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Evolved to Endure: The Social Rank Hypothesis of Resilience

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Abstract

Resilience, the ability to recover from adversity, is a cornerstone of psychological well-being. However, there is wide disagreement about resilience as a construct. This study tests an evolutionary model of resilience as a mechanism for navigating social hierarchies. We examined whether perceived rank predicts resilience and whether rank mediates the relationship between social support and resilience in a population of human service professionals (N = 256). Participants completed an online survey that included measurements of resilience, rank, personality, and social support. Results show that higher perceived rank and emotional stability predicted resilience. Moreover, social rank fully mediated the relationship between social support and resilience when controlling for low neuroticism. The findings support the idea that resilience may function as an evolved mechanism for navigating social hierarchies, and suggest that strengthening social alliances and perceptions of rank could enhance resilience-focused interventions.

Introduction

Human resilience plays a crucial role in psychological health across multiple domains of adaptive functioning. It is associated with higher motivation (Rouse, 2001), greater goal achievement (Magnano et al., 2016), and increased optimism, purpose, and social support (Malkoç & Yalçın, 2015). Resilience has also been linked with greater happiness and life-satisfaction (Aboalshamat et al., 2018; Yıldırım & Tanrıverdi, 2021), as well as lower anxiety (Song et al., 2021), and reduced risk of depression (Min et al., 2015).

Despite its centrality to wellbeing, there is wide disagreement about resilience as a construct, and no unifying theory of resilience has been developed. Broadly, resilience refers to the capacity to adapt to stress or adversity—a notion reflected in its Latin root, *resile*, meaning "to bounce back" (Oxford English Dictionary, n.d.). However, researchers have variably conceptualized resilience as a dynamic process, a measurable outcome, transient state, a stable trait, or explained it through related constructs such as self-esteem, or internal locus of control (Musich et al., 2022).

As a process, resilience has been conceptualized as the interaction between personality and context, encompassing cognitive appraisal, coping strategies, and learning (Fullerton et al., 2021), and as outcome as the observable manifestation of effective coping (Leipold & Greve, 2009). It has also been described at the state level as a transient capacity to effectively cope with stress (Fisher et al., 2019), and at the trait level as a constellation of relatively stable characteristics such as optimism, equanimity (Wagnild & Young, 1993), humor, and faith (Connor & Davidson, 2003).

While the literature lacks definitional consensus, its associations with personality are consistent. Meta-analytic research indicates that resilience is positively associated with all Big-5 personality dimensions, with the exception of neuroticism, which has a strong negative correlation (Oshio et al., 2018). Neuroticism reflects a dispositional tendency toward negative affectivity, anxiety, emotional instability, and self-doubt (Lahey, 2009), which may undermine resilience. Conversely, traits such as extraversion, and conscientiousness may promote resilience by facilitating social support and self-discipline (Friborg et al., 2005), and agreeableness through reduced interpersonal conflict (Ercan, 2017).

Given the lack of conceptual clarity surrounding resilience, greater theoretical consensus is needed. Much of the literature has focused on proximate explanations, identifying psychological traits, cognitive styles, and social resources associated with adaptive coping. While these factors help explain how resilience functions, they do not clarify why such mechanisms exist. An evolutionary perspective may offer a more parsimonious model by addressing the ultimate functions of resilience. Myriad proximate correlates of resilience—such as self-esteem, mood, perceived control, personality, and social support—are tied to the regulation of social rank. From this perspective, resilience may reflect the capacity to recover from status-related setbacks and maintain goal-directed behavior within competitive, rank-ordered social environments.

Social Rank and Self Esteem

Among social animals, higher rank typically confers greater access to fitness resources such as territory, food, and mates (Sapolsky, 2005). Consequently, rank is often contested, with higher status associated with greater physical size (Blaker & van Vugt, 2014), strength, and aggression (Desmichel & Rucker, 2022). In humans, rank is also reflected in socioeconomic indicators such as job titles (Magee & Galinsky, 2008), wealth (Cheng & Tracy, 2013), and education (Albrecht & Albrecht, 2010); however physical stature continues to predict higher rank in the modern day, even in contexts where formidability is irrelevant (Case & Paxson, 2008).

Higher-ranking individuals are incentivized to maintain and defend their position (Dubois & Ordabayeva, 2015), which favors behavioral strategies that prioritize *engaging with* rather than avoiding challenges. Consistent with this, higher rank is associated with greater approach motivation, supporting resilience through problem-solving and persistence in the face of setbacks (Elliot & Thrash, 2002). In contrast, lower rank is associated with increased aggression from dominant others (Price et al., 2007), as well as, submissiveness and depression (Gilbert, 2001). These conditions promote *withdrawal* from challenges (Allen & Krofel, 2017), undermining recovery from adversity (Gilbert & Allan, 1998)
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Effectively navigating social hierarchies requires evaluating the costs and benefits of competition. In rank-ordered systems, individuals estimate their likelihood of success in contests for valued resources relative to others (Gilbert et al., 1995). One hypothesis proposes that self-esteem functions as an internal monitor of social rank—a *hierometer*—that rises and falls in response to cues of respect, admiration, and prestige within social groups (Mahadevan et al., 2019). In this view, self esteem guides strategic behavior, such as competing with weaker rivals, or withdrawing from competition with those possessing greater power to inflict costs. Because adversity in social species often arises from status-related conflict (Sloman et al., 1994), resilience may partly reflect perceived social rank—as an index of expected success in social competition.

Mood

The link between social rank and resilience is also supported by evolutionary models of depression. The Social Competition Hypothesis proposes that depression serves adaptive functions in hierarchical contexts, including inhibiting upward aggression, signaling submission, and promoting disengagement from unwinnable contests (Price et al., 1994). Such responses may reduce the risk of injury or exclusion when facing more powerful competitors.

Meta-analytic evidence supports this framework, demonstrating that lower social rank is associated with higher levels of depression, self-harm, and suicidal ideation (Wetherall et al., 2019). These responses may reflect strategic withdrawal from unattainable goals or high-risk conflicts, functioning as an evolved appeasement mechanism in response to hierarchical disadvantage (Price et al., 1994).

While resilience reflects the capacity to recover from stress, its inverse resembles learned helplessness. Classic work by Maier and Seligman (1976) demonstrated that exposure to uncontrollable stress produces behavioral passivity, mirroring depressive symptoms. Consistent with this, resilience is negatively associated with depression, and can buffer depressive symptom severity following adversity (Wingo et al., 2010).

Physiology

Converging physiological evidence also links social rank with processes central to resilience. For example, higher social rank is associated with lower cortisol reactivity and more rapid recovery following stress, facilitating approach-oriented responses (Akinola & Mendes, 2014). Baseline testosterone is likewise associated with higher rank (Czoty et al., 2009; Eisenegger et al., 2011), increased approach motivation (Kutlikova et al., 2021), and a greater likelihood of re-engaging in competition after setbacks (Mehta & Josephs, 2006). Serotonin has also been linked to social rank across species (Edwards & Kravitz, 1997) and plays a central role in mood regulation (Young & Leyton, 2002), emotional stability (Kokkonen & Pulkkinen, 2001), and adaptive coping (Flett et al., 1996)—all core components of resilience (Tugade & Fredrickson, 2004; Puglisi-Allegra & Andolina, 2015). These physiological correlates do not operate in isolation but shape, and are shaped by, the social behaviors through which individuals navigate social hierarchies.

Social-Support as Alliances

Ascending social hierarchies often entails eliciting the alliance and investment of others (e.g., approval, support, and care; Gilbert, 2001) as a competitive social strategies. In turn, social support predicts resilience (Baltaci & Karataş, 2015) and plays a key role in physical and mental health (Ozbay et al., 2007). Additionally, social rank is often related to the number or quality of alliances (Strauss & Holekamp, 2019). The associations between resilience, social rank, and alliances underscore how deeply human well-being is rooted in our evolved need for cooperative bonds–suggesting that resilience may emerge from the stability and strength of one's social position within a network of allies. We speculate that the perception of available alliances shapes approach behavior in the face of social adversity, such that individuals who perceive strong social backing may be more willing to engage, persist, and compete rather than withdraw.

Neuroticism

As noted, neuroticism is associated with lower resilience within the Big Five framework (Oshio et al., 2018), and also appears to be related to rank status. For example, low neuroticism is one of the strongest Big Five predictors of leader emergence and leadership effectiveness (Judge et al., 2002). Moreover, research suggests that individuals higher in neuroticism exhibit more negative affective responses to upward social comparisons in workplace contexts (Buunk et al., 2001).

Taken together, these findings suggest that resilience may reflect individuals' self-perceived social rank, which is bolstered by social alliances that enhance expected success in social competition, while traits such as neuroticism serve as indicators of lower perceived rank—providing a rationale for examining how perceived rank mediates the relationship between social support and resilience.

Study Aims and Hypotheses

The present study tests the Social Rank Hypothesis of Resilience, an evolutionary model proposing that resilience reflects individuals' capacity to navigate social conflict as a function of cues related to hierarchical standing and coalitionary support. Specifically, we examined whether perceived social rank mediates the association between social support and resilience in a sample of human service workers, an occupational group characterized by elevated stress exposure (Wieclaw et al., 2006). In addition, we investigated emotional stability (low neuroticism) as an individual-difference correlate of resilience and conducted supplementary analyses to evaluate alternative mediation pathways among these variables.

This study explores the relationship between resilience, social rank, social support, and personality. It was hypothesized that:

1. Perceived social rank will positively predict resilience.
2. Social support will positively predict resilience.
3. Low neuroticism will positively predict resilience.
4. Perceived social rank will mediate the association between social support and resilience.

Supplementary Analyses

To evaluate the robustness of the proposed theoretical framework, we conducted supplementary analyses testing alternative mediation pathways. Specifically, we estimated models assessing whether the association between perceived social rank and resilience operated indirectly through social support, thereby evaluating whether the observed relationships were robust to alternative ordering.

We also examined the role of emotional stability within the broader framework by testing bidirectional indirect pathways: (a) whether emotional stability predicted resilience indirectly through perceived social rank, and (b) whether perceived social rank predicted resilience indirectly through emotional stability. These analyses were intended to clarify the relative positioning of emotional stability within the proposed evolutionary model and to assess the robustness of the primary mediation findings.

Finally, to determine whether the primary mediation pathway linking social support to resilience through perceived social rank was attributed to shared variance with emotional stability, we estimated an additional model including both social support and emotional stability as predictors of perceived social rank and resilience. This analysis allowed us to evaluate whether the indirect effect of social support through perceived social rank remained when accounting for individual differences in emotional stability.

Method

Participants

Ethical approval

for this study was obtained from the Institutional Review Board of the authors affilitated institution (Protocol #2024-28), and every participant completed an informed consent process before their participation began. This study was funded by the authors affiliated institution and was registered on the Open Science Framework (OSF) (https://doi.org/10.17605/OSF.IO/AQJWF) before data collection began. A G*Power analysis (Faul et al., 2009) for a linear multiple regression set to a medium effect size and a 95% confidence interval recommend a minimal sample size of 153 participants. The study was a part of a larger investigation on telework and health. A total of 316 participants were initially recruited through Prolific, an online research platform, and were compensated 16 USD per hour for their participation. Of those, 60 participants were excluded for the following reasons: 14 for response discrepancies; 3 for indicating they were not teleworkers; 6 for highly improbable responses; 16 for incomplete surveys; 21 for failing attention checks. The final sample consisted of 256 participants. Inclusionary criteria were: working at least 31 hours weekly, sometimes or always working remotely, and using a computer or mobile device for at least 25% of their work.

Participants were primarily middle-aged adults, with an average age of 46 years (*Mdn* = 37, *SD* = 12.3), ranging from 18 to 66 years. The sample was balanced in terms of sex, with 131 participants identifying as female (50.6%) and 128 identifying as male (49.4%). The majority of participants identified as White (71.0%), followed by Black (10.8%), Hispanic (7.3%), Asian (6.9%), Other (2.3%), American Indian or Alaska Native (1.2%), and Middle Eastern or North African (0.4%). Participants held various organizational roles, with 37.5% reporting no supervisory role, 10.9% in a first-line supervisor position, 19.5% as team leaders, 24.6% as managers, 6.3% as executives, and 1.2% as senior executives.

Procedure and Measures

Before beginning the study, participants completed an informed consent process. No personally identifiable information was collected, and all data was stored securely in compliance with ethical research guidelines. The online survey was administered through Prolific on the Qualtrics

platform, and after survey completion, participants saw a debriefing screen and were provided links to mental health resources regarding workplace burnout.

Resilience

Resilience was measured using the 6-item Brief Resilience Scale (BRS; Smith et al., 2008), rated on a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree;* e.g., "I tend to bounce back quickly after hard times"). This scale was designed to assess one's perceived ability to "bounce back" from stress rather than general emotional stability. The BRS has demonstrated strong reliability across diverse samples. The internal reliability of the BRS for this study was strong, with a Cronbach's alpha = .90 (Appendix A).

Social Support

Social support was measured using the 4-item Social Support Scale (SSS; Peeters et al., 1995), rated a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree;* e.g., "There are people in my life who pay attention to my feelings and problems"). The SSS is a validated measure and showed strong internal reliability in this study with a Cronbach's alpha = .91 (Appendix B).

Social Rank

Perceived social-rank was assessed using the 11-item Social Comparison Scale (SCS; Allan & Gilbert, 1995), where participants rated themselves relative to others on a 10-point scale (e.g., 1 = *Unlikeable*, 10 = *More likeable*). Grounded in evolutionary theory, the internal reliability of the SCS for this study was strong, with a Cronbach's alpha = .90 (Appendix C).

Personality

Personological variables were assessed using the Ten-Item Personality Inventory (TIPI) (Gosling, 2003), which consists of the following subscales: Extraversion, openness, emotional stability, conscientiousness, and agreeableness. Consistent with the broader literature, we refer to the emotional stability dimension as *neuroticism (low emotional stability)* on first use and *neuroticism* thereafter; higher scores indicate greater emotional stability (i.e., lower neuroticism). Participants indicated their agreement with each item on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree; see Appendix D). Example items include"Extraverted, enthusiastic" and"Dependable, self-disciplined."

Organizational Status

Participants reported their position within their works organizational structure using predefined role categories (e.g., none, team leader, first-line supervisor, manager, executive, senior executive, Appendix E). These categories were coded to reflect increasing levels of organizational status within the hierarchy, with higher values indicating positions associated with greater formal authority or rank. This variable was treated as an ordinal indicator of participants' objective standing within their organizational hierarchy.

Results

Descriptive Statistics

Descriptive statistics (The Jamovi Project, 2024) indicated small mean differences between males and females. Males reported slightly higher resilience (*M* = 21.6, *SD* = 5.67) and perceived social rank (*M* = 71.7, *SD* = 17.2) than females (resilience: *M* = 20.6, *SD* = 5.44; rank: *M* = 67.9, *SD* = 14.6). In contrast, females reported slightly higher social support (*M* = 18.3, *SD* = 2.33) than males (*M* = 17.5, *SD* = 2.89).

Correlational Matrix

Table 1 presents the zero-order correlations among all study variables. The correlation matrix is provided primarily for descriptive purposes. Because the primary hypotheses were evaluated using regression and mediation models, corrections for multiple comparisons were not applied to these bivariate associations.

Resilience was most strongly associated with emotional stability (*r* = .67, *p* < .001), followed by perceived social rank (*r* = .53, *p* < .001) and social support (*r* = .29, *p* < .001). Perceived social rank was also positively correlated with emotional stability (*r* = .52) and conscientiousness (*r* = .46; all *ps* < .001). Social support showed moderate positive associations with openness (*r* = .34) and agreeableness (*r* = .33; both *ps* < .001).

We also examined if social rank perceptions were associated with participants' organizational status. For these analyses, organizational status was treated as an ordinal variable of increasing formal rank within the organizational hierarchy. As shown in Table 1, organizational status was positively associated with perceived social rank (*r* = .38, *p* < .001), indicating that individuals occupying higher formal positions also tended to perceive themselves as higher in social rank. This association provides convergent support for the interpretation that the Social Comparison Scale captures meaningful variation in perceived hierarchical standing within the organizational context.

Table 1. *Descriptives and correlations between study variables*

Variable	*N*	*M*	SD	Res.	Social Support	Social Rank	Org. Status	Extrav.	Agreeab.	Consc.	Emot. Stability	Open.
Resilience	256	21.1	5.57	-	-	-	-	-	-	-	-	-
Social Support	256	17.9	2.64	0.29***	-	-	-	-	-	-	-	-
Social Rank	256	69.7	15.8	0.53***	0.32***	-	-	-	-	-	-	-
Organizational Status	256	2.4	1.42	0.23***	0.11	0.38***	-	-	-	-	-	-
Extraversion	256	3.4	1.69	0.26***	0.29***	0.42***	0.34***	-	-	-	-	-
Agreeableness	256	5.4	1.21	0.32***	0.34***	0.22***	0.03	0.07	-	-	-	-
Conscientiousness	256	5.7	1.10	0.31***	0.21***	0.46***	0.18**	0.17**	0.17**	-	-	-
Emotional Stability	256	4.9	1.42	0.67***	0.35***	0.52***	0.26***	0.30***	0.39***	0.32***	-	-
Openness	256	5.2	1.25	0.37***	0.34***	0.40***	0.27***	0.35***	0.34***	0.21***	0.40***	-

Note: *p < .05, **p < .01, ***p < .001

Regression Analysis

A multiple linear regression was conducted to investigate the predictors of resilience (Table 2). The overall model was statistically significant, $F(7,248) = 35.6$, $p < .001$, with an R^2 of 0.50, indicating that approximately 50% of the variance in resilience could be explained by the predictors. The adjusted R^2 value was 0.49, further supporting the model's explanatory power.

Among the variables, only emotional stability and social rank emerged as significant predictors of resilience. Emotional stability demonstrated a strong predictive association ($\beta = 1.98$, $SE = 0.22$, $t = 8.89$, $p < .001$), suggesting that higher emotional stability was linked to increased perceived resilience. Social rank was also a significant positive predictor ($\beta = 0.08$, $SE = 0.02$, $t = 3.81$, $p < .001$), indicating that individuals with higher social rank reported greater resilience.

Other predictors, including extraversion ($p = .69$), agreeableness ($p = .34$), conscientiousness ($p = .73$), openness ($p = .28$), and social support ($p = .87$), did not significantly predict resilience in the model.

Table 2
Linear Regression Model Predicting Resilience

				95% CI		
Predictors	**Estimate**	***SE***	***t***	***LL***	***UL***	***p***
Intercept	2.44	2.05	1.19			0.24
Social Rank	0.08	0.02	3.81	0.04	0.12	< .001
Social Support	0.02	0.11	0.16	-0.20	0.23	0.87
Emotional Stability	1.98	0.22	8.85	1.54	2.42	< .001
Extraversion	-0.07	0.17	-0.41	-0.41	0.27	0.69
Agreeableness	0.23	0.24	0.96	-0.24	0.69	0.34
Conscientiousness	0.09	0.26	0.35	-0.42	0.60	0.73
Openness	0.26	0.24	1.09	-0.21	0.73	0.28

Note: Estimates are based on a sample size of N = 256. The model was statistically significant, indicating that approximately 50% of the variance in resilience is explained by the predictor variable

Mediation Analyses

A mediation analysis was conducted using Gallucci (2020) JAMOVI Mediation Model to explore whether social rank perceptions mediate the relationship between social support and resilience (Fig. 1). The analysis employed a general linear model (GLM) with a sample size of 256 participants.

The indirect effect of social support on resilience via social rank was significant and moderate in strength, $\beta = 0.158$, $SE = 0.0714$, $z = 4.66$, $p < .001$, indicating that part of the effect of social support on resilience was transmitted through perceived social rank. Specifically, social support significantly predicted higher social rank ($\beta = 0.326$, $SE = 0.3582$, $z = 5.51$, $p < .001$), and social rank, in turn, positively predicted resilience ($\beta = 0.485$, $SE = 0.0193$, $z = 8.74$, $p < .001$).

In addition to the indirect pathway, the direct effect of social support on resilience remained significant ($\beta = 0.137$, $SE = 0.1169$, $z = 2.46$, $p = .014$), suggesting partial mediation. The total effect of social support on resilience was $\beta = 0.294$, $SE = 0.1262$, $z = 4.92$, $p < .001$, supporting the overall importance of social support as a predictor of resilience. These findings suggest that social support contributes to resilience both directly and indirectly, with social rank functioning as a partial mediator in this relationship.

Figure 1.

GLM Mediation Analysis of Social Support to Resilience through Social Rank

Note

The mediation model predicting resilience from social support through perceived social rank was statistically significant. Social support was positively associated with social rank, and social rank was positively associated with resilience. The direct effect of social support on resilience also remained significant, indicating partial mediation. The indirect effect of social support on resilience through social rank was statistically significant (*indirect effect* = 0.333, $SE = 0.071$, $z = 4.66$, $p < .001$), suggesting that individuals with greater perceived social support may also perceive themselves as higher in rank, which is associated with stronger perceptions of personal resilience.

*$p < .05$, ***$p < .001$

To evaluate whether the hypothesized pathway was robust to alternative ordering, we tested a reverse mediation model in which social rank predicted resilience through social support (Fig. 2). Although this model produced a significant indirect effect, the standardized indirect effect was smaller than the hypothesized model ($\beta = 0.045$ vs $\beta = 0.158$), suggesting that the pathway from social support to resilience with perceived rank as the mediator provides a better statistical representation of the observed associations.

Figure 2.

GLM Mediation Analysis of Social Rank to Resilience through Social Support

Note

The mediation model predicting resilience from perceived social rank through social support was statistically significant. Perceived rank was positively associated with social support, and social support was positively associated with resilience. The direct effect of perceived social rank on resilience also remained significant, indicating partial mediation. The indirect effect of perceived social rank on resilience through social support was statistically significant (*indirect effect* = 0.016, $SE = 0.007$, $z = 2.25$, $p = 0.025$), suggesting that people who perceive themselves as higher in social rank may also report greater social support, which is associated with stronger perceptions of personal resilience.

*$p < .05$, *** $p < .001$

To examine whether the association between perceived social rank and resilience may be attributed to shared variance with emotional stability, additional mediation analyses was conducted incorporating emotional stability. In the first model, emotional stability was specificed as the predictor, social rank as the mediator, and resilience as the outcome (Fig. 3). Results indicated a significant indirect effect of emotional stability on resilience through social rank ($\beta = .129$, $p = .001$), suggesting that people higher in emotional stability tended to report higher perceived social rank, which in turn was associated with greater resilience. Additionally, emotional stability also retained a significant direct associated with resilience ($\beta = .542$, $p = .001$), indicating that both emotional stability and perceived rank contributed to resilience.

Figure 3.

GLM Mediation Analysis of Emotional Stability to Resilience through Social Rank

Note

The mediation model predicting resilience from emotional stability through perceived social rank was statistically significant. Emotional stability was positively associated with perceived social rank, and perceived social rank was positively associated with resilience. The direct effect of emotional stability on resilience also remained significant, indicating partial mediation. The indirect effect of emotional stability on resilience through perceived rank was statistically significant (*indirect effect* = 0.503, $SE = 0.118$, $z = 4.29$, $p < .001$), suggesting that people

higher in emotional stability may also perceive themselves as higher in social rank, which is associated with stronger perceptions of personal resilience.

****p* < .001

To further explore the relationship among these variables, an alternative model was estimated in which perceived social rank predicted resilience through emotional stability (Fig. 4). This model yielded a significant indirect effect (β = .542, p = .001), indicating that individuals who perceived themselves as higher in social rank also tended to report greater emotional stability, which was associated with higher resilience.

Figure 4.

GLM Mediation Analysis of Social Rank to Resilience through Emotional Stability

Note

The mediation model predicting resilience from perceived social rank through emotional stability was statistically significant. Perceived social rank was positively associated with emotional stability, and emotional stability was positively associated with resilience. The direct effect of perceived social rank on resilience also remained significant, indicating partial mediation. The indirect effect of perceived social rank on resilience through emotional stability was statistically significant (*indirect effect* = 0.098, *SE* = 0.014, *z* = 7.10, *p* < .001), suggesting that people who perceive themselves as higher in social rank may also report greater emotional stability, which is associated with stronger perceptions of personal resilience.

* *p* < .001

Finally, to evaluate whether the mediation pathway from social support to resilience through perceived social rank remained after accounting for emotional stability, a combined model was estimated including both social support and emotional stability as predictors of social rank and resilience (Fig. 5). In this model, social support remained positively associated with perceived social rank (β = .16, p = .003), and perceived social rank continued to significantly predict resilience (β = .24, p < .001). Emotional stability was also strongly associated with both perceived social rank (β = .46, p < .001) and resilience (β = .53, p < .001). Importantly, the indirect effect of social support on resilience through social rank perceptions was statistically significant (*indirect effect* = 0.084, *SE* = 0.034, *z* = 2.47, *p* = 0.013) even after accounting for emotional stability. In contrast, the direct effect of social support on resilience was no longer significant (β = .029, p = .553), suggesting that the association between social support and resilience was fully mediated by perceived rank when emotional stability was included in the model.

Figure 5.

Mediation Model of Social Support and Resilience Through Perceived Social Rank, Controlling for Emotional Stability

Note

The mediation model examined whether perceived social rank mediated the relationship between social support and resilience while accounting for emotional stability. Social support was positively associated with social rank perceptions, and social rank was positively associated with resilience. Emotional stability was also strongly associated with both perceived social rank and resilience. The direct effect of social support on resilience was not statistically significant when social rank and emotional stability were included in the model. However, the indirect effect of social support on resilience through perceived social rank remained statistically significant (*indirect effect* = 0.084, *SE* = 0.034, *z* = 2.47, *p* = .013), indicating a full mediation. Individuals with greater perceived social support may perceive themselves as higher in social rank, which in turn is associated with stronger perceptions of personal resilience independent of emotional stability. Emotional stability also demonstrated a significant indirect association with resilience through perceived social rank (*indirect effect* = 0.438, *SE* = 0.109, *z* = 4.01, *p* < .001).

***p* < .01, ****p* < .001

Across models, both emotional stability and perceived rank demonstrated significant associations with resilience, suggesting that these constructs are closely related yet partially distinct predictors of perceived resilience.

Discussion

Resilience is essential to human thriving, yet the literature lacks conceptual clarity and its underlying mechanisms remain understudied. The current findings provide preliminary support for the Social Rank Hypothesis of Resilience, an evolutionary model positing that resilience reflects individuals' perceived social rank, which informs decisions about approaching or withdrawing from adversity. Consistent with this model, higher perceived social rank significantly predicted resilience, aligning with prior research linking higher status to improved mental health, greater self-

efficacy, and enhanced goal-directed behavior (Wetherall et al., 2019; Zhang et al., 2025). These findings are also consistent with the notion that higher rank reflects greater estimated success in competition (Gilbert et al., 1995). However, we did not measure estimates of success directly, and future research is needed to test this mechanism explicitly.

When neuroticism was included in the model, the relationship between social support and resilience was fully mediated by perceived social rank. This pattern may suggest that perceived social rank represents an important pathway through which social relationships influence resilience, even when accounting for individual differences in personality. These results align with prior research separately linking neuroticism to poorer social support and lower perceived status (Morstead et al., 2023; Alfonsi et al., 2011).

Consistent with this interpretation, an alternative model indicated that perceived social rank also predicted resilience indirectly through neuroticism, though this pathway was weaker in magnitude. The hypothesized model (social support → perceived social rank → resilience) produced a stronger indirect effect than the reverse pathway. This pattern is consistent with rank-sensitive models of social behavior and with evidence linking social alliances, status, and competitive outcomes across social species, including humans (e.g., de Waal, 2007; Redhead & Power, 2022).

The current findings suggest that social alliances may function as cues that influence perceived social rank, which in turn relates to resilience as operationalized here as the capacity to cope with and adapt to challenge, possibly including contexts that are not explicitly social. An alternative interpretation is that neuroticism reflects the output of low perceived social rank, shaped in part by the strength of social alliances. In this view, neuroticism reflects affective and cognitive adaptations—including vigilance, negative affect, and heightened sensitivity to social threat—elicited by insecure social positioning. Taken together, the present framework proposes that resilience may not merely be a general coping capacity, but a functionally specialized mechanism shaped by selection pressures to regulate behavior in response to changes in social rank and coalitionary support.

Consistent with these interpretations, mediation analyses further indicated that perceived social rank and neuroticism were embedded within significant indirect pathways linking social support and resilience, including evidence for both rank-to-resilience and rank-to-neuroticism pathways. These patterns are compatible with the possibility that neuroticism reflects a downstream calibration of affective-cognitive systems sensitive to social positioning, rather than an independent source of variance. However, given the cross-sectional design, causal direction cannot be determined. Future research using longitudinal, experimental, or within-person methodologies will be necessary to adjudicate between competing models and clarify the temporal ordering of these processes.

Limitations and Future Directions

Several limitations warrant consideration. First, as previously stated, the cross-sectional design precludes causal inference, therefore, the analyses should be interpreted as tests of statistical consistency rather than evidence of causal ordering. Second, reliance on self-report measures introduces the potential for response biases, including social desirability. Third, the sample consisted of U.S.-based human service workers engaged in remote or hybrid work, which may limit generalizability to other populations. Fourth, we did not directly measure perceived success in social competition or the approach-avoidance signaling functions, therefore we have limited direct tests of certain evolutionary mechanisms. Future research should address these limitations by employing longitudinal designs, incorporating behavioral and physiological measures of social rank and competitive success, and sampling diverse occupational, cultural, and age groups. Additionally, future research should examine boundary conditions regarding social rank perceptions, investigate which dimensions of social support most strongly influence resilience, and clarify how resilience may differ across personal and workplace contexts. Such approaches and investigations would allow more precise tests of the Social Rank Hypothesis and clarify the dynamic interplay between personality, social evaluations, and resilience across contexts.

Conclusions

The present findings suggest that resilience may be shaped by social and evolutionary processes related to rank and coalitionary support. Interventions aimed at enhancing resilience may therefore benefit from strategies that target emotional stability, strengthen social support, and influence perceptions of hierarchical standing. Understanding how individuals interpret social competition and evaluate their social rank may be critical for promoting adaptive coping and psychological well-being.

Declarations

Author Contribution

J.R. and H.G. conceptualized the study, developed the theoretical framework, designed the methodology and wrote the main manuscript text. J.R. conducted the analyses and created the tables and figures.

Data Availability

All data are available upon request.

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Figures

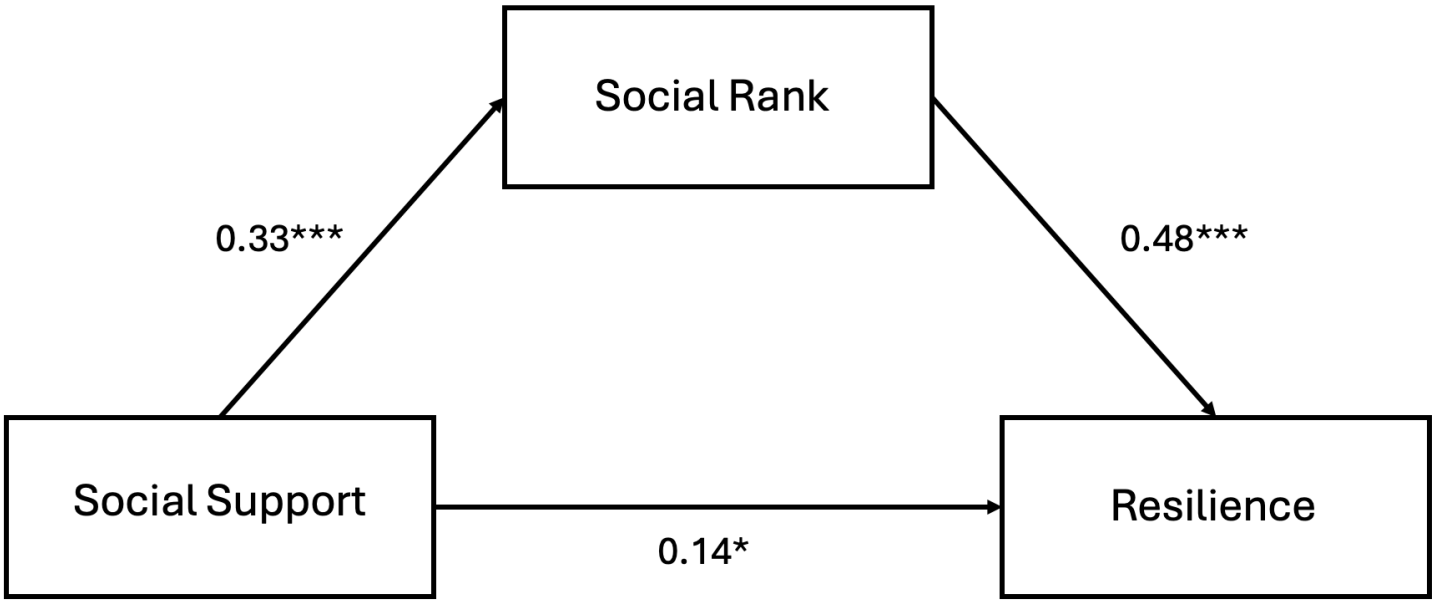


Figure 1

GLM Mediation Analysis of Social Support to Resilience through Social Rank

Note. The mediation model predicting resilience from social support through perceived social rank was statistically significant. Social support was positively associated with social rank, and social rank was positively associated with resilience. The direct effect of social support on resilience also remained significant, indicating partial mediation. The indirect effect of social support on resilience through social rank was statistically significant (*indirect effect* = 0.333, *SE* = 0.071, *z* = 4.66, *p* < .001), suggesting that individuals with greater perceived social support may also perceive themselves as higher in rank, which is associated with stronger perceptions of personal resilience.

*$p < .05$, ***$p < .001$

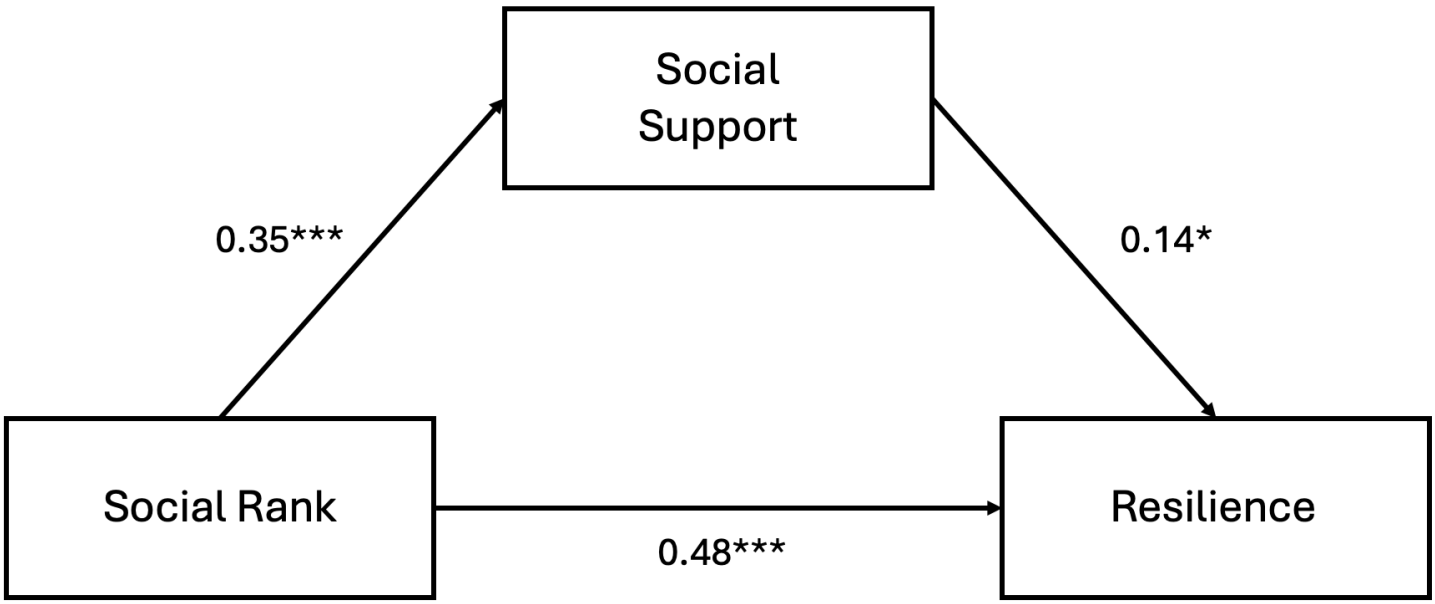


Figure 2

GLM Mediation Analysis of Social Rank to Resilience through Social Support

Note. The mediation model predicting resilience from perceived social rank through social support was statistically significant. Perceived rank was positively associated with social support, and social support was positively associated with resilience. The direct effect of perceived social rank on resilience also remained significant, indicating partial mediation. The indirect effect of perceived social rank on resilience through social support was statistically significant (*indirect effect* = 0.016, *SE* = 0.007, *z* = 2.25, *p* = 0.025), suggesting that people who perceive themselves as higher in social rank may also report greater social support, which is associated with stronger perceptions of personal resilience.

*$p < .05$, *** $p < .001$

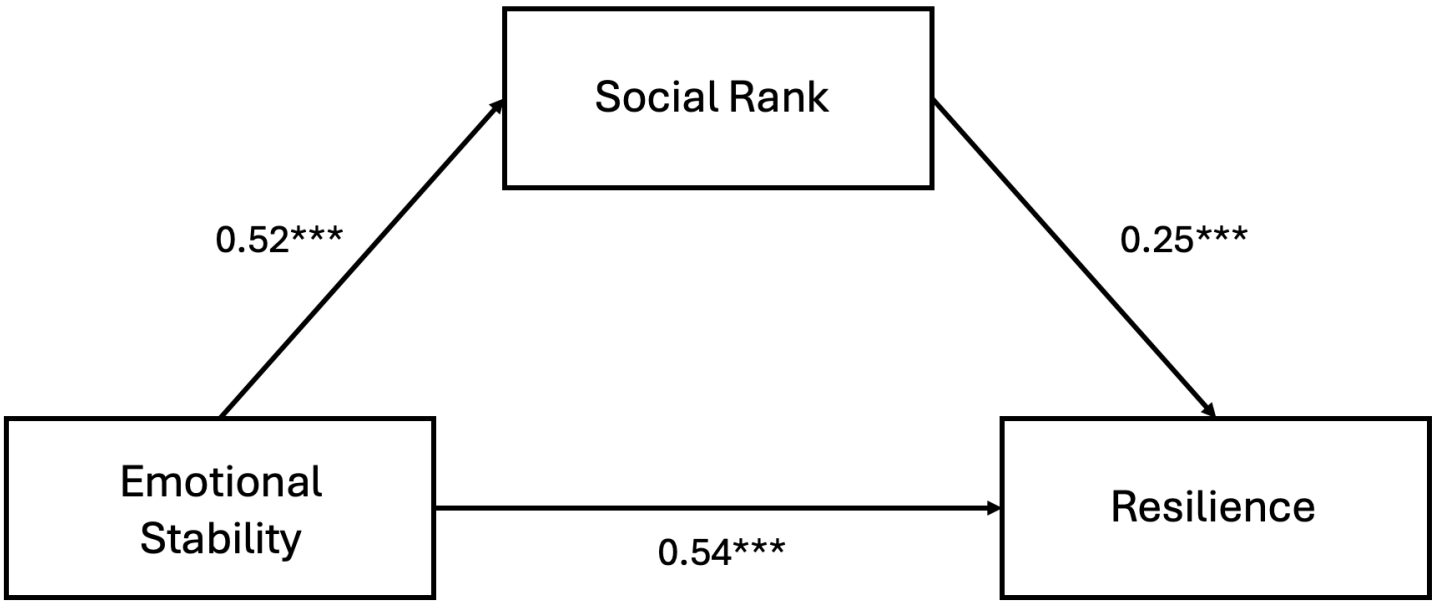


Figure 3

GLM Mediation Analysis of Emotional Stability to Resilience through Social Rank

Note. The mediation model predicting resilience from emotional stability through perceived social rank was statistically significant. Emotional stability was positively associated with perceived social rank, and perceived social rank was positively associated with resilience. The direct effect of emotional stability on resilience also remained significant, indicating partial mediation. The indirect effect of emotional stability on resilience through perceived rank was statistically significant (*indirect effect* = 0.503, *SE* = 0.118, *z* = 4.29, *p* < .001), suggesting that people higher in emotional stability may also perceive themselves as higher in social rank, which is associated with stronger perceptions of personal resilience.

***$p < .001$

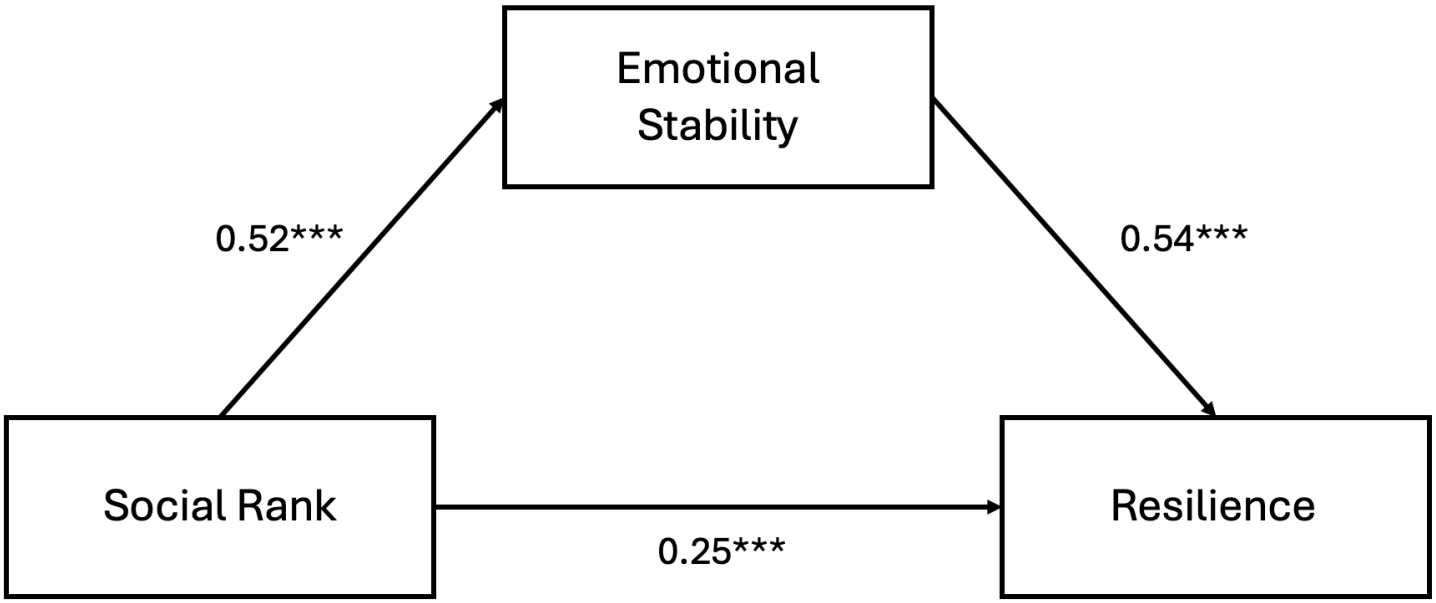


Figure 4

GLM Mediation Analysis of Social Rank to Resilience through Emotional Stability

Note. The mediation model predicting resilience from perceived social rank through emotional stability was statistically significant. Perceived social rank was positively associated with emotional stability, and emotional stability was positively associated with resilience. The direct effect of perceived social rank on resilience also remained significant, indicating partial mediation. The indirect effect of perceived social rank on resilience through emotional stability was statistically significant (*indirect effect* = 0.098, *SE* = 0.014, *z* = 7.10, *p* < .001), suggesting that people who perceive themselves as higher in social rank may also report greater emotional stability, which is associated with stronger perceptions of personal resilience.

**p* < .001

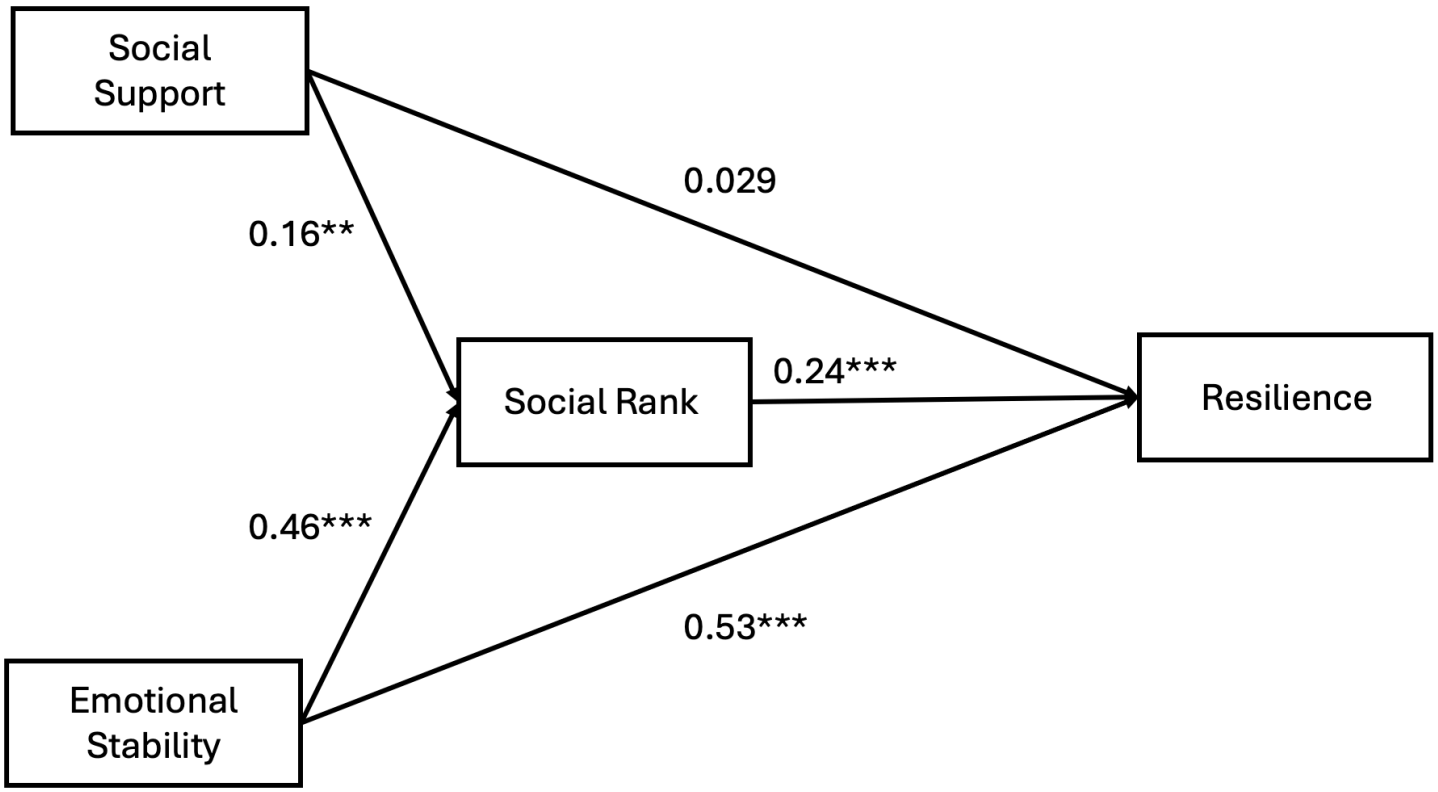


Figure 5

Mediation Model of Social Support and Resilience Through Perceived Social Rank, Controlling for Emotional Stability

Note. The mediation model examined whether perceived social rank mediated the relationship between social support and resilience while accounting for emotional stability. Social support was positively associated with social rank perceptions, and social rank was positively associated with resilience. Emotional stability was also strongly associated with both perceived social rank and resilience. The direct effect of social support on resilience was not statistically significant when social rank and emotional stability were included in the model. However, the indirect effect of social support on resilience through perceived social rank remained statistically significant (*indirect effect* = 0.084, *SE* = 0.034, $z = 2.47$, $p = .013$), indicating a full mediation. Individuals with greater perceived social support may perceive themselves as higher in social rank, which in turn is associated with stronger perceptions of personal resilience independent of emotional stability. Emotional stability also demonstrated a significant indirect association with resilience through perceived social rank (*indirect effect* = 0.438, *SE* = 0.109, $z = 4.01$, $p < .001$).

$^{**}p < .01$, $^{***}p < .001$

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