital plays a critical role during adolescence, a period of identity formation (Erikson, 1973). It serves as a comparative component in shaping identity, as well as a developmental task adolescents must navigate (Havighurst, 1948; Hurrelmann, 2012; Quenzel & Hurrelmann, 2022). During adolescence, mental health issues are common, and social support becomes essential. Bonding with peers, family, and community members provides a protective buffer during this challenging period.

Relations Between Self-Regulation, Social Capital, and Mental Health & Well-Being

Based on theoretical frameworks and empirical findings regarding the individual relationships between self-regulation, social capital, and mental health & well-being, all three appear to be interconnected. Drawing on Bronfenbrenner's (1981) Ecological Systems Theory, the mesosystem (e.g., social networks) can be seen as shaped by personal behavior—specifically, behavioral characteristics and competencies such as self-regulation—which, in turn, influence individual outcomes like mental health. This assumption is supported by various studies. For instance, the meta-analysis by Robson et al. (2020) demonstrated that self-regulation in early school years (age 8) is negatively related to depression in later school years (age 13). When considering the separate regulatory modes of locomotion and assessment—which have been linked to opposite outcomes such as positive affect in locomotion and negative affect, anxiety, and depression in assessment (Amato et al., 2017; Kruglanski et al., 2000; Sellin et al., 2003)—it seems plausible that they relate differently to both social capital and mental health & well-being.

Several studies have identified a relationship between social capital and mental health. This aligns with Ryff's (1995) six dimensions of psychological well-being, one of which is "positive relationships with other people" (p. 101). Sen (1993) also views well-being as functioning freely within society. Caughy et al. (2003) showed that a lack of maternal social capital is associated with mental health issues in children. Rose (2000) compared the impacts of social and human capital, concluding that social capital's influence on physical and emotional health is stronger than that of human capital. Specific forms of social capital, particularly neighborhood structure, have been shown to mitigate risk factors. For example, Stevenson (1998) revealed that supportive neighborhoods can compensate for a lack of family social support, while Beyers et al. (2003) found that neighborhood structure moderated the lack of parental monitoring as a risk factor for adolescent socialization.

Additionally, various studies demonstrate a positive relationship between social capital and self-regulation (DeFreese & Smith, 2013; Freeman et al., 2014; Martínez-López et al., 2024; Rees et al., 1999; Rees & Freeman, 2007; Sidianto & Heng, 2022; Trotter et al., 2021; Ulichney et al., 2023). For instance, social support has been shown to positively impact self-regulated learning (Martínez-López et al., 2024; Sidianto & Heng, 2022). Ulichney et al. (2023) even suggest the reverse causal direction, proposing that goals are evaluated before self-regulatory processes begin, which then lead to the provision of social support. However, no study has yet illuminated the role of social capital in the context of the independent regulatory modes of locomotion and assessment.

The Current Study

Building on these findings, the present study investigates how the regulatory modes of locomotion and assessment, their correlated personality traits (extraversion and neuroticism), and social capital jointly contribute to mental health & well-being in young adults. Special attention is given to the potential mediating role of social capital in these relationships and to the moderating role of locomotion in buffering the negative effects of assessment. Including personality traits allows for the disentangling of whether observed effects are due to regulatory modes themselves or to overlapping trait variance. In doing so, the study extends prior work by examining social capital both as an outcome and as a mechanism that explains how self-regulation influences well-being.

Research Questions

This study, therefore, aims to investigate the interplay between regulatory modes, correlated personality traits, social capital, and mental health & well-being.

RQ1. Do assessment, locomotion, extraversion, and neuroticism show opposite associations with social capital and mental health & well-being?

Previous research has shown that locomotion and assessment correlate with opposite psychological outcomes, with locomotion correlating positively with beneficial outcomes and assessment correlating with detrimental ones (Amato et al., 2017; Kruglanski et al., 2000; Sellin et al., 2003). Locomotion is also linked to extraversion, which is characterized by social engagement and enjoyment of interaction, and therefore likely to predict higher social capital. In contrast, assessment has been related to anxiety, neuroticism, and heightened self-attention, which are expected to undermine social capital. Thus, the following hypotheses are proposed:

H1: Social capital is negatively associated with assessment and neuroticism, and positively associated with locomotion and extraversion.

H2: Mental health & well-being is negatively associated with assessment and neuroticism, and positively associated with locomotion and extraversion.

RQ2. What predicts social capital and mental health & well-being, when considering locomotion, assessment, extraversion, neuroticism, and social capital?

Regulatory modes and personality traits represent characteristic ways of thinking that guide action (e.g., social engagement) and shape outcomes (e.g., well-being). Given the established importance of social capital for well-being (Beyers et al., 2003; Caughy et al., 2003; Rose, 2000; Ryff, 1995; Sen, 1993; Stevenson, 1998), social capital is also assumed to function as a direct predictor of well-being. Accordingly:

H3: Social capital is predicted by locomotion, assessment, neuroticism, and extraversion.

H4: Mental health & well-being is predicted by locomotion, assessment, neuroticism, extraversion, and social capital.

RQ3. Does social capital function as a mediator in the pathways from locomotion, assessment, extraversion, and neuroticism to mental health & well-being?

Social capital has consistently been shown to promote mental health & well-being (Beyers et al., 2003; Caughy et al., 2003; Rose, 2000; Stevenson, 1998). Locomotion and extraversion, through their association with positive affect and social engagement, are expected to enhance well-being via stronger social capital. In contrast, assessment and neuroticism, which are linked to anxiety, depression, and negative affect (Higgins, 1987; Kruglanski et al., 2000; Sellin et al., 2003), are expected to undermine social capital and thereby reduce well-being. Although debate remains about the causal direction, regulatory modes and personality traits are considered independent variables because they reflect characteristic ways of thinking that shape actions (such as building social capital) and ultimately affect how one feels. Based on this rationale, the following hypotheses are tested:

H5: Social capital mediates the negative effect of assessment and neuroticism on mental health & well-being. In other words, assessment and neuroticism lead to poor social capital and lower mental health & well-being.

H6: Social capital mediates the positive effect of locomotion and extraversion on mental health & well-being. In other words, locomotion and extraversion lead to strong social capital and better mental health & well-being.

RQ4. Does locomotion moderate the negative effects of assessment and neuroticism on social capital and mental health & well-being?

Given its associations with positive affect and extraversion, locomotion is assumed to buffer the detrimental impact of assessment and neuroticism. Thus:

H7: Locomotion reduces the likelihood that assessment and neuroticism will lead to poor social capital.

H8: Locomotion reduces the likelihood that assessment and neuroticism will lead to poor mental health & well-being.

Methodology

Data

The data for this study were collected as part of the Young Adult Survey Switzerland (YASS) (Huber, 2016, 2019, 2022) during 2018/19 (Huber, 2022). Every two years, approximately 90% of all Swiss men aged 19 to 21, who are subject to military service, along with a supplementary sample of around 2,500 women of the same age, are surveyed during the annual recruitment process using a questionnaire conducted by the Swiss Federal Youth Survey ch-x. Following a multi-step plausibility check, the final sample comprised 35,198 respondents (94% men, 6% women).

To correct for the gender imbalance, the data were weighted (calibrated) so that the proportion of men (50.9%) and women (49.1%) matched the Swiss Population according to the Swiss Federal Statistical Office (FSO) 2018. (Huber et al., 2022) For descriptive statistics, we report unweighted data to reflect the actual composition of the sample. For inferential analysis, we used weighted data to obtain population-representative estimates. Before conducting regression, mediation, and moderation analyses, standard assumptions were checked. Normality, linearity, homoscedasticity, and multicollinearity were examined, and no severe violations were detected.

Sample

The unweighted sample comprised 35,198 young adults in Switzerland (93.1% male, 6.9% female), aged 18-25 (M = 18.97, SD = 1.09). Educational status ranged from no Secondary II education (3.6%) to completed vocational education (57.7%) and general education (38.7%). Employment status varies, with 40.5% employed while in education, 16.9% in full-time positions, and 23% studying without employment. Overall, 14.9% had a migration background.

Measures

Self-Regulation (regulatory modes). Behavioral self-regulation was assessed using the German Locomotion–Assessment Questionnaire (Sellin et al., 2003), based on Regulatory Mode Theory (Higgins & Kruglanski, 1995). Following a confirmatory factor analysis, a shortened version was retained, comprising eight locomotion items and six assessment items. The final model showed good fit (χ^2(76) = 587.41, p < .001, CFI = .955, TLI = .933, RMSEA = .048, SRMR = .041). Internal consistency was satisfactory (locomotion: α = .80; assessment: α = .72) (see Appendix A for details).

Personality Traits. Extraversion and neuroticism were measured with three items each from the short version of the Big Five Inventory (Rammstedt & John, 2005). Three items per trait were administered (instead of the original four), rated on a 5-point Likert scale (1 = not at all true, 5 = completely true). Internal consistency was acceptable for extraversion (α = .71) and somewhat lower for neuroticism (α = .63), which is common for very brief scales with only a few items (see Appendix B for details).

Social Capital. Social capital was assessed with indicators of (a) number of close friends, (b) perceived satisfaction with social relationships, and (c) perceived emotional and material support. Each indicator was coded to reflect higher levels of social capital (see Appendix C for details).

Mental Health & Well-Being. Mental health & well-being were measured as a composite of depression and life satisfaction, following Headey et al. (1993). Depression was assessed with the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001), with higher values reflecting fewer depressive symptoms and therefore better mental health. Life satisfaction was measured with a single item ("In general, I have a good life") on a 7-point scale with higher values indicating higher satisfaction and thus better well-being (see Appendix D for details).

Control variables. Migration background and educational status were included as controls, as they are known to influence mental health outcomes (FSO, 2022a, 2022b).

Results

Descriptive Analysis

The unweighted *N, M* and *SD* of the considered scales are presented in Table 1. For comparability, social capital and mental health & well-being were rescaled to a 1–4 metric, with higher values indicating more positive outcomes.

On average, respondents reported relatively good levels of mental health & well-being (*M* = 0.49, *SD* = 1.31, *N* = 946) and fairly strong levels of social capital (*M* = 0.11, *SD* = 1.02, *N* = 1,141). For these two constructs, *z*-standardized scores were used to ensure comparability across differently scaled items. Regarding regulatory modes, assessment (*M* = 2.90, *SD* = 0.63, *N* = 36,517) and locomotion (*M* = 3.21, *SD* = 0.50, *N* = 36,517) were both above the scale midpoint, suggesting a balanced tendency toward evaluative and action-oriented orientations. In terms of personality traits, extraversion (*M* = 3.44, *SD* = 0.90, *N* = 36,517) scored higher than neuroticism (*M* = 2.77, *SD* = 0.84, *N* = 36,517).

For the control variables, 85% of the respondents had no migration background (*M* = 0.85, *SD* = 0.35, *N* = 36,517), and 4% had no tertiary education by the age of 19 (*M* = 0.04, *SD* = 0.19, *N* = 36,517). The smaller sample sizes for social capital and mental health & well-being compared to other constructs are due to item nonresponse and listwise deletion in SPSS. However, in regression and mediation models, the effective sample sizes are larger (e.g., *N* ≈ 4,981) because missing data were handled pairwise.

Table 1. Description of the Considered Scales (Unweighted N, M, and SD)

Variable Type	Components	N	M	SD
X-Variable	Assessment (1-5)	36517	2.90	0.63
	Neuroticism (1-5)	36517	2.77	0.84
	Extraversion (1-5)	36517	3.44	0.90
X-Variable, Moderator	Locomotion (1-5)	36517	3.21	0.50
Y-Variable	Mental health & well-being (z-standardized)	946	0.49	1.31
X-Variable, Y-Variable, Mediator	Social capital (z-standardized)	1141	0.11	1.02
Control Variable	No migration background (0/1)	36517	0.85	0.35
	Without tertiary education at age 19 (0/1)	36517	0.04	0.19

In the next step, we examined the bivariate correlations among the study variables to test our first set of hypotheses.

Correlation Analyses

The bivariate correlation analyses largely supported our hypotheses.

Locomotion was positively associated with mental health & well-being ($r = .055$, $p = .025$) and with extraversion ($r = .172$, $p < .001$), indicating that action-oriented individuals tend to report higher psychological well-being and greater sociability.

Assessment, by contrast, showed negative associations with social capital ($r = –.084$, $p < .001$), mental health & well-being ($r = –.185$, $p < .001$), and extraversion ($r = –.070$, $p < .001$), while correlating positively with neuroticism ($r = .280$, $p < .001$). This suggests that a strong evaluative orientation is linked to lower well-being, weaker social resources, and higher emotional instability.

Extraversion correlated positively with both social capital ($r = .243$, $p < .001$) and mental health & well-being ($r = .279$, $p < .001$), whereas neuroticism correlated negatively with social capital ($r = –.260$, $p < .001$) and mental health & well-being ($r = –.385$, $p < .001$). Thus, more sociable individuals report higher levels of well-being and stronger social ties, while emotionally unstable individuals tend to report the opposite pattern.

Finally, social capital itself was positively associated with mental health & well-being ($r = .432$, $p < .001$), confirming that stronger social networks are linked to better psychological outcomes. Overall, these correlations provide initial support for H1 and H2: social capital and mental health & well-being are positively related to locomotion and extraversion, and negatively related to assessment and neuroticism.

Bivariate correlation results are presented in Table 2.

Table 2. Correlation Analyses

		Social capital	Mental health & well-being	Extraversion	Neuroticism
Locomotion	Pearson-Correlation	.043	.055*	.172**	.025
	Sig. (2-sided)	.058	.025	<.001	.080
	Covariance	.029	.032	.073	.011
	N	1968	1632	4838	4838
Assessment	Pearson-Correlation	-.084**	-.185**	-.070**	.280**
	Sig. (2-sided)	<.001	<.001	<.001	<.001
	Covariance	-.072	-.145	-.039	.158
	N	1968	1632	4838	4838
Extraversion	Pearson-Correlation	.243**	.279**		
	Sig. (2-sided)	<.001	<.001	-	-
	Covariance	.288	.321		
	N	1968.	1632		
Neuroticism	Pearson-Correlation	-.260**	-.385**		
	Sig. (2-sided)	<.001	<.001	-	-
	Covariance	-.315	-.437		
	N	1968	1632		
Social Capital	Pearson-Correlation		.432**		
	Sig. (2-sided)	-	<.001	-	-
	Covariance		.721		
	N		653		

Regression Analyses

To test for standardized coefficients, ANOVA was conducted.

Prediction of social capital. Regression analyses showed that the model with regulatory modes as predictors was statistically significant, $R^2 = .018$, $F(4, 1963) = 9.20$, $p < .001$. Assessment negatively predicted social capital ($\beta = –.126$, $p < .001$), while locomotion had a positive effect ($\beta = .095$, $p < .001$).
In the model with personality traits, the overall regression was also significant, $R^2 = .106$, $F(4, 1963) = 58.21$, $p < .001$. Here, neuroticism negatively predicted social capital ($\beta = –.215$, $p < .001$), whereas extraversion had a positive effect ($\beta = .191$, $p < .001$).

Finally, in the full model including both regulatory modes and personality traits, the regression was significant, $R^2 = .107$, $F(6, 1961) = 39.27$, $p < .001$. However, only the personality traits remained significant predictors (neuroticism: $\beta = –.209$, $p < .001$; extraversion: $\beta = .185$, $p < .001$), while assessment and locomotion did not contribute uniquely to the model. (see Table 7)

These findings support H3, indicating that social capital is predicted by regulatory modes and personality traits, but that the latter explain more variance.

Regression results for social capital are summarized in Table 3.

Table 3. Regression Results for Social Capital

Predictor	Model 1: Regulatory modes	Model 2: Personality traits	Model 3: Full model
Assessment	-.126***	-	-.035 (ns)
Locomotion	.095***	-	.033 (ns)
Neuroticism	-	-.215***	-.209***
Extraversion	-	.191***	.185***
No migration background	.032 (ns)	.038 (ns)	.037 (ns)
Without tertiary education at age 19	-.050*	-.042*	-.042*
R^2	.018	.106	.107
F(*df*)	F(4,1963) = 9.20***	F(4,1963) = 58.21***	F(6,1961) = 39.27***

*p < .05, **p < .01, ***p < .001, ns = not significant

Prediction of Mental Health & Well-Being. Regression results are summarized in Table 4.

Regression analyses revealed that the model with regulatory modes as predictors was statistically significant, R^2 = 0.074, F(4, 1627) = 32.43, p < 0.001. Assessment negatively predicted mental health & well-being (β = −.239, p < .001), whereas locomotion positively predicted it (β = .135, p < .001).

The model with personality traits explained more variance, R^2 = .196, F(4, 1627) = 99.06, p < .001. Here, neuroticism was a strong negative predictor (β = −.331, p < .001), while extraversion was positively related to mental health & well-being (β = .180, p < .001).

A separate model with social capital also showed a strong effect, R^2 = .195, F(3, 649) = 52.32, p < .001, with social capital positively predicting mental health & well-being (β = .427, p < .001). In the full model including all predictors, R^2 increased to .299, F(7, 645) = 39.84, p < .001. Both regulatory modes and personality traits contributed: assessment (β = −.135, p < .001) and neuroticism (β = −.240, p < .001) negatively predicted mental health & well-being, whereas locomotion (β = .105, p = .005), extraversion (β = .107, p = .003), and social capital (β = .314, p < .001) were significant positive predictors. (see Table 8)

Overall, these findings confirm H4, showing that regulatory modes, personality traits, and social capital jointly explain substantial variance in mental health & well-being. Specifically, higher locomotion, extraversion, and social capital are associated with better well-being, whereas higher assessment and neuroticism are linked to poorer outcomes.

Regression results for mental health & well-being are presented in Table 4.

Table 4. Regression Results for Mental Health & Well-Being

Predictor	Model 1: Regulatory modes	Model 2: Personality traits	Model 3: Social capital	Model 3: Full model
Assessment	-.239***	-		-.135***
Locomotion	.135***	-		.105**
Neuroticism	-	-.331***		-.240***
Extraversion	-	.180***		.107**
Social capital			.427***	.314***
No migration background	.078**	.076***	.073*	.072*
Without tertiary education at age 19	-.125***	-.098***	-.050 (ns)	-.046 (ns)
R^2	.074	.196	.195	.299
F(*df*)	F(4,1627) = 32.43***	F(4,1627) = 99.06***	F(3,649) = 52.317***	F(7,645) = 39.84***

*p < .05, **p < .01, ***p < .001, ns = not significant

Further tests were conducted in preparation for the subsequent mediation and moderation analyses. As assessed by visual inspection of the scatterplots after LOESS smoothing, the relationships of all variables involved in the mediation analysis were approximately linear.

Mediation Analysis

The mediation analyses were conducted in SPSS using the PROCESS add-in by Hayes (Model 4).

Assessment. With a weighted sample of N = 4,981, assessment showed a significant negative direct effect on mental health & well-being (β = −.117, $p < .001$, 95% CI [−.158, −.117]). This effect was partially mediated by social capital (indirect effect: β = −.015, 95% CI [−.027, −.004]). More specifically, assessment negatively predicted social capital (β = −.041, $p = .012$, 95% CI [−.156, −.019]), whereas social capital positively predicted mental health & well-being (β = .364, $p < .001$, 95% CI [.279, .327]) (see Table 5 and Figure 1).

Table 5. Mediation Analysis With Assessment

| Outcome Variable	Predictor Variables	β	b	p	LLCI	ULCI
Social capital	Assessment	-.0413	-.0877	.0119	-.1560	-.0193
	No migration background	.0548	.2158	.0004	.0963	.3354
	Without tertiary education at age 19	-.3402	-.3402	.0404	-.6656	-.0149
Mental health & well-being	Assessment	-.1167	-.2065	<.001	-.2554	-.1577
	Social capital	.3637	.3031	<.001	.2787	.3274
	No migration background	.0689	.2261	<.001	.1305	.3217
	Without tertiary education at age 19	-.0834	-.6145	<.001	-.8577	-.3713
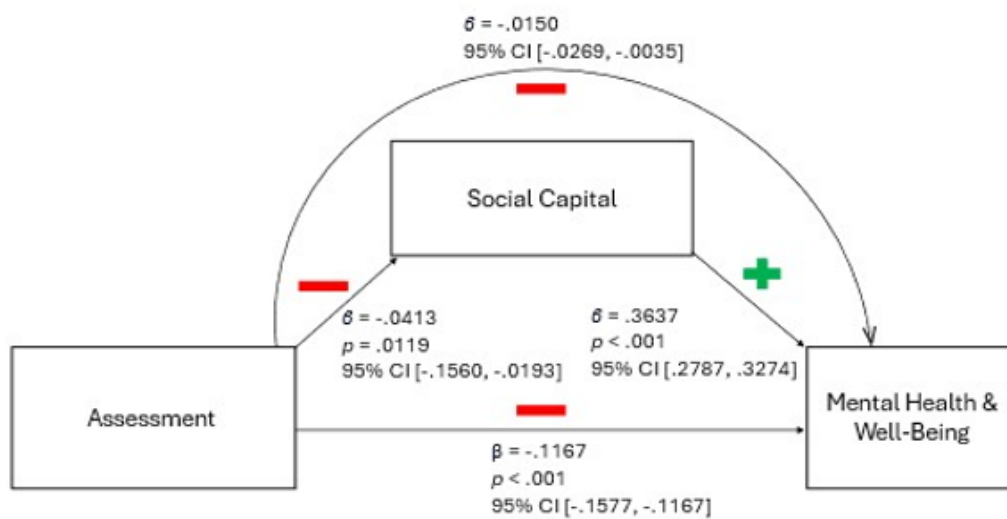
Figure 1. Mediation Analysis With Assessment

Neuroticism. Neuroticism also had a significant negative direct effect on mental health & well-being (β = −.294, $p < .001$, 95% CI [−.458, −.384]). This effect was partially mediated by social capital (indirect effect: β = −.067, 95% CI [−.078, −.056]). Neuroticism negatively predicted social capital (β = −.219, $p < .001$, 95% CI [−.425, −.328]), and social capital in turn positively predicted mental health & well-being (β = .304, $p < .001$, 95% CI [.229, .277]) (see Table 6 and Figure 2).

Table 6. Mediation Analysis With Neuroticism

| Outcome Variable	Predictor Variables	β	b	p	LLCI	ULCI
Social capital	Neuroticism	-.2190	-.3763	<.001	-.4251	-.3276
	No migration background	.0526	.2072	.0006	.0891	.3254
	Without tertiary education at age 19	-.0311	-.2751	.0821	-.5852	-.0351
Mental health & well-being	Neuroticism	-.2937	-.4206	<.001	-.4575	-.3836
	Social capital	.3040	.2533	<.001	.2294	.2772
	No migration background	.0692	.2271	<.001	.1358	.3185
	Without tertiary education at age 19	-.0745	-.5493	<.001	-.7784	-.3202
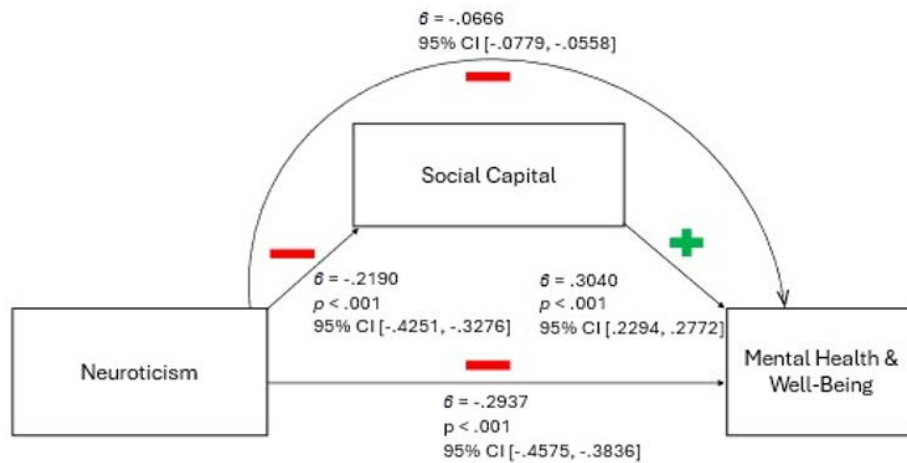
Figure 2. Mediation Analysis With Neuroticism

Thus, H5 was confirmed: social capital negatively mediates the negative effects of assessment and neuroticism on mental health & well-being.

Locomotion. Locomotion had a significant positive direct effect on mental health & well-being (β = .034, p = .030, 95% CI [.007, .136]). This effect was partially mediated by social capital (indirect effect: β = .020, 95% CI [.007, .033]). Locomotion positively predicted social capital (β = .054, p = .002, 95% CI [.050, .227]), which in turn was positively related to mental health & well-being (β = .367, p < .001, 95% CI [.281, .330]) (see Table 7 and Figure 3).

Table 7. Mediation Analysis With Locomotion

| Outcome Variable	Predictor Variables	β	b	p	LLCI	ULCI
Social capital	Locomotion	.0541	.1384	.0023	.0495	.2272
	No migration background	.0538	.2158	.0005	.0927	.3307
	Without tertiary education at age 19	-.3127	-.3402	.0578	-.6357	.0103
Mental health & well-being	Locomotion	.0335	.0715	.0295	.0071	.1359
	Social capital	.3667	.3056	<.001	.2809	.3303
	No migration background	.0680	.2233	<.001	.1268	.3197
	Without tertiary education at age 19	-.0795	-.5861	<.001	-.8307	-.3416
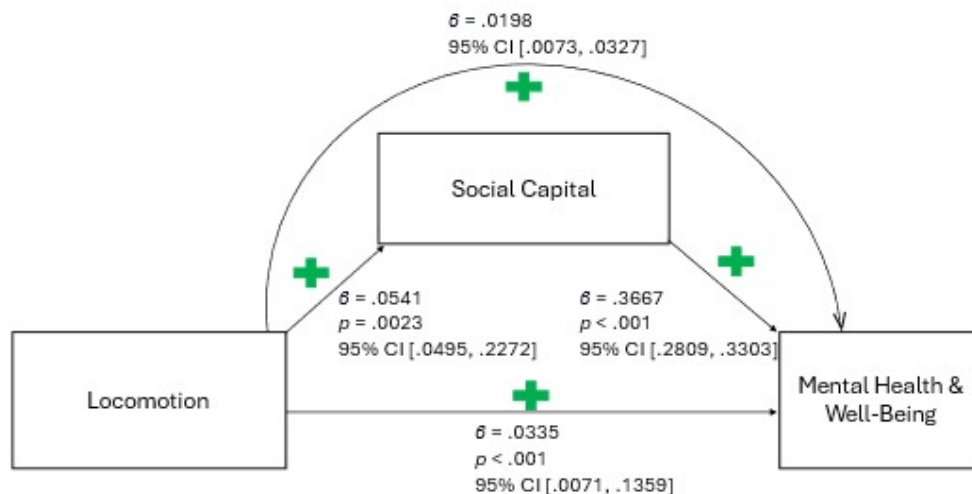
Figure 3. Mediation Analysis With Locomotion

Extraversion. Extraversion showed a significant positive direct effect on mental health & well-being (β = .219, p < .001, 95% CI [.259, .334]). This effect was partially mediated by social capital (indirect effect: β = .072, 95% CI [.061, .084]).

Extraversion positively predicted social capital (β = .225, p < .001, 95% CI [.321, .413]), and social capital again positively predicted mental health & well-being (β = .319, p < .001, 95% CI [.241, .291]) (see Table 8 and Figure 4).

Table 8. Mediation Analysis With Extraversion

| Outcome Variable	Predictor Variables	β	b	p	LLCI	ULCI
Social capital	Extraversion	.2254	.3666	<.001	.3207	.4125
	No migration background	.0447	.1760	.0030	.0596	.2924
	Without tertiary education at age 19	-.0335	-.2964	.0667	-.6132	.0205
Mental health & well-being	Extraversion	.2187	.2964	<.001	.2592	.3335
	Social capital	.3192	.2659	<.001	.2412	.2907
	No migration background	.0615	.2018	<.001	.1087	.2949
	Without tertiary education at age 19	-.0787	-.5802	<.001	-.8207	-.3398
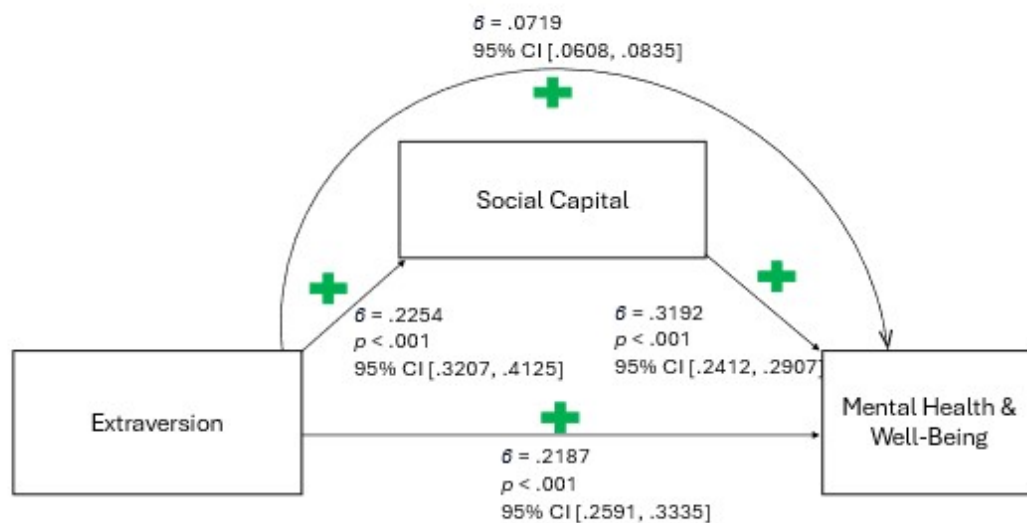
Figure 4. Mediation Analysis With Extraversion

Thus, H6 was confirmed: social capital positively mediates the positive effects of locomotion and extraversion on mental health & well-being.

Moderation Analyses

Assessment (IV), Locomotion (Moderator), Social Capital (DV). The interaction between assessment and locomotion significantly predicted social capital, $F(5, 15)$ = 78.87, p < .001, accounting for 3.16% of the variance. Locomotion significantly moderated the negative association between assessment and social capital, ΔR^2 = 1.80%, $F(1, 15)$ = 214.47, p < .001, 95% CI [.244, .319]. Specifically, assessment negatively predicted social capital (β = −.238, p < .001, 95% CI [−.278, −.198]), whereas locomotion positively predicted social capital (β = .311, p < .001, 95% CI [.260, .362]) and significantly buffered the effect of assessment (interaction: β = .282, p < .001, 95% CI [.244, .319]). Thus, individuals high in locomotion were less affected by the detrimental impact of assessment on social capital. Conditional effects are shown in Table 9.

Table 9. Moderation Analysis for the Prediction of Social Capital by the Interaction Between Assessment and Locomotion (Conditional Effects)

Locomotion	Effect	SE(HC3)	t	p	LLCI	ULCI
-.5568	-.3948	.0241	-16.3916	<.001	-.4420	-.3475
.0000	-.2380	.0206	-11.5716	<.001	-.2783	-.1977
.5568	-.0812	.0223	-3.6499	<.001	-.1248	-.0376

Neuroticism (IV), Locomotion (Moderator), Social Capital (DV). The interaction between neuroticism and locomotion also significantly predicted social capital, $F(5, 15)$ = 78.87, p < .001, accounting for 5.56% of the variance. Locomotion significantly moderated the negative effect of neuroticism on social capital, ΔR^2 = 0.09%, $F(1, 15)$ = 8.75, p = .003, 95% CI

[.003, .032]. Specifically, neuroticism was negatively associated with social capital (β = −.379, p < .001, 95% CI [−.406, −.352]), whereas locomotion showed a positive main effect (β = .107, p < .001, 95% CI [.060, .154]) and a positive interaction effect (β = .094, p = .003, 95% CI [.032, .156]). Conditional effects are shown in Table 10.

Table 10. Moderation Analysis for the Prediction of Social Capital by the Interaction Between Neuroticism and Locomotion (Conditional Effects)

Locomotion	Effect	SE(HC3)	t	p	LLCI	ULCI
-.5568	-.4310	.0242	-17.7958	<.001	-.4785	-.3835
.0000	-.3789	.0140	-27.0621	<.001	-.4064	-.3515
.5568	-.3268	.0206	-15.8367	<.001	-.3673	-.2864

Thus, H7 was confirmed: locomotion decreases the likelihood that assessment and neuroticism lead to poor social capital.

Assessment (IV), Locomotion (Moderator), Mental Health & Well-Being (DV). Locomotion did not significantly moderate the effect of assessment on mental health & well-being, ΔR^2 = 0%, F(1, 12) = 32.28, p = .570, 95% CI [−.060, .033]. Assessment negatively predicted mental health & well-being (β = −.433, p < .001, 95% CI [−.471, −.398]), while locomotion positively predicted it (β = .386, p < .001, 95% CI [.334, .438]). However, the interaction effect was nonsignificant (β = −.014, p = .570, 95% CI [−.060, .033]).

Neuroticism (IV), Locomotion (Moderator), Mental Health (DV). Similarly, locomotion did not moderate the effect of neuroticism on mental health & well-being, ΔR^2 = 0%, F(1, 12) = 37.29, p = .542, 95% CI [−.038, .073]. Neuroticism negatively predicted mental health & well-being (β = −.545, p < .001, 95% CI [−.570, −.520]), and locomotion had a positive main effect (β = .155, p < .001, 95% CI [.108, .202]). However, the interaction effect was nonsignificant (β = .017, p = .542, 95% CI [−.038, .073]).

Thus, H8 was not confirmed: locomotion did not buffer the negative effects of assessment or neuroticism on mental health & well-being.

Summary of Hypotheses

In summary, the hypotheses were supported as follows:

H1: Supported. Social capital was negatively associated with assessment and neuroticism, and positively associated with locomotion and extraversion.

H2: Supported. Mental health & well-being was negatively associated with assessment and neuroticism, and positively associated with locomotion and extraversion.

H3: Partially supported. In separate regression models, assessment, locomotion, neuroticism, and extraversion predicted social capital; in the full model, only neuroticism and extraversion remained significant predictors.

H4: Supported. Mental health & well-being was predicted by assessment, locomotion, neuroticism, extraversion, and social capital.

H5: Supported. Social capital mediated the negative effects of assessment and neuroticism on mental health & well-being.

H6: Supported. Social capital mediated the positive effects of locomotion and extraversion on mental health & well-being.

H7: Supported. Locomotion moderated the negative effects of assessment and neuroticism on social capital.

H8: Not supported. Locomotion did not significantly moderate the effects of assessment or neuroticism on mental health & well-being.

Discussion

The present study examined how self-regulatory modes and personality traits predict social capital and mental health & well-being, and whether these associations are mediated by social capital and moderated by locomotion. Overall, the findings provide both confirmation and nuance to the proposed hypotheses, with important implications for the relative role of personality traits versus regulatory modes in shaping social connectedness and psychological functioning.

First, as hypothesized, assessment was negatively related to both social capital and mental health & well-being, while locomotion showed positive associations. Similarly, neuroticism predicted poorer outcomes and extraversion predicted better outcomes. These patterns align with previous studies linking assessment to self-attentiveness and anxiety (Kruglanski et al., 2000; Sellin et al., 2003) and locomotion to positive affect and extraversion (Amato et al., 2017). They also extend earlier findings by showing that these regulatory modes are oppositely related to social connectedness in the form of social capital.

However, when personality traits and regulatory modes were tested simultaneously, only neuroticism and extraversion remained significant predictors of social capital, while assessment and locomotion no longer contributed unique variance.

This suggests that the apparent effects of regulatory modes on social capital are largely explained by their overlap with broader personality dispositions. In other words, personality traits appear to be stronger and more robust predictors of social capital than self-regulatory modes. This finding is theoretically important, as much of the literature emphasizes the primacy of self-regulation in shaping social functioning. Our results challenge this assumption, highlighting instead that enduring personality traits may play the more fundamental role in predicting social connectedness. Future research should explore to what extent regulatory modes capture variance already embedded in personality structures, and whether they contribute uniquely in more specific situational or developmental contexts.

The mediation analyses further confirmed that social capital is a key pathway linking both regulatory modes and personality traits with mental health & well-being. Assessment and neuroticism predicted lower social capital, which in turn contributed to poorer well-being, while locomotion and extraversion predicted higher social capital, which in turn enhanced well-being. These findings align with theoretical frameworks positing social connectedness as a protective factor for psychological functioning (e.g., Ryff, 1995; Stevenson, 1998). They also extend existing knowledge by specifying how regulatory modes and personality traits exert their effects—namely, by facilitating or impeding the accumulation of social capital.

The moderation analyses yielded more complex results. Locomotion buffered the negative effects of assessment and neuroticism on social capital, indicating that individuals high in locomotion are less vulnerable to the social disadvantages typically associated with high assessment and neuroticism. This suggests that locomotion may function as a compensatory resource in the domain of social connectedness, where active goal pursuit and behavioral engagement mitigate the isolating tendencies of self-attentiveness and negative affectivity. In contrast, no significant moderation effects emerged for mental health & well-being. This non-significant finding is theoretically meaningful: it suggests that while locomotion may help individuals build and maintain social ties despite personality vulnerabilities, it does not directly shield them from the emotional costs of assessment or neuroticism once these have already impacted well-being. In other words, locomotion may primarily protect social capital, but the translation of social capital into mental health & well-being may require additional psychological or contextual resources.

Taken together, these findings underscore the central role of personality traits in predicting social capital and mental health & well-being, while pointing to more context-specific contributions of regulatory modes. They highlight the importance of considering social capital not only as a correlate but also as a mechanism that explains how individual differences in self-regulation and personality traits shape psychological well-being. The results also caution against overestimating the primacy of regulatory modes, as their effects on social connectedness appear to be largely accounted for by broader personality dispositions. Future research should investigate under what conditions regulatory modes exert incremental predictive power and how interventions aimed at fostering locomotion competence may be leveraged to mitigate the social risks associated with assessment and neuroticism.

Conclusion

This study provides further insights into the opposite outcomes of assessment and locomotion for mental health & well-being. While assessment was associated with poorer mental health & well-being and locomotion with better mental health & well-being, these relationships were mediated by social capital: assessment eroded, whereas locomotion strengthened, social resources, which in turn predicted psychological health. This highlights social capital as a key pathway through which regulatory modes translate into mental health outcomes.

Second, regression analyses showed that personality traits (extraversion and neuroticism) were stronger predictors of social capital than regulatory modes. This suggests that individual differences in social connectedness are more directly rooted in personality dispositions, with self-regulation playing a secondary role.

Third, moderation analyses revealed a compensatory effect of locomotion: individuals high in locomotion were less vulnerable to the detrimental impact of assessment and neuroticism on social capital. Notably, this buffering effect was specific to social capital and did not extend to mental health & well-being, underlining the importance of locomotion primarily for building and maintaining social resources.

Recommendations

For future research, it will be crucial to examine assessment and locomotion separately, since their opposite associations with mental health & well-being suggest that they function in distinct ways. Investigating locomotion as a moderator also proved to be a fruitful approach and should be applied more broadly, as compensatory effects can reveal in which contexts specific self-regulatory dimensions may buffer against risks. Furthermore, as this study showed that personality traits – particularly neuroticism and extraversion – explained social capital more strongly than regulatory modes, future research should systematically include both perspectives in order to disentangle the relative contribution of self-regulation and personality. To deepen these insights, longitudinal designs are needed to clarify directionality, and mixed-method approaches such as self-regulation profiles may further illuminate different types of regulatory-personality constellations. Finally, future studies should extend the mediation approach by testing additional variables that may explain *why* regulatory modes and personality traits lead to divergent outcomes in social capital and mental health & well-being.

In terms of practical implications, two lines of action follow from these findings. First, fostering locomotion through behavioral activation and structured goal-setting may strengthen social integration and psychological resilience, while at the same time it is essential to address the risks of assessment by training constructive self-reflection. Rather than abandoning assessment, the goal should be to cultivate balanced judgment and adaptive self-evaluation, while avoiding excessive rumination or a bias toward negative interpretations. Second, given the strong negative effects of neuroticism on both social capital and mental health & well-being, interventions should specifically target individuals high in neuroticism by enhancing social skills, offering structured opportunities to build supportive networks, and providing strategies to cope with emotional instability. Such targeted measures could be implemented in educational and counseling settings to promote both social resources and mental health in young adults.

Limitations

The study is based on repeated cross-sectional data, which limits conclusions about causality. Longitudinal designs would provide stronger evidence for the directionality of effects, particularly whether regulatory modes shape social capital and mental health & well-being, or whether social resources and mental health & well-being in turn influence self-regulatory tendencies. Moreover, it remains an open question whether the assumed causal order (regulatory modes → social capital → mental health & well-being) is the only plausible pathway. Our theoretical rationale supported this order, but reciprocal effects cannot be ruled out.

Ethics Statements

The study involving human participants were reviewed and approved by the Federal Departement of Defence, Civil Protection and Sports (VBS) and the ch-x/YASS Research Consortium. The participants provided their written informed consent to participate in this study.

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Conflict of Interest

The authors declare no conflict of interest.

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Generative AI Statement

This manuscript was prepared by the authors. During the writing process, ChatGPT (OpenAI, GPT-5) was used solely to check language and eliminate semantic errors. The final version of the manuscript was reviewed and verified by the authors.

Authorship Contribution Statement

Egger: Conceptualization, design, and analysis of the selected data for this paper; writing of the manuscript. Huber: Conceptualization, design, and leadership of the overall study (Young Adult Survey Switzerland); paper editing and reviewing; supervision.

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Apendices

Appendix A. Confirmatory Factor Analysis of the Locomotion–Assessment Questionnaire

The Locomotion–Assessment Questionnaire (Sellin et al., 2003), based on Regulatory Mode Theory (Higgins & Kruglanski, 1995), was adapted by retaining only items with acceptable factor loadings from the original 22 items. A confirmatory factor analysis (CFA) showed acceptable model fit after removing items with very low standardized loadings and allowing residual covariances among theoretically related items, $\chi^2(76) = 587.41$, $p < .001$, CFI = .96, TLI = .93, RMSEA = .05, SRMR = .04. The final model included 8 locomotion items and 6 assessment items, with satisfactory internal consistencies (locomotion: α = .80; assessment: α = .72).

Table A1. Final Locomotion and Assessment Items, Standardized Factor Loadings, and Reliability

Subscale	Item example (retained items)	Std. loading	Cronbach's α
Locomotion (8 items)	"Ich setze mich gern für etwas ein, selbst wenn das zusätzliche Mühe mit sich bringt."	.63	
	"Ich bin ein Tatmensch."	.66	
	"Wenn ich beschlossen habe, etwas zu tun, kann ich kaum erwarten, damit anzufangen."	.61	
	"Sobald ich eine Aufgabe erledigt habe, ist mir schon die nächste im Sinn."	.59	
	"Wenn ich eine Sache angefangen habe, halte ich gewöhnlich durch."	.59	
	"Wenn ich ein Ziel erreicht habe, versetzt mich das in Erregung."	.51	
	"Es macht mir Spass, aktiv zu handeln als nur zuzuschauen und zu beobachten."	.67	
	"Meine Gedanken sind oft auf die Aufgabe gerichtet, die ich gerade erledigen will."	.56	**.80**
Assessment (6 items)	"Ich bin ein Tatmensch."	.53	
	"Es macht mir Spass, die Pläne anderer Leute zu beurteilen."	.61	
	"Ich kritisiere oft meine eigenen Arbeiten wie auch die anderer."	.70	
	"Ich bin selbstkritisch und befangen in Bezug auf das, was ich mache."	.54	
	"Ich denke mir oft, dass die Entscheidungen anderer Leute falsch sind."	.51	
	"Wenn ich jemanden kennen lerne, schätze ich gewöhnlich ab, wie er/sie in verschiedener Hinsicht einzustufen ist."	.47	**.72**

Note: All items were rated on a 5-point Likert scale (1 = not at all true, 5 = completely true). Standardized loadings from CFA are shown.

Appendix B. Personality Traits

Extraversion and neuroticism were assessed with selected items from the short version of the Big Five Inventory (BFI-S; Rammstedt & John, 2005). Three items were used for each trait, rated on a 5-point Likert scale (1 = not at all true, 5 = completely true).

Reliability: Internal consistencies were acceptable (extraversion: α = .74; neuroticism: α = .71).

Table B1. Items and Reliability of Extraversion and Neuroticism

Trait	Item example (retained items)	Std. loading	Cronbach's α
Extraversion	"Ich bin gesprächig."	3	.71
Neuroticism	"Ich mache mir oft Sorgen."	3	.63

Note: Only example items are displayed here for brevity. Full item wording is available upon request.

Appendix C. Social Capital

According to Bourdieu (1986, 2012), social capital refers to both the quality and quantity of social networks. In this study, social capital encompassed three indicators: number of close friends, satisfaction with social relationships, and perceived social support.

(a) Number of close friends was assessed with the question *"How many good and close friends do you have?"* Response options were: "1–3," "4–6," "7–9," "10–12," "13 or more," "none," and "I don't know." For analyses, responses were recoded into three categories: 1 = 0–2, 2 = 3–4, 3 = 5 or more.

(b) Satisfaction with social relationships was assessed by asking participants to indicate how well they felt cared for on a 5-point scale ranging from *"very well cared for"* to *"left alone"* (plus *"doesn't concern me"*). This was assessed across five domains: (a) parents, (b) partner, (c) friends, (d) educational or vocational environment, and (e) teacher or supervisor. A composite variable was created, ranging from 1 = left alone to 4 = very well cared for.

(c) Social support combined emotional and material support. Emotional support was assessed by asking whether participants had enough people to rely on in times of need (e.g., understanding, time to talk), and material support included concrete assistance (e.g., advice, lending items, offering jobs, providing transport). Response options were "many," "enough," "too little," and "a great deal too little." A composite variable was coded from 1 = a great deal too little to 4 = very much.

Note: Indicators had different original scale ranges (number of friends: 3 categories; satisfaction: 4-point scale; support: 4-point scale). For analyses, indicators were standardized before use as a composite.

Appendix D. Mental Health & Well-Being

Following Headey et al. (1993), who emphasize that high life satisfaction is inversely related to depression, we conceptualized mental health & well-being as a composite of both dimensions. Scores of depression and life satisfaction were standardized and averaged.

(a) Depression was assessed with the *Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001)*, a nine-item self-administered diagnostic instrument. Items ask about the frequency of specific complaints over the past two weeks (e.g., *"difficulties focusing, for instance, while reading newspapers or watching television"*), rated from 0 = almost every day to 4 = not at all. Higher values indicate fewer depressive symptoms. Reliability was excellent (α = .90).

(b) Life satisfaction was measured using a single item: *"In general, I have a good life."* Responses were given on a 7-point scale ranging from 1 = don't agree at all to 7 = fully agree, and subsequently higher values indicate greater life satisfaction.

Table D1. Indicators of Mental Health & Well-Being

Dimension	Instrument / item	Cronbach's α
Depression	PHQ-9 (9 items, Kroenke et al., 2001)	.90
Life Satisfaction	"Im Allgemeinen habe ich ein glückliches Leben."	-

Note: Depression and life satisfaction differed in original scale ranges (0–4 vs. 1–7). For analyses, both were standardized and averaged to form a composite measure.